Librarians and Teaching Faculty in Information Literacy Assessment

Implications of Disciplinary Conditions for the Interpretation of Documents in the Bologna Process

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Abstract

Som en följd av att informationskompetens lyfts fram i Bolognaprocessen som ett betydelsefullt element i all högre utbildning har ämnet uppmärksammats i stigande grad inom universitetsvärlden. Bolognaprocessen har även föranlett ändringar i svensk lagstiftning som gör kursplaner till juridiskt bindande dokument. Kursplanernas lärandemål måste examineras för att man ska kunna säkerställa att de har uppfyllts. Samhällsvetenskapliga fakulteten som inom Lunds universitet ligger i framkanten av genomförandet av dessa förändringar har fastställt riktlinjer för hur examination av informationskompetens ska utföras. Syftet med denna magisteruppsats är att, med utgångspunkt i dessa styrdokument från Lunds universitet, undersöka hur Bolognaprocessens riktlinjer kan utgöra en arena för samarbete mellan bibliotekarier och ämneslärare kring examination av informationskompetens, och vilka förutsättningar för framgångsrik samverkan som kan urskiljas inom yrkesgruppernas teoretiska traditioner. Detta görs genom textanalys av dokument som producerats inom ramen för Bolognaprocessen, eller som en följd av den. Som bakgrund till dokumentanalysen presenteras en litteraturstudie med fokus på hur examination av informationskompetens behandlas inom den biblioteks- och informationsvetenskapliga litteraturen och inom *Higher Education*-litteraturen. Därtill diskuteras begreppen informationskompetens och kritiskt tänkande, hur de definieras och används, samt relationen dem emellan och till livslångt lärande.

Resultaten visar att begreppet informationskompetens används främst inom biblioteks- och informationsvetenskap medan begreppet kritiskt tänkande används i liknande sammanhang inom *Higher Education*. Begreppen är närliggande, de överlappar varandra men fokuserar på olika aspekter av området. Båda anses vara användbara verktyg för livslångt lärande. Inom biblioteks- och informationsvetenskap finns olika uppfattningar om informationskompetens, som kontextbundet eller som överförbara färdigheter. Liknande uppdelning finns mellan *Higher Education*-teoretikernas uppfattning om kritiskt tänkande. En framträdande skillnad mellan disciplinerna är att inom biblioteks- och informationsvetenskap är samarbete mellan bibliotekarier och ämneslärare efterfrågat, vilket helt saknas inom *Higher Education*. I de studerade dokumenten uttrycks en uppfattning om informationskompetens som främst kontextbundet men samtidigt överförbart.

I analysen visade det sig att det endast var i de lokala styrdokumenten som termen informationskompetens faktiskt används. Livslångt lärande har alltså tolkats som att förutsätta informationskompetens, då man hänvisar till Bolognaprocessens dokument där termen livslångt lärande istället används. Bolognadokumenten uttrycker en syn på informationskompetens som kontextbundet, vilket ger goda förutsättningar för samarbete, då den kräver insatser från både bibliotekarier och ämneslärare.

Keywords

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1. Introduction

Information literacy (IL) is a disputed concept, difficult to define. It is primarily debated within the Library and Information Science (LIS) community. When the concept is discussed within other disciplines, a different terminology is often used (Albitz 2007). Establishing the relationships between different concepts used makes it possible to discern different approaches to IL, also in contexts where the term is not used. Despite terminological differences, there seems to be general agreement that IL related knowledge is important for several reasons; not least as a prerequisite for lifelong learning, democracy and active citizenship (e.g. IFLA 2005, Ennis 1995 and McMurray, Thompson & Beisenherz 1989).

In a rapidly changing society overflowing with information, the ability to independently find relevant information, to evaluate it, to make a proper selection and to use the selected information, is becoming increasingly important. This applies not least to students in higher education, as reflected in curricula and other control documents (e.g. SFS 1992:1434 Higher Education Act and The Prague Communiqué of 2001). The Bologna Process places new demands on universities to recognize areas of knowledge that in the LIS community are regarded as parts of IL, as a vital aspect of higher education (e.g. Jönsson 2006, p. 1). In addition, the Bologna Process has entailed change in Swedish legislation making curricula legally binding documents that must be formulated in accordance with specific directives. Each and every learning outcome must be assessed in order to certify that the students have achieved them.

These new circumstances brought about by the Bologna Process bring challenges for both librarians and teaching faculty, but also a unique opportunity for combining their fields of competence in a collaboration with shared goals. In the LIS literature this collaboration is animately discussed and desired (e.g. Jenkins 2005, Sonntag & Meulemans 2003, Scales, Matthews & Johnson 2005). It is crucial for this collaboration that consensus is reached concerning what constitutes IL. This is easier said than done not least since the LIS and Higher Education (HE) traditions are at variance concerning the use of terminology. While IL is a widely recognized concept in the LIS field, the closest related and comparable concept in the HE tradition is, as will be argued in this thesis, *critical thinking* (CT). These two concepts are not completely equivalent though, and emphasis is placed on different aspects of the area of knowledge referred to.

This study recognizes the necessity to discern predominant views on IL related knowledge within the two disciplines and in what ways they are compatible. These views influence the implementation of the guidelines concerning IL related issues outlined within the framework of the Bologna Process. The differences must be acknowledged in order to avoid a situation where implementation is hindered by two professions not speaking the same language. Hence, before reaching agreement on how practical arrangements are best organized, and how responsibility should be divided, a common ground of theoretical understanding must be achieved.

The teaching and assessment of IL, brought to the fore by the Bologna Process, are issues of increasing importance. Scholars in the field have often stressed the impact that the method of outcomes assessment has on both the framing of teaching and on student learning (e.g. Havnes 2004, Bourner 2003 and Brown, Bull & Pendlebury 1997). Outcomes assessment is in general a debated subject. It has for instance been argued that outcomes assessment in itself legitimates ideological structures within the university and reproduces relationships of power (e.g. Elmborg 2006 and Leathwood 2005). Considering the importance of assessment and its implications for students and learning environments as a whole, it is highly relevant to focus on this aspect of IL and its implementation in higher education. It is also a concrete context in which views of IL are expressed, and it is focused enough to be studied in a rewarding way.

1.1 Background – The Bologna Process

The Bologna Process is a European initiative that aims at creating a European Higher Education Area by 2010 (Commission of the European Communities 2007). The Bologna Declaration was signed in June 1998 by 29 countries; all the European Union's member states, all the EFTA (European Free Trade Association) countries, and several countries in Eastern and Central Europe. Today 46 countries take part in the Bologna Process (Internationella Programkontoret's website 2008).

Three major goals, following the Sorbonne Declaration (a declaration concerning European collaboration in higher education issues, signed by Germany, France, Great Britain and Italy) of May 1998, are established in the Bologna Declaration: promoting mobility, promoting employability, and increasing the international competitiveness of European higher education (The Bologna Declaration 1999, Internationella Programkontoret's website 2008). These three goals are divided into six operational goals:

- Implementation of "easily readable and comparable degrees"
- Adoption of an educational system "based on two main cycles, undergraduate and graduate", a third, doctorate, cycle is later added to these two cycles
- Establishment of a common system of credits
- Overcoming obstacles to mobility for students and teachers
- Promotion of European "co-operation in quality assurance issues"
- Promotion of a "European dimension in higher education"

<div align="right">(The Bologna Declaration 1999)</div>

The objectives above all aim at greater compatibility and comparability of European systems of higher education, illustrating how uniformity is considered the best way to achieve the overriding aim and the main goals of the Bologna Process. According to the Commission of the European Communities (2007) "Introduction of the three cycle system [bachelor/master/doctorate; doctorate level added in Berlin 2003. Authors' note], quality assurance and recognition of qualifications and periods of study" are the areas of priority.

Various national and international documents of greater or lesser importance have followed in the trail of the Bologna Process. The Berlin Communiqué of 2003, a result of the Higher Education Minister summit (the Ministers have also met in Prague 2001, Bergen 2005 and in London 2007) held to measure progress and outline priorities for

the next step in the process, declared that a third cycle, the doctorate level, is to be added to the two existing (undergraduate and graduate). So far, this is the biggest revision of the outlined goals (Commission of the European Communities 2007, the Berlin Communiqué 2003).

The Bologna Process documents are not legally binding, but have had great impact on many of the participating countries' educational systems, amongst them Sweden's. For example, as a direct consequence of the Bologna Process, Sweden changed the educational system structure in 2006 to conform to the directions outlined in the Bologna Declaration (Internationella Programkontoret's website 2008).

1.2 Information Literacy

The concept of IL is problematic to define. It is here assumed that some of the obstacles to effective communication between the LIS and the HE communities are due to the fact that they are separate traditions, with different sets of generally recognized "truths" and hence different points of departure, and that their different foci partly depend on this. This study examines two disciplines using different terminologies to describe similar phenomena. Focus is placed on IL for three reasons. First, this study positions itself within LIS. Second, the term IL covers more aspects of information related activities than alternative terms found in the HE tradition, such as *critical thinking* or *higher order thinking skills*. Third, IL is the term used in the Lund University documents in which this study has its point of departure. Hence, the term IL is used in a broad sense, and in order to cover the various definitions of IL, it has in working with the literature searches performed within the scope of this study, been defined as the knowledge needed to:

locate, evaluate, use and produce information.

To refer to contexts in which these issues are analysed, but in which the term IL is not used, the terms *IL related issues* or *IL related knowledge* are used. The focus of this study is *outcomes assessment*, for practical reasons used interchangeably with *assessment*. When referring to teaching staff at universities, *faculty* and *teaching faculty* are used without any difference in meaning.

1.3 Purpose

The area of interest to this study is collaboration between librarians and teaching faculty in working with IL. The two professions work towards the same formal goals, formulated in the Higher Education Act and other ruling documents, but are anchored in different theoretical disciplines with different foci. The Bologna Process entails major structural changes in the Swedish educational system, and emphasizes IL related knowledge as a key feature of higher education. The purpose of this study is to investigate how the guidelines composed within the framework of the Bologna Process can provide common ground for librarian-faculty collaboration. This study focuses on IL assessment as a concrete expression of how IL is regarded within a wider Bologna

context. In order to answer a comprehensive research question it can be fruitful to study the details, as the whole expresses itself in the parts and vice versa.

This study has its point of departure in documents on IL issues produced at Lund University in the trail of the Bologna Process. These local documents are a direct consequence of, refer to, and relate to, documents at higher levels, and IL initiatives are explained by reference to the Bologna Process. Hence, how the implementation of IL initiatives is performed in practice is a consequence of how higher-level documents have been interpreted by those responsible for the implementation, in this case librarians and teaching faculty. Through studying how the documents on higher levels treat the issue, these interpretations can be illustrated and explained. The guiding research question can thus be formulated:

- What are the conditions for the Bologna Process to provide common ground for librarians and teaching faculty to meet and collaborate in issues concerning information literacy outcomes assessment, and under which conditions can this occur? Specifically, the focus is on how this is reflected in selected information literacy documents issued by Lund University.

In order to analyse this question it is crucial to examine how the concept of IL and outcomes assessment thereof is viewed within the LIS and HE disciplines. Understanding the differences between the theoretical traditions that librarians and teaching faculty stem from is essential in investigating the possible impact of the Bologna Process on their collaboration. IL is a complex and a somewhat controversial concept, as are the other closely related concepts explored in this study. Therefore, extensive accounts for these concepts and the terminology surrounding them, as well as for how assessment thereof is regarded in the LIS and the HE literatures, constitute a necessary fundament for analysis of the Bologna documents. Consequently, the following subordinate questions must also be addressed:

- How do the Library and Information Science and Higher Education disciplines respectively relate to assessment of information literacy?

- What conditions for collaboration between librarians and faculty in aspects of information literacy assessment can be discerned within the literatures of Library and Information Science and Higher Education?

Practical arrangements concerning collaboration between librarians and teaching faculty do not fall within the scope of this study, nor will the latter's specific subject knowledge and that discipline's possible assumptions about IL be addressed. Another aspect not addressed is the conceptions and attitudes of individuals concerning IL related knowledge or implications of the Bologna Process. A vast number of documents have been produced in the trail of the Bologna Process. These documents treat as diverse areas as making degrees comparable, the mobility of students, and co-operation in quality assurance issues. The focus of this study will solely lie upon the parts in which IL related issues are treated.

1.4 Outline

In order to reach an answer to the research questions posed in this study, it has been necessary to conduct both a literature study and document analyses. These research questions and the purpose of this study have been presented in chapter 1, and are followed by method related issues outlined in chapter 2. The literature review and the conclusions that can be drawn from it are presented and discussed in chapter 3. The chapter opens with a section on terminology. Also assessment theory is briefly accounted for in chapter 3. In chapter 4, the analyses of documents are presented, closing with a discussion on the results and the conclusions that can be drawn from them. In chapter 5 the results from the literature review and the textual analyses are merged, and the final findings of this study are presented. Two appendices are added, the first consisting of short presentations of cited authors in alphabetical order, and the second a list of footnotes with original Swedish texts that have been translated by the authors of this study.

2. Method

Although the overall area of interest is the impact of the Bologna Process on collaboration between librarians and faculty in outcomes assessment of IL, this study's focus is twofold. To begin with, IL related literature is examined within the LIS and HE disciplines in order to ascertain what prospects there are for finding common ground for the two professions, whereupon focus is shifted towards how the guidelines provided by the Bologna Process can function as a unifying device. The selected documents are on different levels (European, Swedish and university level) and deal with IL and outcomes assessment thereof, sometimes using the term IL and sometimes reflecting IL through related concepts such as lifelong learning or CT. Through textual analyses of these documents, perspectives are discerned and interpretations likely to be made by librarians and faculty are explored. The selection process and criteria will be discussed in chapter 2.1.1. As previously mentioned, conceptions and attitudes of individuals concerning IL related knowledge or the impact of the Bologna Process on the implementation in practice, are not addressed in this study, excluding interviews as a useful method of data collection.

As this study is concerned with how similar notions are discussed in different contexts through different terminology, special attention will be paid to how the discipline-specific contexts influence, limit and permeate discussions in the two traditions, i.e. what "given truths" or conditions there are that may indirectly govern the discussion. This is done from a LIS perspective, which inevitably to a certain degree colours how the analysed material is understood.

2.1 Textual Analysis

Textual analysis concerns interpretation of texts on different levels. According to Hellspong (2001, p. 160) all textual analyses can in a general sense be said to be hermeneutic as they engage in some kind of interpretation of text. A crucial concept in the field of hermeneutics is *the hermeneutic circle*. It refers to the relation between the whole and the parts, a relation that according to Alvesson and Sköldberg (2000, p. 53) must be considered in all hermeneutic textual analysis. The interpretation of the individual part is dependent on the whole and vice versa (Gilje and Grimen 1992, p. 191). This exposes the fundamental pre-supposition of hermeneutics; that there is a "harmonious, basic wholeness" that expresses itself in every part, and hence will reveal itself in the analysis (Alvesson & Sköldberg 2000, p. 104). In this study IL assessment forms the concrete context through which attitudes towards IL in a larger Bologna perspective are studied. Alvesson and Sköldberg present the following principles

characterizing hermeneutic methodology, drawn up by Madison (1988, in Alvesson & Sköldberg 2000, p. 60):

> (a) *Coherence* – the interpretation should be logically consistent.
> (b) *Comprehensiveness* – regard for the whole of the work.
> (c) *Penetration* – the underlying, central problematic should be laid bear.
> (d) *Thoroughness* – all the questions raised by the text should be answered.
> (e) *Appropriateness* – the questions should be raised by the text, not by the interpreter.
> (f) *Contextuality* – the text should be set in its historical-cultural context.
> (g) *Agreement (1)* – the interpretation should agree with what the author really says, without distortions.
> (h) *Agreement (2)* – the interpretation should agree with established interpretations of the text.
> (i) *Suggestiveness* – the interpretation should be 'fertile' and stimulate the imagination.
> (j) *Potential* – the application of the interpretation can be further extended.
> (Alvesson & Sköldberg 2000, p. 60)

These principles form the foundation for the textual analysis, functioning as general guidelines throughout the process. In this study the principles (e), (g) and (h) are questioned, the latter two with reference to the general philosophy of science encouraging the development of critical thought on established truths, aligned with the critical stance towards decontextualized knowledge taken in this study. Also Alvesson and Sköldberg (2000, p. 60) note some problematic aspects of principles (g) and (h), e.g. that they stand in opposition to stimulation of imagination and further extension of the interpretation as is prescribed in (i) and (j). Considering principle (f), the historical-cultural context is here not addressed in its traditional meaning. Instead it is replaced by discipline-specific contexts. When it comes to principle (e), this study adopts the view that the interpreter and the context in which she operates cannot be separated from the text (noted as well by Alvesson and Sköldberg 2000, p. 60), and that attempts to erase or ignore the interpreter's role are both unnecessary and unproductive. It is, after all, the interpreter's very asking of questions that is the engine of the analysis.

It is important to recognize the difference between acknowledging the role of the interpreter and performing an interpreter-centred analysis, which is one of the four strategies of interpretation outlined by Bergström and Boréus (2005, p. 24). The remaining three are the sender-centred, the receiver-centred, and finally the context-centred strategy, in which focus not is laid upon any specific agent. Bergström and Boréus (2005, p. 24) derive these strategies from five elements: text, context (including discourse), sender, receiver, and interpreter. None of the strategies can be fully separated from any of the other, but considering the aim of this study focus will lie upon the sender-centred and the receiver-centred strategies (Bergström and Boréus 2005, p. 24, 26-27).

The purpose of the textual analysis is twofold. Partly it is to discern how the issues in question were treated in the production of the texts, and how these thereby were charged with meaning. Partly it is to explore how these texts can be perceived by a receiver or a group of receivers, in this case librarians and faculty respectively.

A fundamental feature of hermeneutics is pre-understanding, the notion that understanding never occurs in a vacuum. Unprejudiced understanding is impossible; on the contrary it is pre-understanding that enables understanding (Gilje & Grimen 1992, p. 183). From a LIS perspective this study explores the impact of the different traditions of

LIS and HE on librarians' and faculties' possible interpretations of the documents analysed, more specifically how the school of thought accepted within each tradition respectively, colours, limits and directs their perception of these. In practice the textual analysis is performed through identification of what is said of IL and assessment thereof and in what contexts it occurs. The results form the foundation for the further analysis in which underlying conceptions of IL present in the documents, and their implications, are explored.

2.1.1 Selection

The aim in the selection process was to find the core documents that have had the greatest impact on IL becoming a learning outcome at universities in Sweden, and those that have the greatest potential of offering guidance for the collaboration between librarians and faculty in its implementation. The result was twelve selected documents (including twelve curricula counted as one document) that can be divided into the three levels: European, Swedish national, and university departmental. Hence, the first group of documents contain the original Bologna guidelines, whereas the other documents have been altered or produced as a part of the Bologna Process. The documents on the departmental level are produced at the Department of Psychology at Lund University that has been selected as an example of how the demand for emphasis on IL related knowledge brought by the Bologna process is implemented. The main reason for selecting this department was that The Faculty of Social Sciences (*Samhällsvetenskapliga fakulteten*) excels in IL initiatives within Lund University, and the Master Programme in Psychology is among the most extensive and most popular programmes within that faculty.

The Bologna Declaration of 1999 must be recognized as the absolute core document on this level. Summits have regularly been held to follow up on the progress in implementing its directives, and communiqués produced at these ministerial meetings were also judged to be essential in this study. Hence, also the following documents were selected: *The Prague Communiqué* of 2001, *The Berlin Communiqué* of 2003, *The Bergen Communiqué* of 2005, and *The London Communiqué* of 2007. An additional document, *The Dublin Descriptors*, was added as it is one of few Bologna documents exclusively addressing IL related issues.

When selecting documents at the national level the choice fell on *The Higher Education Act* (*Högskolelagen,* SFS 1992:1434) and *The Higher Education Ordinance* (*Högskoleförordningen*, SFS 1993:100), both altered as a step in the Bologna Process, although attention is limited to the sections that raise the issue of IL related knowledge. The ninth document, the qualifications for a degree of Master of Science in Psychology, established in Appendix 2 of the *Higher Education Ordinance*, is grouped with the documents on the departmental level, as the qualificationss apply to the departmental context and not to all departments at all universities.

A project report from the Faculty of Social Sciences (Jönsson 2006) was selected as it offers insight into how the specific faculty in question handles the issues of interest. As a consequence of that report The Social and Behavioural Sciences Library (*Social- och beteendevetenskapliga biblioteket*) drew up a document containing guidelines for implementation of IL learning outcomes at the Faculty of Social Sciences (Social- och beteendevetenskapliga biblioteket 2007), providing directions for the teaching and assessment of IL. Finally the curricula for the Master Programme in

Psychology at Lund University were chosen to represent the actual implementation of the Bologna directives at course level. It has been confirmed by the Department of Psychology that these are the key control documents regarding IL related issues.

2.2 Validity and Reliability

Validity and reliability are important quality measures to be considered at all stages of the research process. According to Wallén's (1996, p. 67) definition validity is attained if what is meant to be measured – and only that – is in fact measured, while reliability depends on if the instrument used is reliable, meaning that if repeated the study would give the same results. Whereas in quantitative research the meaning of these terms is fixed, it varies in the qualitative tradition and especially the term validity is debated. It is by some strongly connected with quantitative methods and it has been argued that it is not applicable to qualitative methods. Others claim that application is possible but that adjustment to the qualitative context is necessary, and hence that the term can be replaced by *credibility* or *understanding* (Svensson 1996, s. 209, 211). This study takes the view that the terms validity and reliability are applicable to, and relevant for, qualitative research if the dissimilarity with quantitative research is recognized and the meaning of the terms are accordingly modified. According to Svensson (1996, s. 210) the concept of reliability draws near the concept of validity in qualitative research, as reliability cannot be judged without regarding validity. Thus, in the qualitative tradition the two concepts are closely intertwined and it is not rewarding to consider them separately. Further, Svensson (1996, p. 209, 211) argues that reliability is subordinate to validity in the sense that if validity is high, so is reliability, whereas high reliability does not guarantee high validity. Svensson (1996, p. 209, 211) contends that as validity rules reliability in qualitative research, validity is the more important measure of the two, making the disposition of the study, the method of data collection and the analysis of data and results, crucial.

Considering the purpose of this study – to establish the conditions for librarian-faculty collaboration found in the literature and in Bologna documents at different levels – it is here argued that a literature study combined with document analyses will offer a veracious picture of the situation, covering many aspects of the research problem. Hence, validity is secured in the sense that the risk of systematic errors in measure is lessened. Gilje and Grimen (1992, p. 183) argue that unprejudiced understanding is impossible. According to Bergström and Boréus (2000, p. 36) validity can be improved by regarding and seeking to understand one's own pre-understanding. This study places itself within the LIS field, and the authors inevitably take a LIS perspective, something that needs to be regarded not least when performing the document analyses, and in discussing the HE literature. The authors' familiarity with the LIS field, in combination with an unfamiliarity with the HE field and its literature is also an aspect that needs to be considered, making selection and evaluation of HE literature challenging. Considering this unfamiliarity, a compilation of brief information on cited authors and sources, e.g. their professional title or the university they are affiliated to, is added, facilitating judgement of relevance and credibility (Appendix 1).

For practical and time-saving reasons there has been a division of labour such that different documents have been analysed independently by the authors. Though, in order to increase reliability all textual analyses have been scrutinized and discussed by both authors. Results from the analyses are extensively supported by quotations, facilitating

for the reader to follow lines of thought and judge reliability of arguments. Further, all translations have been thoroughly discussed, and the Swedish original text is presented to the reader in footnotes (Appendix 2).

As opposed to quantitative research where reliability depends on high intersubjectivity, i.e. a study repeated by others will give similar results, it is in qualitative research important to reflect upon the context in which the data is collected when judging reliability. It needs to be considered whether there is a "constant object" or if situational circumstances play a crucial part. In this study the objects of research are constant, as it is concerned with literature and documents.

3. Literature Review

A literature review forms the backdrop of this study, discerning how the LIS and the HE literature relate to information literacy assessment, and what conditions for collaboration can be discerned within the literature of these disciplines. Research articles providing literature reviews, such as Albitz (2007) and Wolcott *et al* (2002), have functioned as a point of departure in examining what the literature has to say in this matter. In addition, searches have been conducted in databases such as Electronic Library Information Navigator (ELIN), Educational Resources Information Center (ERIC), and Library & Information Science Abstracts (LISA). Journals of high value to this study have, amongst others, been *The Journal of Academic Librarianship* and *Reference Services Review.* Discussions in the HE community seem to be less concentrated to certain journals, and documents from ERIC document service have been valuable. Primarily the following search terms have been used, in different combinations: *information literacy, critical thinking, (outcomes) assessment, higher order thinking skills (HOTS), lifelong learning,* and *cognitive skills.*

Early in the search process it became obvious that the term IL is not used in the HE field. Whilst LIS scholars are overtly engaged in discussing IL, the term is barely mentioned within HE. For example, the search term *information literacy* returns no results in the journals *Higher Education in Europe*, *Higher Education Quarterly*, *Higher Education Perspectives, British Journal of Educational Studies*, and *Higher Education* (2008-05-20). Instead, through articles such as *The What and Who of Information Literacy and Critical Thinking in Higher Education* (Albitz 2007) and *21st Century Learning and Information Literacy* (Breivik 2005) that discuss the relationship between IL and CT, it became clear that in the HE field, similar issues are discussed using the term CT, which is not a complete equivalent to IL though. Rather, as will be shown in the concept discussion in section 3.1.4, abilities or knowledge that are in LIS considered as IL are in the HE field regarded as peripheral parts of CT, while that which HE scholars refer to as CT is in the LIS area considered peripheral parts of IL. The meanings of the two terms are objects of debate though, and depending on how the concepts are defined, larger or smaller parts of them overlap. It can also be argued that the concepts of IL and CT are somewhat similar, and that the difference between them lies in their different points of focus, i.e. the concepts encompass the same aspects, but differs in their valuing of these aspects in the sense that what is regarded as the cores of the concepts are completely different things. Considering these issues, this chapter opens with a large section on terminology matters. As previously mentioned, information on cited authors and other sources is presented in alphabetical order in Appendix 1.

3.1 Terminology

Both in the HE and in the LIS tradition IL related knowledge is, considered important. Though, different terminology is used when discussing the matter. Whereas scholars in the HE field speak of it with a background of learning theory, librarians connect them to information theory. In the HE field, IL related issues are often discussed using the term CT, a term that is not a complete equivalent to IL and hence also brings other implications and presumptions with it. In everyday debate and in control documents, the term *lifelong learning (strategies)* is often used when treating issues related to demands on the individual to manage personal and professional life in society of today, and of the future. Below, the terms IL, CT, and lifelong learning are presented, and the relationship between them is discussed.

3.1.1 The Concept of Information Literacy

The concept of IL has been debated at lengths, predominantly within the LIS tradition, and foremost by scholars in the USA, Australia and the UK (Virkus 2003). Several definitions have been presented since the term was first mentioned by Paul Zurkowski in a 1974 report to the US National Commission on Libraries and Information Science, in which a national programme for IL was proposed. The primary concern at that time was the capacity to use information technology. IL has since then been an object of academic attention as a response to the rise of the information society (Bruce 1997, p. 5, Webber & Johnston 2000, p. 381-382). Other literacies of a more specific nature have been discussed as well, such as computer, media and visual literacy, but as argued by Rader (2003, p. 27) and illustrated by Spitzer, Eisenberg & Lowe (1998, p. 29-31) these specific literacies can be said to be compartmental whereas information literacy is an inclusive term that encompasses them all. A problem with the term IL is, according to Mutch (1997, p. 378), that it is often used without being clearly defined, and even when it is defined the conceptions diverge.

A large body of definitions portray IL as a set of attributes or skills. Among them the earliest and most widespread is the definition provided by The American Library Association (ALA) in the *Final Report* of 1989, in which the importance of IL is recognized and IL is defined as "To be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information" (ALA, 1989). Drawing on ALA's report, Doyle established a definition based on a Delphi study, a method of achieving consensus on a complex problem through group communication among experts. The definition offers a list of attributes describing an information literate person as somebody who:

- recognizes that accurate and complete information is the basis for intelligent decision making
- recognizes the need for information
- formulates questions based on information needs
- identifies potential sources of information
- develops successful search strategies
- accesses sources of information including computer-based and other technologies
- evaluates information
- organizes information for practical application
- integrates new information into an existing body of knowledge
- uses information in critical thinking and problem solving

(Doyle 1992, in Doyle 1994, p. 3-4)

Other widely used definitions in a similar line of thought are *The Seven Pillars model* produced by Society of College, National and University Libraries (SCONUL 1999) and *Information Literacy Competency Standards for Higher Education*, presented by The Association of College and Research Libraries (ACRL 2000). Both are compilations of previous definitions and place emphasis on user education and library skills (Webber & Johnston 2000, p. 384).

This behaviourist view of IL has made a significant impact, but criticism has also been directed towards it. Some problematic aspects of the "list approach" to IL is mentioned by Webber and Johnston (2000), e.g. that it reduces a complex process into separate units, which leads to short-term surface learning. By doing so it fails to involve deep learning and to contextualize the task in order to transfer the knowledge into other contexts, which would prepare for living in a changeable society and adapting to continuous advances in information technology. Webber and Johnston (2000, p. 382) notice similarities in the definitions of IL in that they generally cover the stages of information need recognition, search formulation, source selection and interrogation, information evaluation and information synthesis and use.

A shift in the conception of IL was initiated by Bruce (1997) in *The Seven Faces of Information Literacy* in which a phenomenographic study was presented, challenging the dominating list approach. She dissociates herself from skills-based approaches to IL, like the behaviourist approach, and criticizes their linearity, decontextualization, the difficulty to differentiate it from general problem solving, and the inability for some elements to be present throughout the process (Bruce 1997, p. 35-38). Further she claims that most scholars tend to describe IL rather than actually defining it (Bruce 1997, p. 26). Instead Bruce adopts a relational approach to IL, in terms of varying conceptions, focusing on how IL is experienced by people (Bruce 1997, p. 16-17). By interviewing higher educators about their conceptions of IL she established that there are seven categories of conceptions:

The conceptions:	IL is seen as:
The information technology conception	using IT for information retrieval and communication
The information source conception	finding information
The information process conception	executing a process
The information control conception	controlling information
The knowledge construction conception	building up a personal knowledge base in a new area of interest
The knowledge extension conception	working with knowledge and personal perspectives adopted in such a way that novel insights are gained
The wisdom conception	using information wisely for the benefit of other

(Bruce 1997, p. 110)

The categories each describe a specific way of interacting with information (Bruce 1997, p. 116). As mentioned above, these ideas brought a shift towards an alternative view of IL. Many others have adopted this or similar views, one example is Limberg and Folkesson's (Limberg & Folkesson 2006, p. 37) phenomenographic approach to information seeking.

Tuominen, Savolainen & Talja (2005) concur with Bruce in questioning the decontextualization found in the skills-based approaches to IL, although from a constructionist viewpoint, and stress the significance of context. Their view of knowledge and information emphasizes multiple perspectives, and meaning is created in interaction between people, through dialogue (Tuominen, Savolainen & Talja 2005, p.

337). They present a definition of IL as a sociotechnical practice, in which the understanding of the interaction between knowledge formation, workplace learning, and information technologies is essential. Learners of information skills are primarily seen as members of information literate communities, and information needs and skills as situated, embedded in domain-specific tasks. Information skills cannot be learned separately once and for all and then be applied in different contexts (Tuominen, Savolainen & Talja 2005, p. 330-331, 341).

In studying Scandinavian web-based IL tutorials Sundin (2008, p. 30) identifies four approaches to IL: a source approach, a behavioural approach, a process approach and a communication approach. Among them he discerns a two-dimensional division of focus, separating focus on information from focus on the user in one dimension, and separating focus on context-dependent from context-independent user education in the other. Notwithstanding the theoretical discrepancy, the different approaches were found to coexist. Sundin, advocating a context-based approach to IL, regards the web-based IL tutorials as a way for librarians to canalize expressions, negotiations and examinations of their information seeking expertise. These four approaches, carrying different views of fundamental conceptions such as information and user, consequently have implications for user education (Sundin 2008, p. 38-40).

Criticism has been aimed not only towards the skills-based approach to IL, but also towards the concept itself. Kapitzke (2005, p. 53) holds IL to be an inadequate and exclusionary approach to learning. From her poststructuralist perspective, school libraries constitute powerful institutions, exercising micropolitical influence on the practices of learning. Libraries have falsely taken up a neutral status, a self-proclaimed impartiality that Kapitzke challenges. She claims that the IL framework with its positivist orientation contradicts recent theories of language and knowledge, and instead of contributing to equitable educational outcomes hides an exclusionary ideology (Kapitzke 2005, p. 37-38). Information and knowledge are products of their culturally specific contexts and relations of power that include and exclude those without access to that particular discourse (Kapitzke 2005, p. 49). As a solution, Kapitzke sees the notion of hyperliteracy (drawing on multiliteracies) as a way of evading exclusion, in its acknowledgement of communications media and textualities that are widely used but marginalized within educational institutions. Whereas IL approaches have focused only on language, the hyperliteracy framework also includes sound, visuals, gesture and space. The development of libraries from permanent collections of printed material towards digitalized online environments has caused a shift from the objective, positivist orientations to the benefit of impermanence and heightened subjectivity. Hence, literacies need to be regarded as context-specific social practices (Kapitzke 2005, p. 50-53).

A critical stance is also taken by Owusu-Ansah (2003, p. 225), although an entirely different one. He finds the debate on definitions of IL superfluous and argues that the concept of IL has been adequately clarified in the literature. Actually, the conceptions of IL generally converge even though it appears to be a controversial topic. He claims that the differences between Bruce's and Doyle's conceptions of IL are marginal even though Bruce went to far lengths to demonstrate the sharp contrasts. The debate on the concept obstructs academic libraries from working on the development of IL programmes. Where theory should function as guidance for the profession, the discussion undermines concrete solutions for achieving IL as the uncertainty causes confusion and frustration. Since there is a sufficient consensual core in the debate,

librarians should instead concentrate on how to draw up structure and content for a satisfactory IL programme (Owusu-Ansah 2003, p. 219-220, 226-227).

This brief review of the concept of IL has shown that it has evolved over the last thirty years surrounded by controversy. The skills-based behaviourist approaches to IL still prevails even though it is challenged by alternative views, such as the relative and the constructionist approaches. Its power of attraction might be that it easily applies to practice in the shape of a checklist. A definition's applicability is crucial when it comes to the issue of outcomes assessment, a matter that will be examined in detail further on.

3.1.2 The Concept of Critical Thinking

The fact that almost every article or book that treats the subject of CT begins with a discussion on how to define the term, indicates how difficult it is to do so. The issue is further complicated by the fact that contributions to the debate come from psychologists, philosophers, sociologists and educators, all with different perspectives and backgrounds (Hay 1987, Jones & Ratcliff 1993, Sternberg 1986).

In the 1960's, Watson and Glaser (2005, p. 7), constructors of one of the world's most used CT tests, *The Watson Glaser Thinking Appraisal*, defined CT as a complex concept consisting of

- attitudes that originate from the ability to recognize problems, and from the understanding that there is a general need to present evidence to support that which is claimed to be true.
- knowledge of what is meant by valid conclusions, abstractions and generalisations, where the value of different kinds of evidence is logically determined.
- the skills needed to use and apply these attitudes and understandings.

(Watson & Glaser 2005, p. 7. Authors' translation.[1])

Ennis (1993, p. 180) defines CT as being "reasonable reflective thinking focused on deciding what to believe or do". He goes on to say that in this process a person typically has to (interdependently) do the following things:

1. Judge the credibility of sources
2. Identify conclusions, reasons and assumptions.
3. Judge the quality of an argument, including the acceptability of its reasons, assumptions and evidence.
4. Develop and defend a position on an issue.
5. Ask appropriate clarifying questions.
6. Plan experiments and judge experimental designs.
7. Define terms in a way appropriate for the context.
8. Be open-minded
9. Try to be well-informed
10. Draw conclusions when warranted, but with caution.

(Ennis 1993, p. 180)

Halpern (2001) avoids terms such as "reasonable" and "valid conclusions" in favour for a more individual-centred definition:

> When viewed from the perspective of cognitive psychology critical thinking is the use of those skills and strategies that increase the probability of a desirable outcome, where the definition of what is desirable depends on individual goals and values.

(Halpern 2001, p. 2990)

Division-making between cognitive abilities or processes and the operationalization of these into concrete skills can be found in the literature (e.g. Facione 1990 and Elder & Paul 1996), and so Halpern also writes that

> [a] general list of skills that are useful across contexts would include understanding how cause is determined, recognizing and criticizing assumptions, analyzing means–goals relationships, and recognizing problems.
>
> (Halpern 2001, p. 2991)

The division between skills and cognitive abilities is sometimes replaced by, or used in addition to, a division between skills and disposition. In 1990, 46 scholars from different disciplines, mainly philosophers and educators, took part in a Delphi project with the goal to reach consensus on the role of CT in educational assessment and instruction, the report of which was written by Facione (1990). They agreed that CT has two dimensions; cognitive skills and affective dispositions, i.e. the good critical thinker does not only master some cognitive skills, but also have some specific personal traits (Facione 1990, p. 3, 20):

> The ideal critical thinker is habitually inquisitive, well-informed, trustful of reason, open-minded, flexible, fair-minded in evaluation, honest in facing personal biases, prudent in making judgments, willing to reconsider, clear about issues, orderly in complex matters, diligent in seeking relevant information, reasonable in the selection of criteria, focused in inquiry, and persistent in seeking results that are as precise as the subject and the circumstances of inquiry permit.
>
> (Facione 1990, p. 3)

The CT skill areas defined by the expert panel were *interpretation, analysis, evaluation, inference, explanation and self-regulation*. This view of the critical thinker as a person with both CT skills and specific personal characteristics is supported by for example Elder and Paul (1996), who write that "Critical thinking is the ability and *disposition* to improve one's thinking by systematically subjecting it to rigorous self-assessment" (italics added) and by Halpern (2001) who states that

> Critical thinking requires an attitude or disposition to engage in effortful, active, and prolonged mental effort because many of the skills of critical thinking require extended thought, which includes a concern for accuracy and attention to details.
>
> (Halpern 2001, p. 2992)

Also Ennis (1993, p. 180 and 1995, p. xviii) mentions that some specific personal dispositions are necessary in order to be a good critical thinker, although he does not stress it as much as the above mentioned authors. Others (e.g. Lee 2005 and Moore 2004) do not at all address the matter of personality when defining CT.

Information seeking is to a various extent considered part of the CT process. In *the Seventeen Consensus Dimensions of Critical Thinking in Nursing* (Scheffer & Rubenfeld 2000, in Allen, Rubenfeld & Scheffer 2004, p. 16), it is argued that information seeking, defined as "searching for evidence, facts, or knowledge by identifying relevant sources and gathering objective, subjective, historical, and current data from those sources", is one of the dimensions that constitute CT. Pawlowski and

Danielson (1998, p. 6) state that "[s]tudents must learn how to selectively access and process […] information; students must learn how to think critically", revealing a position equal to that found in much IL literature.

Elder and Paul (1996) also argue that a person cannot be deemed a critical thinker unless she uses these skills in all, or most, dimensions of life (as a professional, friend, parent etc.). This standpoint is based on the assumption that CT skills are general and can be learned and practiced irrespective of context, a view that predominates the debate (Moore 2004, p. 4. For examples see Ennis 1993, Jones & Ratcliff 1993, p. 11, Kiah 1993, p. 10 and Norris 1988, p. 128). This is contrasted by Moore (2004, p. 14, 16-17), who, drawing on findings by Candlin (1998) and Hyland (2000) about the differences between disciplinary cultures and discourses, warns that the adopting of a view of CT skills as generic may lead to "definitive and final judgements about the rightness and wrongness of propositions, about the correctness and incorrectness of solutions, and about the validity or lack thereof of ideas" (Moore 2004, p. 17). The discipline-specific view is also supported by McPeck (1990b, p. 5, 24) who argues that CT skills are impossible to separate from the context in which they are applied, and that "there are almost as many different kinds of critical thinking as there are different kinds of things to think about" (McPeck 1990a, p. 10). Also McMurray (1989, p. 8) and Vaske (1998, p. 64) agree that there are research results indicating that CT skills do not transfer from one subject matter area to another. In the report of the Delphi Project mentioned above, it is stated that CT skills as such are generic, but that the application of them sometimes requires domain-specific knowledge (Facione 1990, p. 10-11).

CT it is sometimes compared to the higher levels in classic learning taxonomy *The Taxonomy of Educational Objectives* (Bloom 1956) – analysis, synthesis and evaluation (e.g. Heywood 2000, p. 178, Barak, Ben-Chaim & Zoller 2007, p. 355, Aviles 2000, and Baker 1981, p. 328). This comparison has been the aim of criticism though; Ennis (1993) argues that the hierarchical structure in *The Taxonomy* does not apply to CT. Also French & Rhoder (1992, p. 195) criticize the use of the Bloom Taxonomy as a tool when trying to incorporate CT in curricula. Taxonomies such as Bloom's are concerned with levels of understanding, and cannot necessarily be said to correspond to a cognitive skill or process such as CT.

Most scholars seem to look upon CT as one of several skills in a set of higher order thinking skills, including for example problem-defining skills, creative thinking and/or question posing, but there are differences concerning where the borders are drawn, i.e. *which* of these other skills are part of CT, and which are not (e.g. Barak, Ben-Chaim & Zoller 2007, p. 355 and Kaasbøll 1998, p. 1, Condon & Kelly-Riley 2004, p. 59, Kiah 1993, Pawlowski & Danielson 1998, p. 15 and Facione 1990, p. 12). The concept of CT is rarely related to the library in the HE literature, D'Angelo (2001) forms one of few exceptions arguing that source evaluation instruction helps developing CT. The LIS community has not taken any active part in the CT debate, but one of the few contributions is worth noticing: *Critical Thinking and Bibliographic Instruction : the Relationship* by Bodi (1988). However, her claim that bringing bibliographic instruction into curriculum will develop the students' CT seems to have passed unnoticed by others involved in the debate (with exception D'Angelo).

Criticism has also been aimed at the concept of CT as such. Palmerton and Bushyhead (1994, p. 4) point at the strong cultural implications embedded in the concept, arguing that critical analysis and systematic thinking – two of the major dimensions of CT – are Western ideas, mirroring an Aristotelian ideal of linearity and decontextualization. Offering an alternative view of CT, they argue that a more holistic

approach that regards context, emotion and experience-based evidence as important parts of the concept, is necessary. In an American study, Pawlowski & Danielson (1998, p. 14) found that international students scored lower than domestic on the *Watson-Glaser Critical Thinking Appraisal*, something that could be interpreted as indicating that CT is connected to a specific cultural context.

In summary, two types of definitions of CT can be found in the literature; abstract descriptions of cognitive processes, and lists of valuable skills mostly related to problem-solving. One definition does not seem to exclude the other, as they appear to be useful for different reasons, in different contexts. It is not surprising that those engaged in creating CT tests need to operationalize the concept into measurable skills. When discussing different definitions it is therefore important to remember that not all definitions have the same intended areas of use.

The two conflicts visible in the literature are the one between those who view CT as a generic set of skills or abilities and those who claim it is domain-specific; and the conflict between those who focus on skills and abilities separated from a person's disposition and those who argue that some specific personal traits are necessary in order to become a critical thinker. In the latter case, it could be understood as an issue of defining the line between personality and cognitive skill. *Disposition*, *attitude* and *knowledge* sometimes seem to refer to the same thing; the cognitive foundation needed for the individual to develop CT skills and understand the purpose of them, or, in other words, the backdrop in view of which the CT skills are used. The generic/specific debate is more polarized, and will probably continue to develop and engage both sides. This is also the debate that is of most interest to educators and librarians working with IL/CT assessment.

3.1.3 The Concept of Lifelong Learning

IL and CT are terms rarely found in the documents analysed further on in this study. Instead similar issues are discussed through other words than those that are used in scholarly contexts. The relationships between these different terms must be established if correct conclusions are to be drawn.

Lifelong learning is somewhat a catchword of today. The term is generally used referring to the ever ongoing learning that has become necessary for individuals to "keep up with" and manage the continuously changing world of today; be it in aspects of work or personal and social life. The concept's general vagueness and positive sound probably contributes to its widespread use in different contexts, not least in the higher education debate. It can be found in Bologna Documents (e.g. the Prague Communiqué) as well as in other national and international documents and contexts (e.g. Swedish Government proposition "Ny värld – ny högskola" 2005, and The European Lifelong Learning Programme 2007).

The Commission of the European Communities (2003) defines lifelong learning as "all learning activity undertaken throughout life, with the aim of improving knowledge, skills and competence, within a personal, civic, social and/or employment-related perspective". Kogan (2000, p. 343) argues that the concept also includes a focus shift from provider to learner, a shift in balance from learning substance to learning process, and wider categories of students.

Drawing on Cropley (1980, p. 3-4), Tight (1998, p. 253-254) argues that the concept of lifelong learning is justified by reference to "the language of change", a

discourse he claims has been dominant since the 1980's. Further, he writes that "lifelong learning is … linked to the requirements of the economy … and the broader society" (Tight 1998, p. 253). Tight (1998, p. 253) agrees with Kogan (2000) that lifelong learning places emphasis on the individual learner, but also claims that the term has an inherent promise of "self-fulfilment". He goes on to state that lifelong learning is seen to require the involvement of non-traditional education providers and finally concludes that the lifelong learning discussion is idealistic and visionary in the sense that very little is specified about the contents and costs of different lifelong learning projects (Tight 1998, p. 254). Knapper and Cropley (2000, p. 4) confirms that much focus is put on non-traditional education providers and non-traditional learners, but argues that well-established institutions, such as universities, can play an important role in both preparing students for continuous learning and as education providers to new groups of learners. The idea of non-traditional education providers, or learning taking place in non-traditional environments, occurs in almost all official documents on lifelong learning and hence seems to be a key feature of the concept (e.g. the Bergen Communiqué of 2005 and the London Communiqué of 2007).

Sometimes the term *lifelong learning strategies* is used, referring to the knowledge or abilities needed in order to manage lifelong learning. Whereas lifelong learning is the goal, lifelong learning strategies are the means of achieving it.

3.1.4 The Concepts: Discussion

Beginning with the LIS perspective, Doyle (1992, in Doyle 1994, p. 3-4) states that an information literate person "uses information in critical thinking and problem solving", and Bruce (1997) criticizes the behaviourist approach to IL because of, inter alia, the difficulty to differentiate it from general problem solving. Moving on to HE writings, Pawlowski and Danielson (1998, p. 6) practically equals the two terms: "[s]tudents must learn how to selectively access and process […] information; students must learn how to think critically". In *Critical Thinking : A Statement of Expert Consensus for Purposes of Educational Assessment and Instruction*, the report from the Delphi Project written by Facione, it is stated that the ideal critical thinker is "diligent in seeking relevant information" (Facione 1990, p. 3). Ennis (1993, p. 180) argues that judging the credibility of sources, and asking "appropriate clarifying questions" are parts of CT.

Hence, drawing on sections 3.1.1, 3.1.2 and 3.1.3 and exemplified in the paragraph above, it is here argued that the concepts of IL and CT evidently overlap. The concept of CT can be said to be IL related, just as the concept of IL can be said to be CT related. The different foci of the two research fields contribute to the impression that the concepts are further from each other than they really are. In the IL debate the starting point is often the library, and commonly focus is laid upon information seeking even though IL is regarded a wider concept. In the CT debate on the other hand, focus is placed on logical thinking. In sum, if placing the two concepts next to each other, many of the constituents are the same, but what parts focus is placed upon differs greatly. Though, it should also be noted that there are differences, the most conspicuous being that in the HE literature one factor commonly referred to as influencing CT abilities is disposition, innate characteristics that decide the capacity for critical reflection, whereas in IL contexts such attributes are not discussed. Notwithstanding the similarities between the two concepts, they are rarely explicitly connected in the literature, Albitz (2007), Breivik (2005) and D'Angelo (2001), forming some of few exceptions.

The two different debates are in many ways parallel; there is the "list approach", as opposed to the "cognitive process approach", and there is the "generic approach" opposing the "domain-specific approach". There are similarities between the argumentation against decontextualization in the contributions by Moore (2004) and Tuominen, Savolainen & Talja (2005) to the CT and IL debate, respectively. The Delphi Study takes on a middle course in arguing that CT skills as such are generic, but that the application of them can require domain-specific knowledge. Similar ideas on IL have been brought forward within LIS, e.g. by Grafstein (2002). Both of the debates are also characterized by contributions coming from both theory and practice, i.e. both from scholars with IL or CT as their main area of interest, and from librarians or educators, respectively.

From a LIS perspective it can be argued that IL is a broader concept than CT, in the sense that it involves a greater number of aspects of information related activities. While CT deals with information *judgment* and *use,* IL also entails other areas such as information *need recognition* and information *seeking*. This view is adopted by e.g. IFLA (2005) that states that CT is part of IL, and Doyle (1992, in Doyle 1994, p. 3-4) who, claims that an information literate person "uses information in critical thinking and problem solving". Breivik (2005, p. 3) on the other hand, claims that IL is a CT skill, implying that the concept of IL is subordinate to CT. Seen from this standpoint, CT is almost made equivalent to all information handling, a superior concept that includes other aspects such as information seeking. CT is given a more abstract and overriding meaning and purpose, and there is a risk that practically anything can be said to be part of CT.

Drawing on the literature review, it is in this study argued that both IL and CT are instruments that are, in theory as well as in practice, necessary in order to manage lifelong learning, for the individual and for society. That is, IL is a lifelong learning strategy. The argument is not new, e.g. Webber and Johnston (2003) recognize the importance of IL for lifelong learning. The importance of these instruments can be illustrated by the focus shift from learning substance to learning process that, according to Kogan (2000, p. 343), the idea of lifelong learning brings with it – the ability to continue learning independently becomes more important. This view of the relationship between IL and lifelong learning is supported by IFLA (2005), stating that information literacy "lies at the core of" lifelong learning. It is here argued that learning taking place in "uncontrolled areas" – a key feature of lifelong learning according to Knapper and Cropley (2000) –, i.e. outside the traditional education providing institutions, also calls for the learner to, to a higher degree than within the institutions, find, evaluate and use information by herself. This is further supported by Tight's (1998) argument that the notion of lifelong learning brings with it an increased focus on the individual.

As will be shown in chapter 4 (Document Analysis), the local documents produced at Lund University explicitly use the term IL and justify their IL initiatives through referring back to Bologna documents on higher levels. The term IL is not be found in these higher level documents though. That is, universities claim that the Bologna Process, and changes in national legislation that are initiated by the Bologna Process, put new demands on them to implement IL and let it permeate higher education, but neither the Bologna documents nor national legislation even mention the term IL. Hence, it seems IL related issues are expressed through other terms at these levels. Considering the frequent use of the expression *lifelong learning* when discussing IL related issues in the Bologna documents, it seems the theoretical relationship between IL/CT and lifelong learning outlined above, are implicitly recognized in the
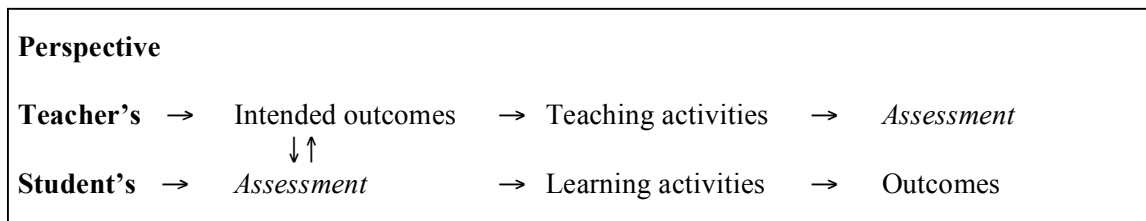
Bologna Process. In one of the analysed documents, a project report from the Faculty of Social Sciences, it is explicitly stated that IL is a prerequisite for lifelong learning (Jönsson 2006, p. 4). Instead of discussing the tools to achieve it – IL and/or CT– the Bologna Documents and also national legislation, focus on the goal – lifelong learning. Hence, it is through *lifelong learning* that IL is expressed in the Bologna Process. This is further strongly supported by Liedman (2008) who writes that "digital competence", formulated by the Commission of the European Communities (2005) as one of seven key competencies necessary for lifelong learning, is practically just another way of saying IL. Digital literacy or competence is generally regarded a narrower concept than IL, but according to Liedman (2008) the Commission of the European Communities uses it in a wider sense, as a synonym for IL. Liedman (2008) suggests that it would have been better to replace the term digital competence with IL.

3.2 Assessment

In this section a brief account of terminology and notions surrounding assessment is given. This in order to provide a background to following sections dealing with assessment of IL and CT, and to present key terms in the field.

According to many scholars in the field, the implications that assessment has on students and on the higher educational context as a whole should not be underestimated. Assessment is object of much debate, and it has for instance been stated that outcomes assessment in itself legitimates ideological structures within the university and reproduces relationships of power (e.g. Elmborg 2006 and Leathwood 2005). Attention has been directed towards the impact assessment has on what and how students learn (e.g. Biggs 2007, Bourner 2003, Brown, Bull & Pendlebury 1997, and Havnes 2004). In practice, students learn what they believe they will be tested for (Biggs 2007, p. 169). Hence, assessment tasks must reflect the intended learning outcomes of a course (Biggs 2007, p. 163). Research has also shown that an increased understanding of assessment criteria leads to better study results, but also brings with it a risk that the students develop superficial and "mechanic" learning styles, adapted to the assessment task (Norton 2004).

Biggs notes that there are many different purposes of assessment, but that the two most important reasons to assess are for *formative feedback* or for *summative grading*. Formative assessment takes place during the learning process and is diagnostic in the sense that it tells the student and the teacher how much the student has learnt so far, and how she progresses. Summative assessment takes place at the end of a course or end of a study period, and the result determines what grade will be given (Heywood 2000, p. 29). Biggs (2007, p. 164) emphasize the importance of being clear with what type of assessment is being used at every particular assessment occasion, as formative assessment aims at the giving of feedback and at a discussion between teacher and student and places focus on the weak points, where improvement is needed. It is in the student's interest to learn where she needs to improve and there is no "risk" in focusing on weaknesses. In summative assessment it is on the contrary in the student's interest to explain and cover up bad results. While the teacher sees summative assessment as something taking place at the end of a course, it is for the student a crucial factor in the beginning of a course, as it rules what she will learn. This is illustrated here by Biggs (2007):

Perspective
Teacher's → Intended outcomes → Teaching activities → *Assessment*   ↓↑   **Student's** → *Assessment* → Learning activities → Outcomes

(Biggs 2007, p. 169)

The quality of assessment is an area of research that has been somewhat neglected (Wedman, Wahlgren & Francke-Wikberg 2006, p. 22-25). Yet, there are three theoretical models useful when accounting for the quality of the assessment process; the norm-related, the aim-related, and the individual-related model. In brief summary, the norm-related model means that statistical measurements of assessment results are performed, based on the expected variation – standard deviation – between the students' strengths and weaknesses and their consequential assessment result. This variation is rendered through normal distribution. In an assessment mode where the sum of the partial scores equals the total score, it is measured how each task correlates with this total score. If the total score fails to correlate with a specific task it can be concluded that the task in question is of faulty quality. When practising the aim-related model, specific aims for the students' learning are established in advance, followed by a comparison between assessment results and theoretical statements concerning the implications of knowing and not knowing. In the individual-related model the judging is connected to the extent of an individual's improvement from one occasion to another. Measurement is performed as in the norm-related model although focus is placed on progress (Wedman, Wahlgren & Francke-Wikberg 2006, p. 22-25).

3.3 Library and Information Science Literature

The aim of this section is to explore how the discussion on assessment of IL is pursued within the LIS tradition. The amount of literature on IL assessment is modest compared to the attention that IL in general attracts. In addition, the literature on assessment in general is far more extensive than the literature specifically treating assessment of IL. A search in the database LISA (Library & Information Science Abstracts) shows that less than ten percent of the articles on IL also deal with assessment.

There seems to be a somewhat consensual stance taken to the advantages of assessment. In most cases when the topic of assessment of IL is raised it is accompanied by arguments for its importance (e.g. Cameron 2004, p. 207, Neely 2006, p. 1-3, Rockman 2002, p. 181-182, Avery 2003, p. 2-3). Avery (2003, p. 2) states that outcomes assessment of IL expands the regular notion of assessment, performed on for instance a course, as it passes being merely a method of evaluation into being a means of learning. To some extent the literature on IL assessment is warped, due to the willingness of advocates of IL to discuss assessment thereof, whilst the critical scholars criticize the concept and does not bother to linger on the issue of assessing what they do not believe in. One of them is Elmborg (2006) who advocates critical information literacy, which "involves developing a critical consciousness about information, learning to ask questions about the library's (and the academy's) role in structuring and presenting a single, knowable reality" (Elmborg 2006, p. 198). He claims that within

academia assessment is formal and ritualized, it is an excluding practice that determines who belongs and who does not. Librarians should focus on developing critical consciousness in students instead of working towards goals set by the academy, and when needed, not shy away from questioning the politics of academic exclusion (Elmborg 2006, p. 192, 197).

The great majority of the literature on the subject focuses on academic libraries and their role in teaching and assessing IL. Most common are discussions on a practical level concerning case studies of different methods of assessment. Meulemans (2002, p. 61) provides a background to the current state of assessment in academic libraries in an American context. She describes it as formed by three converging movements: the higher education assessment movement, the rise of strategic planning practices in higher education, and the development of IL itself. This convergence shaped a platform for the development of IL assessment and has influenced the context in which it is discussed and practiced today (Meulemans 2002, p. 70). The adoption of strategic planning and Total Quality Management in libraries fuelled the perception of assessment as essential, as both methods rest on assessment and evaluation. These movements, sprung from for-profit organizations, brought a shift towards prioritizing customer service and led to a change in decision-making processes from impression-based to data-based decisions. With an increase in demand for hard data to demonstrate efficacy in general came a heightened interest in assessment of library instruction and other activities related to IL education (Meulemans 2002, p. 65-66). Meulemans (2002, p. 71) concludes that although the ideas of assessment have been adopted from contexts outside the library, it is the best way to prove the value of IL to governing forces.

3.3.1 Can Information Literacy be Assessed?

Concerning the question whether or not IL can and should be assessed at all there is in the literature a preponderance of assessment proponents. Catts (2000, p. 282) advocates assessment of IL and claims that it must be assessed in a valid and reliable manner in order to become a self-evident part of the curriculum and to avoid being overlooked and discarded as something impossible to assess. Responding to sceptics such as McCrank (in Catts 2000, p. 271) that regard IL as something so relative it cannot be measured, Catts claims that it is possible to measure IL if it is done in view of a clear theoretical model of the concept, and if both education and assessment of IL is integrated in the mainstream of higher education instead of being sidetracked. IL must be assessed in some way in order to become accepted as a valid outcome of higher education. IL criteria should be included in grading policies, as assessment of IL education is necessary both as a quality measure directed to the labour market and the government, and as a way of attracting attention to the issue of IL and its significance (Catts 2000 p. 271-272, 274). Webber and Johnston (2003) also stress the importance of assessment as it in the context of formal education grants credibility and indicates importance, and consequently assessment improves the status of IL as a subject. In accordance with Bruce, they adopt a holistic view of IL as being useful for lifelong learning and that it therefore must be adaptable to change. Their definition of IL implies a complexity that calls for more than one type of assessment (Webber and Johnston 2003, p. 101-102). Their approach also implies a context, preferably the "information literate university" where all agents are information literate and have the ability to predict "opportunity for knowledge creation and wisdom". There is much work to be done before the vision of

the information literate university can become reality. Webber and Johnston identifies its barriers, among them librarians' lack of status, the fact that IL is not yet embedded in all undergraduate and postgraduate curricula, and the focus on library skills, which they claim lead to a lack of appropriate assessment. A decreased library focus could also counteract the widespread idea that IL equals a set of lower-order skills (Webber & Johnston 2003, p. 102-104).

While Webber and Johnston (2003) clearly state that in discussing assessment of IL they refer to assessment of student learning, Avery (2003, p. 3-4) emphasizes the aspect of documenting the effects of IL programmes, albeit through student learning outcomes. The academic library needs to demonstrate a correlation between instruction and improvement of research skills, as they are accountable to administrators and faculty (Avery 2003, p. 2-3). It is not only an increase in students' IL level that is of interest, but also justifying and confirming the librarians' efforts in IL instruction. Here a behaviouristic approach is evidently present, as the ACRL Information Literacy Standards for Higher Education are embraced and these skills are assumed to be transferable to other contexts (Avery 2003, p. 1-3). According to Catts (2000, p. 273) it is essential that in assessment of IL focus is placed on the individual student, as the success of IL programmes depend on learning outcomes achieved by individual students, achievements that require some kind of reward.

3.3.2 Methods of Assessing Information Literacy

Regarding the question of how to assess IL, there is first the issue of whether assessment of IL should be conducted separately or integrated with assessment of subject knowledge, and then the issue of different types of assessment and specific methods of evaluation. While the latter has been generously discussed, the former has not been given much attention in the literature. Opinions of whether to integrate assessment or not is closely related to one's view of the concept and ideas of how to teach it. Although not referring to assessment in particular, Mutch (1997, p. 385) claims that IL needs to be taught as embedded in subject-based thought. He rejects the idea of IL being a separate field of knowledge, as he disapproves of a tendency in the literature to regard information as a thing, and of a flawed understanding of the close-knit relationship between information and knowledge (Mutch, 1997, p. 381). Instead he argues for a view of information as a relationship, and for a user-centred conception (Mutch, 1997, p. 378). The concept of information needs to be considered and incorporated in curricula, something that might be hindered by obstacles such as existing artificial discipline boundaries and what he calls an "information transmission" approach to learning (Mutch, 1997, p. 386).

Grafstein (2002) positions herself in line with this as her approach to the concept of IL implies that it is integrally related to discipline-specific knowledge and research, and that a holistic approach is necessary. She objects to the fact that librarians engaged in IL research often study IL as an isolated phenomenon, decontextualized from any specific discipline. In general the literature on IL puts emphasis on generic skills concerning the general process of retrieving and evaluating information, while neglecting more specific skills needed to obtain knowledge in a particular subject area (Grafstein 2002, p. 197, 202). The skills involved in the information seeking process work as a tool for turning information into knowledge and therefore these skills cannot be completely isolated from subject-based knowledge (Grafstein 2002, p. 200).

Grafstein (2002, p. 200-202) believes however that information retrieval is indeed a skill, and that its features are transferable across disciplines and applications. Being information literate about something requires a set of generic skills that facilitate achievement of subject-specific knowledge. Students must possess these skills to be information literate, and they are applicable across disciplines as well as to everyday life information needs.

McCarthy and Heald (2003, p. 216-219) report on an assessment project studying the impact of integrated IL instruction, comparing the learning outcomes of a course-integrated instruction programme to those of a separate credit bearing IL course. The method of assessment was written tests before and after IL training sessions taught by librarians. They found that the participants of the credit course improved their skills dramatically and performed much better than those attending the course-integrated programme. Although, it should be added that the skills measured demonstrate a narrow definition of IL, confined to knowledge of library resources and services.

Concerning how to make a wise choice among the different types of assessment, Webber and Johnston (2003, p. 104) claim that teachers need to be course designers and create courses that support student learning. They identify four factors and three modes that are presented as essential elements of an assessment framework. The factors deal with issues of purpose, conditions, practical forms and approach to learning, while the three modes are expert, self, and peer assessment mode (Webber & Johnston 2003, p. 106-108). Ideally, Webber and Johnston would like to see that assessment of IL includes diagnostic elements, formative feedback, and summative feedback, and that assessment should be varied and suited to the area of IL in question. They find a combination of expert, self and peer assessment that support reflection and critical awareness desirable (Webber & Johnston 2003, p. 109). This is in agreement with Avery (2003, p. 4) who states that well-done assessment assumes multiple methods and purposes, e.g. formative, summative, short-term and longitudinal. In Catts's (2000) opinion, diagnostic assessment is time-saving for both student and institution, because it identifies what IL skills the students have to begin with. Further, formative assessment like frequent feedback and face-to-face instruction is best conducted unstructured to leave room for creativity, and not counted in final assessment as that inhibits creative risk-taking. Formative tasks should not be used for final assessment as it is likely to decrease its reliability, but can be made a prerequisite for a final grade. Assessment of IL does not require separate methods as the methods of assessment used in subject discipline domains are adequate, and by employing them additional costs are avoided (Catts 2000, pp. 273-274).

As declared previously, the literature abounds in reports of experiences from specific methods of assessment. Nevertheless, Neely and Ferguson (2006, p. 153) maintain that only a minority of the numerous IL assessment instruments developed for under-graduate students are embodied in the published literature. According to Webber and Johnston (2003, p. 107) the methods most commonly accounted for are questionnaires, worksheets and online tutorials (e.g. Sullivan 2004, Ondrusek *et al* 2005 and Noe & Bishop 2005), short tests and bibliographies (e.g. Knight 2006). These mainly focus on lower-order skills, such as locating library resources, except for compilation of bibliographies where higher order learning outcomes can be assessed if followed by reflective commentary on how it was carried out. Other frequently occurring methods are assessment by research portfolio (e.g. Sharma 2007, Chapman, Pettway & White 2001) and reflective journals or essays on the research process (e.g. McGuinness & Brien 2007, Nutefall 2004). Macklin (2001, p. 311) provides an account

of integrating IL instruction into a subject-specific context by using problem-based learning. The ACRL Information Literacy Competency Standards for Higher Education are often used as a guide for assessing IL skills (e.g. Emmett & Emde 2007 and Neely & Ferguson 2006). A standardized IL test was developed by Project SAILS (Standardized Assessment of Information Literacy Skills) initiated by American Kent State University. The test, containing multiple-choice questions, is based on the ACRL standards and is intended to be universally applicable (Project SAILS' website 2008). Nimon (2001) is critical to using the standards for measuring IL as they are too restrictive. They are only useful if all involved actors agree on that the task is limited to performing a proficient literature search.

As previously mentioned, Webber and Johnston (2003, p. 107, 109) point to the necessity of using a variety of methods in the recording of assessment, such as transcripts of test results, portfolios of work, or learning diaries, in order to ensure its relevance to the precise area of IL being learnt and linking it to real-world applications. The advantages of combining various types of assessment are also expressed by Gratch-Lindauer (2003, p. 26, 36), stating that learning is a multidimensional process that cannot be assessed by a single method. Its cognitive, behavioural and affective dimensions can be captured only by using several types of methods or instruments. The methods should be chosen to suit the learning outcomes at aim. Many assessment instruments require a corresponding tool for measuring the performance by quantifying it, e.g. using rubrics to assess an annotated bibliography (Gratch-Lindauer 2003, p. 26-27, 31).

3.3.3 Division of Responsibility for Information Literacy Assessment

One of the more thoroughly discussed aspects of IL assessment and instruction is the question concerning the division of responsibility between librarians and teachers. The great majority appear to be in favour of a strengthened collaboration between librarians and teaching faculty. Sonntag & Meulemans (2003, p. 16, 20) stress the importance of a shared assessment plan for reaching their shared goal, and that librarians need to concentrate less on whether their efforts are properly acknowledged and instead shift focus to the goal of making students information literate. Implementation of assessment projects should not be hindered by the difficulty to establish whether students' improved IL knowledge is a direct effect of librarians IL instruction or from the course in itself. They present formal assessment in collaboration with teaching faculty as an answer to librarians' concern that their work in educating students is not recognized. Scales, Matthews and Johnson (2005, p. 234) admit that collaboration can be straining and confusing, but worthwhile since when it does work it develops productive synergy and goals are met. Previously librarians and faculty have collaborated informally and on an individual level, but as IL is ascribed an increasing importance, IL programmes turn to a formal sharing of IL goals. This shift forces librarians to rethink their cooperation with faculty and poses new demands on these relationships (Scales, Matthews & Johnson 2005, p. 229).

Given that the concept of IL is complex and difficult to define, and thereby difficult to measure, Nimon (2001) concludes that it can be perceived differently depending on the context. Teaching faculty may emphasize other aspects than librarians, so the assessment process needs to reflect the goals of all parts engaged in it. IL assessment needs to be context-specific to be meaningful, and it should be done in

collaboration with faculty for best results, as a compound of input from both parties with their respective demands will ensure the most complete assessment. Grafstein's (2002, p. 197, 201) approach to IL, as mainly integrated in subject knowledge although with some generic features, is the basis for her view on the ideal division of responsibility. She believes that the professions should have complementary but distinct roles in the process. Whereas teaching faculty possess discipline-specific skills, librarians contribute with generic information skills, skills that they are uniquely qualified to teach.

When planning for assessment, Jenkins (2005) finds that the decision of what to measure is of fundamental importance. Because of the time-consuming nature of assessment it is essential to focus on the perceived need. In order to improve the assessment process Jenkins would ideally like to see that faculty participate in it to a greater extent, as both professions need to contribute with their values. The librarians' role is to teach students how to locate and evaluate information while faculty teach them how to use it effectively and merge that knowledge into writings and projects, though librarians might contribute by e.g. helping with citing sources. Jenkins (2005, p. 74-78) claims that there is a common aim in making students information literate, the value of the knowledge referred to is recognized by both professions although they use different terminology describing it, so they must continue to find new ways of collaborating to achieve that goal.

According to Curzon (2004, p. 29-30) the circumstances are perfect for a successful partnership, as the skills and knowledge of librarians and teachers respectively are complementary and together form good breeding ground for successful IL programmes. Still, there is an obstacle in the varying level of interest. Librarians are in general more prone to wanting contact and partnership with faculty than vice versa. Curzon (2004, p. 30-44) presents four strategies for creating a successful faculty-librarian collaboration to produce information literate students. These are: identifying the partners, i.e. finding out who would be best to work with considering that faculty have different roles and areas of interest; creating awareness, librarians need to continuously market IL to faculty by demonstrating its meaning and importance; avoiding partnership pitfalls, IL programmes should be developed together with faculty to avoid that librarians claim ownership to IL, and IL programmes should not be constricted to the library but be made a part of the overall educational strategy of the university; and finally using the partnership to teach IL. Nine models for teaching IL are offered, ranging from teaching a separate IL course to supporting faculty in their teaching.

3.3.4 Summary

In conclusion, compared to the debate on the concept of IL there is little conflict concerning assessment thereof. Thoughts on assessment of IL are closely related to the definition of IL that one adopts. To some extent this explains the lack of disagreement. Those in favour of IL programmes will be inclined to dig further into the details and practical implications of it, whereas the critics of the concept would direct their interest elsewhere. Opinions on whether IL should be assessed separately or integrated with a subject specific task are also connected to the view of IL, although there seems to be consensus on the advantages of using multiple methods.

There is a considerable amount of literature on IL assessment, although not at all as extensive as the literature on the concept of IL or on assessment in general. It is dominated by the academic library's function and responsibility in the assessment process. Reports on a practical level offering experiences and recommendations constitute a sizeable part of it.

In general IL assessment is regarded as necessary and constructive. It improves the status of IL as a subject, it can be helpful for students' learning and academic achievements, and it can demonstrate a correlation between library efforts and improvement of research skills. Not least the shift from impression-based decisions to data-based decisions brought by the strategic planning movement's demand for data to prove efficacy has increased the necessity of assessment, and it facilitates communicating the importance of IL to agents outside the library.

The great majority appears to be in favour of expanding and strengthening the collaboration between librarians and faculty in order to improve teaching and assessment of IL. Many stop at establishing this as desirable, while those who propose a way of realizing it offer practical solutions to a more productive partnership. Scholars such as Webber & Johnston (2003) that reject assessment methods that focus on library skills and hence reinforces the view of IL as lower-order skills, and call for a more holistic approach in designing assessment of IL, open the door to a partnership with faculty and maybe in extension also to the HE discipline.

3.4 Higher Education Literature

In this section the attitudes towards CT assessment in the HE literature will be explored. As the term IL is not used in the HE field, this study explores the field's relation to IL through looking at the related term CT. Searches in Swedish national library database LIBRIS and the databases ERIC and ELIN (Electronic Library Information Navigator) show that approximately ten to fifteen percent of the literature on CT also involves the aspect of assessment. On basis of the literature search conducted within the scope of this study, it seems that the CT assessment debate has somewhat faded since its most vivid period in the 1980's and 1990's. It is possible that the CT assessment debate has partly been absorbed into the co-existing debate on assessment in general, in which another terminology is used. When similar issues – using information in a correct and sophisticated way, drawing well-informed conclusions etc. – are treated in general assessment discussion, the term CT is often left out, and instead the higher levels in Bloom's Taxonomy (*application*, *analysis*, *synthesis* and *evaluation*) or some other learning taxonomy, such as the SOLO taxonomy, are used (e.g. Anderson & Krathwohl 2001, Trowald 1997, p. 12, Heywood 2000). These concepts are not necessarily equivalent to CT, and the comparison has been criticized by e.g. Ennis (1993) and French and Rhoder (1992, p. 195). The terms *higher order thinking skills* or *higher level thinking skills* can also be found, being closer in definition to CT than terms describing levels of understanding.

In the literature dealing with assessment in general, it is stressed that assessment should, to a high degree, test not only the students' ability to remember facts, but instead demand more complex activities, i.e. demand that students *use* the information as well. The term CT is in general not used in these contexts though, maybe because the term itself has been so debated and that focus hence would move to definition discussions, or possibly because many educators have adopted a view of CT as

corresponding to higher levels of understanding and learning as presented in classic education literature, such as Bloom's Taxonomy or the SOLO taxonomy.

Many contributions to the CT assessment debate come from American scholars, taking their starting point in a situation that in one important aspect differs greatly from the European tradition – it is in the USA common with separate tests for assessing CT, usually in the form of a multiple-choice test (Heywood 2000, p. 181). Some of these tests, such as the *Watson-Glaser Critical Thinking Appraisal* (created by G. Watson & E. M. Glaser) and the *California Critical Thinking Skills Test* (created by P. Facione), claim to cover many or all aspects of CT, whilst others, such as the *Cornell Class Reasoning Test* (by R. Ennis *et al*) and the *Test on Appraising Observations* (created by S. P. Norris & R. King) cover just one or two. Few, if any, universities in Sweden use such tests, and the test form as such – multiple-choice tests – is not common in Swedish higher education. Albeit perspectives that originate in the "multiple-choice tradition" are not directly transferable or relevant to Swedish conditions, they will still be accounted for as they dominate the debate.

There is consensus that valid and reliable assessment of CT demands a clear and operationable definition of the concept (e.g. Ennis 1993, p. 179, Facione 1990, p. 5, Vaske 1998, p. 9-10, McMurray 1989, p. 2). Considering the drawn out debate accounted for in the previous chapter, this has led to extensive discussions on definition in every article presenting views on assessment of CT, and validity – which is one of the most important aspects in all assessment – has been debated at lengths. French and Rhoder (1992, p. 217) state that validity is one of the major concerns of CT assessment. Cook *et al* (1996, p. 14) claim that performance assessment has the highest validity, but that this kind of assessment is expensive and time-consuming and hence that "high test validity equals low test feasibility". Ennis (1993, p. 181), himself creator of a multiple-choice test for assessing CT, *the Cornell Critical Thinking Test* (that does require the student to give a short written justification or explanation to the answer given though), states that multiple-choice tests only can cover a few aspects of CT at a time, and that they hence have low validity if claimed to test all aspects of CT. Sternberg (1986, p. 21) warns that many CT tests have low validity as they are "verbally loaded" and that they therefore test rather for verbal intelligence than for CT.

In addition to discussing validity and reliability, Facione (1990, p. 32) address the aspect of fairness, stating that it is most important that the assessment instrument does not favour or disfavour anyone on basis of reading ability, differences in cultural assumptions, experience related to gender or age etc. In a study on American students Pawlowski and Danielson (1998) found that the international students scored lower than the domestic, indicating that the socio-cultural aspect of the assessment method needs to be held in mind.

Some scholars argue that both summative and formative assessment of CT be used (e.g. Blattner & Frazier 2002, p. 48). It is interesting to note that McMahon (1999) argues that formative assessment in itself encourages CT. Ennis (1993, p. 180) notes that there can be many different purposes for assessing CT, such as diagnosing the students' present level of CT, giving students feedback about their progress in CT, motivating students to be better at CT, evaluating CT instruction efforts, helping in education admission processes, providing results in order to hold schools responsible for the prowess they have in teaching CT, and doing research about CT instructional issues. Ennis goes on to conclude that no one assessment procedure fits all purposes and hence argues that not only the decided upon definition of CT, but also the purpose of assessment should be taken into account when discussing suitable ways to assess CT.

Most scholars active in a specific subject field that is not education, philosophy or something else that makes CT their main area of interest, that have taken part in the discussion about specific CT tests seem to be of the opinion that CT should be tested with strong connection to the subject that the students study (e.g. Allen, Rubenfeld & Scheffer 2004, Aviles 2000, Wolcott *et al* 2002, p. 93, Castle 2006, p. 93). Notwithstanding the great amount of general-content-based tests that have been developed in the USA, most CT researchers support this view, and according to Jones and Ratcliff (1993, p. 11) there is general agreement that "familiarity with the subject matter plays an important role in the student's performance on thinking tasks in that area". McMurray, Thompson and Beisenherz (1989, p. 8) conclude from their study on biology students that it seems CT is best assessed through subject-specific tests, and Vaske (1998, p. 64) reports that after a thorough literature review she recommends subject-specific testing. Spicer and Hanks (1995, p. 8) emphasize the importance of a meaningful context in CT assessment. There seems to be no conflict between viewing CT as a generic, transferable skill and advocating subject-specific testing, even Ennis (1993, p. 182) is positive towards subject-specific CT assessment, i.e. test methods that primarily assess CT in a subject matter area, being used side by side with general-content-based tests. CT instruction is not a concern of this literature review, but it is worth mentioning that Ennis (1993, p. 182) argues that general-content-based tests can be used no matter if CT instruction has been embedded in subject teaching or given as a separate course, in line with his view of CT skills as non-generic and transferable from one subject area to another.

It is in the subject-specific assessment that the CT assessment debate and the general assessment debate meet. The general assessment discussion always has as its starting point that there is subject matter knowledge to assess. The question is how this is done in the best way. There seems to be consensus that it is most often better, although less feasible, to go beyond recalling and recognizing, and aim at assessing the ability to analyse, apply or in some other way *use* the information collected (e.g. Biggs 2007, p. 163ff, Anderson & Krathwohl 2001, Brown & Knight 1994, p. 32). Without entering the discussion on how to define knowledge, it could be concluded that those active in the assessment field want assessment to focus on knowledge received, not information recalled. Anderson and Krathwohl (2001, p. 312) writes that "[i]n contrast with understanding … critical thinking … tend to cut across rows, columns, and cells of the Taxonomy Table." Based on this they argue that CT is automatically assessed when other abilities, such as the ability to analyse, is assessed (Anderson & Krathwohl 2001, p. 311). Further on, Aviles (2000) claims that CT instruction and assessment is effectively done with help of the Bloom Taxonomy.

Critical thinking is by definition a process, and it is a view shared by many that the assessment thereof should focus on the quality or nature of that process, rather than on the end product (e.g. French & Rhoder 1992, p. 217, Facione 1990, p. 30, Vaske 1998, p. 64). Norris (1988) writes that

> Other factors to consider in evaluating inductive inference ability are the ways in which students' background knowledge of a problem and the assumptions they make influence the conclusions reached. If a subject possesses different background knowledge or makes assumptions different from those of the evaluator, then that subject may possibly arrive at different conclusions. If the evaluator examines only those conclusions in making an assessment of inference ability, then the subject may possibly be penalized, not because of a lack of inference ability, but because of the failure to have the same background knowledge or to make the same assumptions as the evaluator.
>
> (Norris 1988, p. 132)

Facione (1990) reports from the Delphi Project that there are four ways to assess CT:

> One way is to observe a person over time performing those activities, processes or procedures generally regarded as presupposing that skill for proper execution. One then makes judgment regarding the degree to which the person possesses the general skill in question. A second way is to compare the outcomes (if any) that result from executing a given skill against some set of criteria. A third way is to query persons and receive their descriptions on the procedures and judgments they are using as they exercise that skill, would use if they were to perform that skill, or did use when they performed that skill. A fourth way is to compare the outcomes (if any) that result from performing another task against some set of criteria, where the performance of that other task has been shown to correlate strongly with exercising the skill of interest. However, that such correlations exist between any other task and CT, or any of its sub-skills, has yet to be established in the research literature.
>
> (Facione 1990, p. 28)

How this is best done in practice is object of extensive discussions. The practical methods of assessment are not the focus of this literature review, but the issue will be briefly discussed below.

3.4.1 Methods of Assessing Critical Thinking

Facione (1990, p. 30) writes in the Delphi Study report that CT assessment "must not simply reward arriving at the correct answer. They must, however recognize achieving correct answers by way of good CT". It may seem that this is impossible to combine with multiple-choice tests, but one of the most widespread CT tests in the USA, the multiple-choice test *California Critical Thinking Skills Test*, is based on this report (Jones & Ratcliffe 1993, p. 8). Ennis (1993, p. 181), himself creator of such tests, argues that multiple-choice tests cannot cover all aspects of CT. Further, he claims that some aspects of CT, such as open-mindedness, cannot be assessed by any existing multiple-choice test at all. For comprehensive assessment, he claims, open-ended assessment techniques are necessary (Ennis is also co-author of the *Ennis-Wier Critical Thinking Essay Test*) (Ennis 1993, p. 182). One version of this could be the "semi-multiple-choice tests", in which a short written justification is required in addition to the selected option. This also meets the demands for increased focus on the process of CT, not just the final product.

Despite the many multiple-choice tests that exist at least in the USA, other types of assessment, i.e. open-ended and performance-based testing, have many proponents besides Robert Ennis. Norris (1988, p. 135) states that for really satisfying assessment of CT, methods such as observations, essays and oral one-to-one testing is necessary. Allen, Rubenfeld, & Scheffer (2004) elaborate the idea of several and regularly performed short writing assignments. Also Blattner and Frazier (2002, p. 48) agree that multiple-choice tests are not suitable for all purposes one may have to assess CT, and argue that assessing CT through essay writing provides the evaluator with the information needed no matter the purpose.

Kiah (1993, p. 7, 10) argues that the CT process has six components: identifying a problem, stating the problem, interpreting facts which must be known to solve the problem, proposing a possible solution to the problem, developing an applicable

solution, and stating how the solution can be used to solve similar problems. These steps are elaborated in a model of the process and through interviewing persons using their CT skills, Kiah claims, these steps are made visible and can hence be evaluated.

There is an abundance of methods for CT assessment available, and the one thing everyone seems to agree on is that good, reliable and valid CT assessment requires multiple testing. The use of several different methods is considered necessary in order to cover all aspects of CT (e.g. Cook *et al* 1996, Ennis 1993, McMillan 1987, p. 15, Vaske 1998, p. 64, Spicer & Hanks 1995, Aviles 2000).

Allen, Rubenfeld and Scheffer (2004) mention that the faculty members evaluating the results of the assessment method in their study have gone through a one day education, other than this assessing CT is presumed to be something that all faculty is capable of. Nowhere in the literature studied is it mentioned or proposed that librarians' competence may be useful in the assessment of CT.

3.4.2 Summary

In summary, the discussion on CT assessment is coloured by the difficulties in defining the concept, an issue addressed in almost all contributions to the debate. Concept confusion brings a risk for a shattered discussion, but the debate is clear and easy to follow. Based on this literature review it could be argued that in the general assessment literature, CT is often regarded as corresponding to or being part of higher levels of understanding and hence should be assessed continuously, integrated with regular subject matter assessment. Faculty participating in the CT assessment discussion agree that CT assessment should have strong subject matter connection. Also researchers with CT as their main area of interest are in general positive towards subject-specific testing. There also seems to be consensus that no one assessment method can cover all aspects of CT, and that multiple testing is required. Unexpectedly, CT is almost always by scholars with CT as their main object of study regarded as something that should be assessed separate from regular assessment, most often with subject matter connection though.

3.5 Literature Review: Discussion

In this section the findings of the review of the LIS and HE literatures will be compared, and the possibilities of finding common ground for a fruitful librarian-faculty partnership will be explored. The discussions pursued within LIS and HE share certain features, such as concerns with subject matter connection and issues of validity and reliability, and extensive discussions on assessment methods in practice. The one big difference is the attitudes towards the relationship between the two professions. Whilst the LIS community is devoted to vivid discussions on the topic in which development of collaboration often is expressed as desirable, it is a non-issue within the HE field. This is probably due to CT not being equivalent to IL and the relationship between the concepts not being acknowledged. When no connection is made between the concepts, a connection to the library or librarians is a far reach.

It is evident from the discussions on the IL and CT definitions accounted for above, that while IL covers the entire process of finding, judging and using information

and commonly places focus on information seeking, the concept of CT is in general limited to judgement and usage, treating information seeking as a peripheral aspect. Also the opposite applies, the aspects of IL related knowledge held to be core elements in CT are regarded as peripheral within LIS. It appears that although the concepts are closely related, the overlapping takes place in the periphery of both concepts. These different foci extend the distance between the two related concepts, and can in continuation be an impediment to the communication and collaboration between librarians and faculty.

Within LIS there seems to be consensus regarding the advantages of assessment of IL. When the issue of assessment is raised it is often together with accounts of its importance. It is held to be a profitable way to attract attention to the importance of IL, to improve its status, and to market it to governing forces. A similar agreement can be discerned in the CT debate within the HE field, although implicit. The apparent need to contend the importance of assessment evident in the LIS literature is not at all present in HE writings. This difference might be explained by the fact that assessment theory is a key component in HE and hence its importance self-evident, whereas assessment is in LIS a foreign element adopted from another discipline and not as central as it is in HE.

A disputed area in both disciplines is whether IL/CT assessment should be performed separately or integrated with subject matter assessment. In the CT assessment debate there is principally consensus that it is best done with strong connection to subject matter, despite the fact that most scholars see CT skills as general and transferable between subjects, and a large number of general-content-based CT tests are in use. There are different opinions on whether the CT assessment should be integrated with regular, continuous, assessment, or if it should be performed separately but through tests with subject matter connection. Within LIS agreement is not as strong in the IL debate, seemingly due to the fact that the issue has received less attention. In relation to the attention that the concept of IL has been given, few scholars have explicitly addressed the issue of assessing it. However, considering the different conceptions of the notion of IL itself, and the varying views on instruction, it can be concluded that the approach that advocates the significance of context and the one that does not, are more or less equally present in the literature. Still, it could be argued that there recently has developed a tendency towards favouring a subject-specific approach.

In all assessment, validity and reliability are dependent on a clear definition, and these matters are frequently discussed in the CT and IL assessment debate. One aspect that there seems to be consensus on across the disciplinary boundaries is that in assessing complex and wide-ranging phenomena such as IL and CT, it is also necessary to use multiple and varying test methods in order to cover all aspects. This is to ensure that all that said to be tested is really tested, and in that way gain high validity. This is applicable on both the theoretical level of assessment method (e.g. formative or summative) and on a more practical level of test types (e.g. multiple-choice tests or oral testing). As outlined in section 3.2, there are three widespread models for measuring quality of assessment: the norm-related, the aim-related, and the individual-related model. In this study it is argued that a further use of these models or of other relevant aspects of assessment theory would gain the IL/CT assessment debate, in the sense that it can provide theoretical steadiness to a debate that is dominated by practical examples.

In the LIS community, increased collaboration with faculty in IL assessment is often expressed as desirable. Division of responsibility of instruction and assessment has been the object of much attention, and while some stop at describing status quo and articulating an ideal situation, others suggest practical solutions for improvement. One

obstacle to this can be the discordant approaches to IL. The practical solution to the division of responsibility offered by Grafstein (2002) is based on her approach to IL as partly generic and partly context-specific, meaning that librarians contribute with generic information skills as a complement to teaching faculty's discipline-specific skills. This seems to be a widely adopted model and is supported by other scholars, e.g. Jenkins (2005) who also stress the importance of collaboration, claiming that the two professions share a common aim in making students information literate, as both recognize its value although they use different terminology to describe it. This may seem to be a reasonable solution but it presupposes this particular approach to IL, and is not applicable to a conception of IL as completely context-bound. Another liable problem is the fact that in the HE literature, the question of collaboration with librarians in CT assessment is altogether ignored. Such a discrepancy between the theoretical traditions, while the desire for partnership is ubiquitous in the LIS community it is not at all expressed by HE scholars, can have a crucial negative impact on the conditions for collaboration between librarians and faculty as they carry diverse expectations.

Based on the literature review conducted in this study, it can be concluded that faculty's lack of interest in engaging librarians in CT assessment is due to the concept of CT being narrower than IL, focusing on the judgment and usage of information, and placing less emphasis on the one aspect of information related activities traditionally associated with the library, namely information seeking. A revised view of what factors contribute to the development of CT, and how CT relates to information use in a wider context is needed, and could be achieved if the similarities between theory surrounding IL and CT were noticed. In addition, in the LIS discussion on IL, focus is often placed on the library, indicating that it is an issue primarily concerning librarians and hence closing the door to cross-profession cooperation. A reduced focus on the library to further broaden the concept of IL is therefore desirable, and would, as contended by Webber and Johnston (2003), among other factors, facilitate appropriate assessment. A decreased library focus could also counteract the widespread idea that IL equals a set of lower-order skills. If these two alterations could be made, it would eliminate some obstacles to communication, and an arena for productive collaboration could become reality. This tendency is to some extent discernable in the LIS literature, predominantly in favour of a strengthened partnership, as the scholars advocating a holistic approach to IL are already heading in that direction. Ideally, efforts would be made in LIS and HE theory to facilitate the partnership in practice. Perhaps not only by suggestions of practical measures for improvement, but also by working out a terminology and a set of conceptions that could be understood and used collectively by librarians and faculty alike. IL and CT are aspects of higher education regarded as important by librarians and teaching faculty respectively, and if the similarities between the concepts were recognized, it is likely that both parties would see the advantages of collaboration.

The conclusions extracted from this chapter form the backdrop for the textual analysis of documents belonging to or related to the Bologna Process presented in the following chapter. Drawing on the findings of the literature review, the following assumptions about IL and CT are made in the document analyses: The concepts of IL and CT overlap. IL places focus on the process surrounding information finding, i.e. information need recognition, information seeking – both in terms of search technique and acquaintance with new technology –, information evaluating – based on both source type and source content –, and on the merging of new information into an existing base of knowledge. CT is primarily concerned with evaluation of information based on source content, and with drawing conclusions based on the results of this evaluation. CT

emphasizes the logical thinking dimension, something that is not stressed within IL. Problem-solving is often the goal or purpose of critical thinking.

4. Document Analysis

The purpose of the document analysis is to, from a LIS perspective, explore the relationship between the different levels of documents in aspects of terminology use and attitudes towards the concepts. The school of thought accepted within the LIS and HE traditions, colours, limits, and directs the two professions' perception of these documents, and settles what chances there are of finding common ground. This study concentrates on assessment of IL, as a tangible context through which the view of IL expressed in the Bologna documents can be studied. In practice this is done through identification of what is expressed of IL related knowledge and assessment thereof, and in what contexts these expressions occur.

The point of departure is the results from the literature review, in short that the conditions for a successful partnership between librarians and teaching faculty in IL assessment leave much to wish for. Although the two professions possess complementary competencies that should make way for a thriving collaboration there are some problems to take into consideration. The main discrepancies are that the theoretical traditions focus on different but related concepts, that there is discordant perceptions of these concepts within each tradition, and that the desire for partnership is ubiquitous in the LIS community, while it is altogether ignored in the HE literature. There are similarities between the IL and the CT assessment debate in the sense that the complexity of the concepts are regarded as demanding multiple assessment.

The Bologna Declaration and other Bologna documents produced at European level are themselves not legally binding, but have led to changes in national legislation. In addition, in the practical implementation of the guidelines documents are produced at local level. In order to fully explore the implications of the Bologna Process on the IL assessment situation in Sweden, documents on both European, national and departmental level are analysed. All of these documents are not "official" Bologna documents on European level but they are initiated by, or contain alterations that are initiated by, the Bologna Process. The relationship between the documents is progressive, starting with the changes in documents on the national legislation level being direct consequences of the Bologna documents, and documents on the university level being influenced by both national and Bologna documents. Because of this progressiveness, and the recurrent references to higher levels found in the documents, they are presented top-down starting at the Bologna level.

A majority of the documents are originally written in English, some are official translations from Swedish to English, and from the three documents that are in Swedish cited passages have been extracted and translated by the authors of this study. The Swedish original formulations are placed in notes in Appendix 2.

4.1 The Bologna Process

The purpose of the Bologna Process is to increase collaboration in European higher education, and create a European higher education area. The Bologna Process has been further described in chapter 1.1. The Bologna documents are themselves not legally binding, but have caused legislative changes in many of the participating countries' educational systems, amongst them Sweden's (Internationella Programkontoret's website 2008). At the outset, it is essential to clarify that none of the Bologna documents speak of IL explicitly. The term is not mentioned at all, and consequently neither is IL assessment. As has been shown in section 3.1.4 though, IL related issues are discussed through the concept of lifelong learning, making a fruitful analysis possible.

4.1.1 Document Analysis: The Bologna Declaration of 1999

At close examination of The Bologna Declaration's six pages, the expression of some of the components that are often associated with or covered by IL can be found in the text. Mainly these occurrences revolve around the topic of lifelong learning, a concept that is referred to more or less overtly at several occasions, primarily in the initial part that draws up a background and establishes the purpose of the joint effort. The view of lifelong learning as important is clearly present, and is revealed in how the question of the purpose of education is treated. It is expressed that the meaning and use of education stretches beyond the purpose of employment. Education is regarded as a means to strengthen cultural and social spirit of community:

> A Europe of Knowledge is now widely recognised as an irreplaceable factor for social and human growth and as an indispensable component to consolidate and enrich the European citizenship, capable of giving its citizens the necessary competences to face the challenges of the new millennium, together with an awareness of shared values and belonging to a common social and cultural space.
>
> (The Bologna Declaration 1999, p. 1)

Further the declaration states that

> The importance of education and educational co-operation in the development and strengthening of stable, peaceful and democratic societies is universally acknowledged as paramount, the more so in view of the situation in South East Europe.
>
> (The Bologna Declaration 1999, p. 1)

Strengthened democracy has been seen as a main purpose for measures aimed at developing IL (e.g. IFLA 2005, Ennis 1995). Although it is a far reach to connect the mentioning of democracy to IL it could be used to justify investments in IL programmes. The issue is handled on a general level, which creates a distance to IL, but one part of the first citation above draws near the area of IL:

> […] capable of giving its citizens the necessary competences to face the
> challenges of the new millennium,[…]
>
> (The Bologna Declaration 1999, p. 1)

Although not explicitly expressed, it implies that the challenges brought by the new millennium – often meaning globalization and development of information and communication technology – should be met by academes across Europe by equipping students and teaching faculty with the accurate competences. The notion of a knowledge base that ensures capability to deal with change is compatible with that of IL as a set of generic skills that are transferable between contexts (e.g. Grafstein 2002, p. 210).

The concept of lifelong learning is less prominent in the set of shared objectives that constitute the central part of the Bologna Declaration, goals that are considered to be of principal relevance for the establishment of a European area of higher education and for promoting that system of higher education to the rest of the world. In brief these are: adoption of a system of easily readable and comparable degrees based on the two main cycles undergraduate and graduate, establishment of a uniform system of credits to promote student mobility, promotion of mobility for students and faculty, of European co-operation in quality assurance, and of the necessary European dimensions in higher education. Ergo, lifelong learning is not included among the main goals outlined, but it is touched upon in dealing with the system of credits:

> Establishment of a system of credits - such as in the ECTS system – as a proper
> means of promoting the most widespread student mobility. Credits could also
> be acquired in non-higher education contexts, including lifelong learning,
> provided they are recognised by receiving Universities concerned.
>
> (The Bologna Declaration 1999, p. 3)

This is formulated in a rather disconcerting way, describing lifelong learning as a context where credits can be acquired, without clarifying which alternative agents would distribute these credits. Reasonably it can be assumed that it refers to e.g. vocational training. Still, while attention is directed towards lifelong learning, it is simultaneously dissociated from higher education as it is pictured as something completely detached. Lifelong learning takes place in other contexts but it is still regarded as something for higher education to pay attention to and cast a foundation for.

The overarching level of discussion in the declaration and the wide-ranging guidelines provided can explain the absence of IL as replaced by the presence of lifelong learning, since lifelong learning is considered to be a broader term. As has been shown in this study, IL is seen as a means of realizing lifelong learning. The presence of lifelong learning in the document can make it useful in connection to IL, but the general level obstructs the usability as it fails to provide guidance in how to approach IL and lifelong learning.

4.1.2 Document Analysis: The Prague Communiqué of 2001

The Prague Communiqué of 2001 is, as the communiqués of Berlin, Bergen and London, the result of a follow-up meeting between Ministers responsible for higher education, during which the status of the Bologna Process so far is determined, and directions for the future work are established. It is a three-page document with four

sections: *Introduction*, *Further actions following the six objectives of the Bologna process*, *Furthermore Ministers emphasized the following points:*, and *Continued follow-up*. As in other Bologna documents on this level, the term IL is not used. Compared to the Bologna Declaration, the Prague Communiqué highlights the importance of lifelong learning, assigning a separate section to the issue. In addition, the term *lifelong learning* is mentioned already in the introduction, where it is stated that Ministers "recognized the need for a lifelong learning perspective on education" (p. 1). Also in the very last paragraph of the Prague Communiqué, the importance of lifelong learning is emphasized:

> In order to take the process further, Ministers encouraged the follow-up group to arrange seminars to explore the following areas: cooperation concerning accreditation and quality assurance, recognition issues and the use of credits in the Bologna process, the development of joint degrees, the social dimension, with specific attention to obstacles to mobility, and the enlargement of the Bologna process, *lifelong learning* and student involvement.
>
> (The Prague Communiqué 2001, p. 3, italics added)

These locations, early in the document, and closing it, implies that lifelong learning is considered an important dimension of higher education, worthy of special attention. This is supported by the fact that lifelong learning is also one of the sub-headings in the passage *Furthermore Ministers emphasized the following points:*, i.e. lifelong learning is one of the points specifically emphasized by Ministers. The paragraph reads as follows:

> Lifelong learning is an essential element of the European Higher Education Area. In the future Europe, built upon a knowledge-based society and economy, lifelong learning strategies are necessary to face the challenges of competitiveness and the use of new technologies and to improve social cohesion, equal opportunities and the quality of life.
>
> (The Prague Communiqué 2001, p. 2)

No definition of the term lifelong learning is presented in the Prague Communiqué, but based on this paragraph it could be argued that lifelong learning is given two dimensions: one societal and one personal. On a societal level, lifelong learning is a condition for the development of a "knowledge-based society and economy" and also for social cohesion. For the individual, lifelong learning is regarded a condition for equality and quality of life. The borders between the two levels are not clear, as all aspects of lifelong learning, and maybe especially phenomena such as social cohesion and equality, are of importance to both society and individual. Linguistically the passage is in line with Tight's (1998, p. 253-254) claim that lifelong learning is often justified by reference to "the language of change" and surrounded by notions of the future.

The formulation "In the future Europe…" implies that lifelong learning is strongly connected with a vision of a future society and future needs. Lifelong learning strategies are also outlined as a condition for the increasing of adaptation and adhibition of new technologies, something that is often regarded as falling within the concept of IL.

Lifelong learning cannot occur only in a traditional higher education context and lifelong learning strategies seem to be considered as something that is necessary primarily outside of traditional learning contexts and for other reasons than just the

(individual's) increase of knowledge, aligning with arguments by Tight (1998, p. 254) that focus on non-traditional learners and learning institutions is inherent in the concept of lifelong learning.. Still, it is in the Prague Communiqué seemingly regarded a task for traditional higher education institutions to teach these strategies.

4.1.3 Document Analysis: The Berlin Communiqué of 2003

The Berlin Communiqué is a nine-page document resulting from a ministerial summit in Berlin 2003. It deals to a large part with the progress made to achieve the objectives stated in the Bologna Declaration, and specifically with advancements since the Prague summit in 2001. Further follow-up regarding membership, stocktaking and additional actions is also discussed. The concept of IL is still absent but lifelong learning is given some attention. The knowledge-based society is mentioned in passing but not explored further. Assessment is brought up while reporting on quality assurance, but not in detail and not in relation to lifelong learning, rather in terms of evaluating programmes or institutions and internal assessment. Reports on progress concerning lifelong learning, receiving increased attention since the Prague summit, reveal the following development:

> Ministers underline the important contribution of higher education in making lifelong learning a reality. They are taking steps to align their national policies to realise this goal and urge Higher Education Institutions and all concerned to enhance the possibilities for lifelong learning at higher education level including the recognition of prior learning. They emphasise that such action must be an integral part of higher education activity.
>
> (The Berlin Communiqué 2003, p. 6)

Here some actual guidance is offered on how to carry out lifelong learning initiatives as opposed to the overarching statement in the Bologna Declaration of the importance of lifelong learning. An integration of a lifelong learning perspective into higher education activity could imply in a wider sense that IL should be treated as integrated with subject knowledge rather than as a stand-alone subject. The mentioned alignments of national policies comprise change in Swedish legislation that amongst other things turns curricula into legally binding documents, in which IL related learning outcomes can be found, partly as a consequence of the heavy emphasis placed on the issue in the Bologna control documents. Further it is stated that:

> Ministers furthermore call those working on qualifications frameworks for the European Higher Education Area to encompass the wide range of flexible learning paths, opportunities and techniques and to make appropriate use of the ECTS credits.
>
> (The Berlin Communiqué 2003, p. 6)

This passage suggests accreditation for non-formal learning, quite vaguely like in the Bologna Declaration. This, and the indistinct phrase "make appropriate use" as well, leaves an opening for a subjective reading. The following lines however, are more elucidating.

> They [Ministers] stress the need to improve opportunities for all citizens, in accordance with their aspirations and abilities, to follow the lifelong learning paths into and within higher education.
>
> (The Berlin Communiqué 2003, p. 6)

Compared to an unclear formulation in the Bologna Declaration, it is here evident that lifelong learning is seen as an issue for higher education to take into consideration and take responsibility for. In the other documents analysed the usefulness of lifelong learning seems to be regarded as detached from higher education contexts, whereas this statement clearly connects them. In sum, it can be concluded that some advances towards guidelines for IL and lifelong learning initiatives can be discerned in the Berlin Communiqué compared to earlier documents.

4.1.4 Document Analysis: The Bergen Communiqué of 2005

The Bergen Communiqué is a six-page document resulting from the ministerial meeting in Bergen in 2005. The concept of IL is not mentioned while lifelong learning is limitedly examined; it is explicitly discussed in only two paragraphs:

> We underline the importance of ensuring complementarity between the overarching framework for the EHEA [European Higher Education Area. Authors' note.] and the proposed broader framework for qualifications for lifelong learning encompassing general education as well as vocational education and training as now being developed within the European Union as well as among participating countries. We ask the European Commission fully to consult all parties to the Bologna Process as work progresses.
>
> (The Bergen Communiqué 2005, p. 2)

> We see the development of national and European frameworks for qualifications as an opportunity to further embed lifelong learning in higher education. We will work with higher education institutions and others to improve recognition of prior learning including, where possible, non-formal and informal learning for access to, and as elements in, higher education programmes.
>
> (The Bergen Communiqué 2005, p. 3)

The first quotation treats the interesting view of crediting lifelong learning. Here, lifelong learning is defined as "encompassing general education as well as vocational education and training". This definition focuses on the educational aspect of lifelong learning, something discussed in e.g. the Prague Communiqué. Democracy, active citizenship etc. are aspects of lifelong learning not discussed in this passage, as it is concerned with the complementarity between credits from higher education institutions and credits achieved in less traditional ways. Yet, the excluding of these aspects collides with some previous and later references found in the Bologna Documents and reveals the importance of defining what the lifelong learning perspective implies, and what aspects of it are relevant in higher education contexts.

Just as in the Prague Communiqué, lifelong learning is strongly connected with informal learning. In the second passage cited above, lifelong learning is almost made synonymous with informal and non-formal learning. The use of the verb "embed" indicates a view of lifelong learning as something that should permeate higher

education, and it could be argued that a realization of this presumes a recognition of the context-bound view of lifelong learning strategies, and hence of IL. Yet, the fact that the learner is to bring the knowledge with her indicates a view of lifelong learning strategies (and in a wider sense, IL) as transferable between contexts.

4.1.5 Document Analysis: The London Communiqué of 2007

The ministerial meeting in London in 2007 resulted in the seven-page London Communiqué. Several passages treat the issue of lifelong learning, section 1.4 follows:

> Our aim is to ensure that our HEIs [Higher Education Institutions. Authors' note.] have the necessary resources to continue to fulfil their full range of purposes. Those purposes include: preparing students for life as active citizens in a democratic society; preparing students for their future careers and enabling their personal development; creating and maintaining a broad, advanced knowledge base; and stimulating research and innovation.
>
> <div align="right">(The London Communiqué 2007, p. 1)</div>

The issue is further elaborated in section 2.18:

> Higher education should play a strong role in fostering social cohesion, reducing inequalities and raising the level of knowledge, skills and competences in society. Policy should therefore aim to maximise the potential of individuals in terms of their personal development and their contribution to a sustainable and democratic knowledge-based society.
>
> <div align="right">(The London Communiqué 2007, p. 5)</div>

It is interesting to note that in the first citation above, preparing students for an active life in a democratic society and for their future careers and personal development are mentioned before the knowledge-oriented aims traditionally associated with higher education. In section 2.18 the extended mission of higher education institutions – that they should not only produce well-educated labour, but also active citizens – is reaffirmed. The strong emphasis placed on this, together with personal development and democracy often being connected with both lifelong learning, IL and CT, reinforce the interpretation that support of IL education can be discerned in the Bologna documents.

Sections 2.5, 2.11 (headlined "Lifelong Learning") and 3.7 of the London Communiqué are all concerned with the relationship between lifelong learning, higher education and learning in non-traditional and non-formal contexts:

> 2.5 Fair recognition of higher education qualifications, periods of study and prior learning, including the recognition of non-formal and informal learning, are essential components of the EHEA, both internally and in a global context.
>
> <div align="right">(The London Communiqué 2007, p. 3)</div>

> 2.11 The stocktaking report shows that some elements of flexible learning exist in most countries, but a more systematic development of flexible learning paths to support lifelong learning is at an early stage. We therefore ask BFUG [Bologna Follow-Up Groups. Authors' note.] to increase the sharing of good practice and to work towards a common understanding of the role of higher education in lifelong learning. Only in a small number of EHEA countries

could the recognition of prior learning for access and credits be said to be well developed. Working in cooperation with ENIC/NARIC, we invite BFUG to develop proposals for improving the recognition of prior learning.

<div align="right">(The London Communiqué 2007, p. 3-4)</div>

With a view to the development of more student-centred, outcome-based learning, the next exercise should also address in an integrated way national qualifications frameworks, learning outcomes and credits, lifelong learning, and the recognition of prior learning.

<div align="right">(The London Communiqué 2007, p. 7)</div>

As in the Bergen Communiqué, the importance of recognizing competence gained in other contexts than traditional higher education contexts "for access and credits", is expressed. Considering the frequent mentioning of this issue, it seems Ministers regard the formal accreditation of learning from different contexts a crucial aspect of enhancing the lifelong learning strategy competence in society. This interpretation is further supported by the formulations in the latter of the quotations above, where it is stated that the issues of *national qualifications frameworks*, *learning outcomes and credits*, *lifelong learning*, and *recognition of prior learning* should be addressed in an integrated way. A new concept, *flexible learning paths*, is introduced as a means to support lifelong learning. The meaning of the concept is not further elaborated, but it is linguistically in line with the values surrounding the concept of lifelong learning, as noted by Tight (1998).

The importance of recognizing competence developed in other contexts than traditional higher education contexts is an important issue, as it extends the higher education institutions' role in the lifelong learning issue, from being concerned with the learning taking place *during and after* finished education, the recognition of alternative competencies widens the perspective to also involve learning taking place *before entering* the university.

4.1.6 Document Analysis: The Dublin Descriptors

The Joint Quality Initiative (JQI) is an informal network for European quality assurance and accreditation that stems from the Bologna Process. *The Dublin Descriptors* of 2004 is a result of the work of JQI. According to Alwerud and Ekelund (2006, p. 4) it is an important document. It sketches out the general criteria students should meet up to in order to be awarded qualifications that signify the completion of

- the higher education short cycle (defined as "a programme of study within the Bologna first cycle, but which do not represent the full extent of this cycle. Such awards may prepare the student for employment, while also providing preparation for, and access to, studies to completion of the first cycle." (JQI 2004, p. 1))
- the first cycle (undergraduate)
- the second cycle (graduate)
- the third cycle (doctorate)

Almost all the criteria set up by the JQI can be said to relate to IL or lifelong learning in some way. The descriptors are progressive to their nature; descriptors on the third cycle level build on those on the second, which build on those of the first etc. There are five

descriptors on each level (except for the third, doctorate, level on which there are six descriptors, one related to the research conducted), each in large dedicated to one of the following areas (JQI 2004, p. 4):

- knowledge and understanding
- applying knowledge and understanding
- making judgements
- communication
- learning skills

All of these contribute to the view of IL expressed, but the two areas most relevant to this study are the third and the fifth. The cited tables below show in short what criteria are set up for these in the first, second and third cycle. The short level descriptors are not included in the tables, probably as it is not a formal level but rather a level that exists in practice but that is not defined in official contexts.

	Making judgements:
1 (Bachelor)	[involves] gathering and interpreting relevant data ..
2 (Master)	[demonstrates] the ability to integrate knowledge and handle complexity, and formulate judgements with incomplete data ..
3 (Doctorate)	[requires being] capable of critical analysis, evaluation and synthesis of new and complex ideas..

	Learning skills ..
1 (Bachelor)	have developed those skills needed to study further with a high level of autonomy ..
2 (Master)	study in a manner that may be largely self-directed or autonomous..
3 (Doctorate)	expected to be able to promote, within academic and professional contexts, technological, social or cultural advancement ..

(JQI 2004, p. 4)

Information seeking is considered a basic and necessary ability, expressed already on the short cycle level: "have the ability to identify and use data to formulate responses to well-defined concrete and abstract problems" (JQI 2004, p. 1). On the undergraduate level this is extended to "the ability to gather and interpret relevant data (usually within their field of study) to inform judgements that include reflection on relevant social, scientific or ethical issues" (JQI 2004, p. 1). On the higher levels, the information seeking dimension is left out (considering the intended progressiveness, the criteria must have been met in order to pass the undergraduate level), and emphasis is placed on information use, with formulations such as *handle complexity*, *critical analysis*, *evaluation* and *synthesis*, terms often connected to CT.

The information use related set of criteria is labelled "making judgements", indicating the intended purpose of this kind of knowledge or abilities. In addition, already on the short cycle level, information gathering and interpreting is connected to problem solving, a recognition of the relationship between information use and thinking skills, and an adopting of the HE terminology and perspective in associating information abilities primarily to CT.

When treating information seeking on the undergraduate level it is stated, although within parenthesis, that the information gathering and interpreting usually should take place within the student's field of study, a formulation that recognizes the context-specific dimension of IL, but that also could imply a view of it as a transferable skill, as the term "usually" implies that it may also take place within other contexts.

In the Dublin Descriptors, information abilities are related to judgement making, a concept that is frequently heard in the CT discussion, but that is not often mentioned in IL contexts and that is not overtly connected to lifelong learning. Judgement making is an important aspect of higher education, but not recognizing the relationship between it and IL, and the relationship between IL and lifelong learning, excludes this important aspect of IL. In the Bologna context, where the importance of lifelong learning is strongly emphasized, it is likely that if a connection between information abilities and lifelong learning were overtly recognized, it would increase interest in IL.

In large, the Dublin Descriptors can be said to support a view of IL related knowledge as essential in all higher education, and the mentioning of information seeking, though not explicitly expressed as the libraries' task, must be interpreted as inviting libraries to contribute to higher education in Europe, as information gathering is generally associated with the library. When discussing other aspects of IL related issues, these seem to be regarded as relating to CT rather than IL. The use of IL for the realizing of lifelong learning is overseen, in favour of a view of information abilities as related to CT. It is argued here that a LIS perspective on the matter would for example probably lead to a connection between lifelong learning strategies and IL.

4.2 National legislation

In short, the Swedish judicial system rests upon acts and ordinances. The acts are legislated by the Parliament, as opposed to the ordinances that are legislated by the Government. In general, the paramount regulations are established in acts, whereas the ordinances rule in further detail what the acts determine.

Initiated by the Bologna process, Swedish national legislation concerned with higher education was altered to conform to some of the objectives stated in the Bologna Declaration. Documents on a national level, i.e. the Higher Education Act (latest altered in 2006) and the Higher Education Ordinance (latest altered in 2006), are analysed in this chapter in order to discern whether guidelines regarding IL related issues are presented, what approach to IL can be observed, and to what extent the documents can have an effect on librarian-faculty partnerships. In resemblance to the Bologna documents analysed, the term IL is not used although issues concerning the area are raised. The documents analysed in this section are official translations of the Swedish Higher Education Act and Higher Education Ordinance into English.

4.2.1 Document Analysis: Higher Education Act

The Higher Education Act (SFS 1992:1434) contains five chapters dealing with different aspects of higher education. The first chapter is headlined *Initial provisions*, followed by *Organisation of the state higher education institutions*, *Professors and other teachers*, *The students*, and *Special provisions*. The act ends with *Entry-into-force and*

transitional provisions. Above all, the first chapter *Initial provisions* is relevant for the issues raised in this study. In this chapter, sections 8, 9, and 9a are of particular interest, as they deal with first, second and third level education respectively.

On an overarching level the same approach to knowledge that was observed in the Bologna documents can be found in The Higher Education Act, where a position for accumulative knowledge acquisition is clearly taken. Section 8, 9, and 9a in the first chapter all commence with expressions of this view:

> First level education shall essentially build on the knowledge that students acquire in national or specially designed programmes at upper secondary school or corresponding knowledge. The Government may, however, allow exceptions where education in the field of arts is concerned.
> (SFS 1992:1434, Higher Education Act, section 8)

> Second level education shall essentially build on the knowledge that students acquire in first level education or corresponding knowledge.
> (SFS 1992:1434, Higher Education Act, section 9)

> Third level education shall essentially build on the knowledge that students acquire in first level and second level education or corresponding knowledge.
> (SFS 1992:1434, Higher Education Act, section 9a)

These statements are followed by instructions for the setting of goals, describing what learning outcomes students on different levels of education must achieve. Here the occurrence of IL related thoughts are prevailing. Starting with first level education, it is established that:

> First level education shall develop the students'
> - ability to make independent and critical assessments,
> - ability to independently perceive, formulate and solve problems, and
> - preparedness to deal with change in working life.
> (SFS 1992:1434, Higher Education Act, section 8)

This passage has a strong presence of CT and could be said to connect it to lifelong learning. The first statement concerns judging information and hence touches upon IL as well as CT, the second leans more towards CT in pointing to problem-solving abilities, and the third steps up a level to lifelong learning as it is more general and refers explicitly to an extended context and timeframe. Section 8, still dealing with first level education, continues:

> In the educational field concerned, in addition to knowledge and skills, students shall develop an ability to
> - seek and evaluate knowledge at a scholarly level,
> - follow the development of knowledge, and
> - exchange knowledge with other people, including people without specialist knowledge of the field.
> (SFS 1992:1434, Higher Education Act, section 8)

This could be interpreted as a view of IL as context-bound, as it is situated in "the educational field concerned". IL is clearly present while CT and lifelong learning were dealt with in the previous passage. While the last two statements accentuate awareness of subject knowledge, keeping up-to-date with it, and capability of communicating it,

the first emphasizes information seeking and evaluation, which are core components of IL. Interestingly, what is sought is not information but knowledge, indicating a conception of knowledge as equal to information, maybe implying a HE perspective as this view would not be likely within LIS. Regarding the relationship between data, information and knowledge, Mutch (1997, p. 384) claims that information is "an integral part of the process of knowledge formation". Information and knowledge are admittedly close-knit, yet here the concepts seem to be used interchangeably.

Some likeness with Section 8 is found in Section 9, dealing with second level education:

> Second level education shall involve a deepening of knowledge, skills and abilities relative to first level education and, in addition to what applies to first level education, shall
> - further develop the students' ability to independently integrate and use knowledge,
> - develop the students' ability to deal with complex phenomena, issues and situations, and
> - develop the students' potential for professional activities that demand considerable independence or for research and development work.
> (SFS 1992:1434, Higher Education Act, section 9)

A similar division of emphasis is detected, where the first item concerns IL and CT, the second moves closer to CT, and the last widens the context and shifts focus to lifelong learning. Concerning third level education in Section 9a not much is added:

> In addition to what applies to first level and second level education, third level education shall develop the knowledge and skills needed to be able to conduct research independently.
> (SFS 1992:1434, Higher Education Act, section 9a)

The knowledge and skills needed are not identified but from a LIS perspective it goes without saying that IL competence is crucial to conduct research independently.

Although the IL issue is clearly present in the Higher Education Act, there is still a lack of guidelines for the question of responsibility, and there is no reference to neither librarians nor faculty. Neither in chapter 2, *Organisation of the state higher education institutions*, where the issue might be expected to be raised, is any advice on the matter offered. This can be ascribed to the fact that the Higher Education Act addresses higher education institutions and thereby implicitly places faculty in charge of all learning outcomes. Librarians in turn, answer to The Libraries Act. Section 6 in this act treats university libraries:

> These libraries shall, within the fields connected with the education and research at the university or university college, be responsible for library services within the university and university college and, in collaboration with the library service in Sweden, generally provide library services.
> (SFS 1996:1596, The Libraries Act, Section 6).

More precisely what library services should contain remains unsaid. It can be concluded that IL is in the Higher Education Act pictured as context-bound and that CT is connected with lifelong learning. Further, librarians and teaching faculty are governed by two separate acts which both fail to provide guidance in the question of

responsibility concerning the areas of education that fall on the border of the two professional domains. The impact on the faculty-librarian partnership cannot be dismissed; the statutory responsibility for learning outcomes that is placed on faculty does not facilitate their collaboration with librarians or incite them to share their domains.

4.2.2. Document Analysis: Higher Education Ordinance

System of Qualifications, Appendix 2 of the Higher Education Ordinance, establishes the qualifications that may be taken at the three levels of higher education and the requirements that must be fulfilled for each qualification. The first level entails University Diploma (*Högskoleexamen*) and Degree of Bachelor (*Kandidatexamen*), the second level entails Degree of Master (one year) (*Magisterexamen*) and Degree of Master (two years) (*Masterexamen*), and the third level entails Degree of Licentiate and Degree of Doctor. Both general qualifications, qualifications in the field of Arts and professional qualifications (e.g. Degree of Bachelor of Science in Engineering or Degree of Master of Laws) are specified.

The description of each qualification is ordered under the headlines *Scope*, *Objectives*, *Independent project* and *Other*. It is the *Objectives* sections, with their subheadings *Knowledge and understanding*, *Skills and abilities*, and *Judgement and approach* that are of primary interest to this study. Only the general qualifications are considered in this section. In section 4.3.1 the document *Qualifications for a Degree of Master in Psychology* is analysed, as a consequence of its specificity grouped among the documents on the departmental level.

Information related issues are treated under the heading *Skills and abilities*. Found here is the first mention of the term *information* in the analysed documents, concretising the abstract formulation "seek and evaluate knowledge" from the Higher Education Act (SFS 1992:1434). In the University Diploma qualifications it is stated:

> For a University Diploma students must
> - demonstrate an ability to seek, gather and critically interpret relevant information so as to formulate answers to well-defined questions in their main field of study
> (SFS 1993:100, Higher Education Ordinance, Appendix 2)

This passage specifies the purpose of information abilities on this level: "so as to formulate answers to well-defined questions in their main field of study". It may be noted that no reference is made to lifelong learning or independent learning in a longer perspective. On the higher levels, the aspect of independence is emphasized to a higher extent, e.g.:

> For a Degree of Master (Two Years) students must
> - demonstrate an ability to critically and systematically integrate knowledge and to analyse, assess and deal with complex phenomena, issues and situations, even when limited information is available;
> - demonstrate an ability to critically, independently and creatively identify and formulate issues and to plan and, using appropriate methods, carry out advanced tasks within specified time limits, so as to contribute to the development of knowledge and to evaluate this work

<div style="text-align:center">(SFS 1993:100, Higher Education Ordinance, Appendix 2)</div>

Focus is placed on the CT dimension of information related activities, discussing several IL constituents from this perspective. As in the Dublin Descriptors, information skills are primarily discussed using terminology found also in the CT debate, placing information abilities rather in the field of HE (and in a wider sense CT) than in the field of LIS.

The ability to identify one's information need, a crucial dimension of IL, is explicitly outlined as a criterion from the Bachelor level and upwards, e.g.:

> For a Degree of Master (Two Years) students must [...]
>   - demonstrate an ability to identify their need of further knowledge and to
>   take responsibility for developing their knowledge.
> <div style="text-align:center">(SFS 1993:100, Higher Education Ordinance, Appendix 2)</div>

The criterion is located under the heading *Judgement and approach*, not under *Skills and abilities* as the other information-related criteria, but is obviously considered an ability. The fact that no relationship is expressed between information need recognition and information seeking could limit the role of the library, as there is a risk that only the information seeking passages are seen as applying to the role of the library.

The term lifelong learning is not mentioned in the Higher Education Ordinance, but to "take responsibility for developing their knowledge" must be considered almost tantamount to lifelong learning, and the quotation above indicates that the ability to identify one's information need is considered an important aspect of lifelong learning strategies. There are no indications though, that this is considered a dimension to which LIS could contribute. Assessment is not discussed in the Higher Education Ordinance, but the recurrent formulation "in their main field of study" indicates a view of IL as dependent on context.

4.3 Department of Psychology at Lund University

The Department of Psychology belongs to the Faculty of Social Sciences. Three libraries belong to the Faculty, covering different subjects within the area. As has been outlined in 2.1.1, four different documents are analysed on this level. The qualifications for a degree of Master of Science in Psychology, that are established in Appendix 2 of the *Higher Education Ordinance*, are grouped with these documents, even though they formally belong to the Swedish national legislation level. Considering the purpose of this study, this grouping is more appropriate as the qualifications apply to the specific departmental context and not to all departments at all universities.

4.3.1 Document Analysis: Qualifications for a Degree of Master of Science in Psychology

The professional qualifications for a Master of Science in Psychology were added to the Higher Education Ordinance (SFS 1993:100) in 2006 (SFS 2006:1053) and entered into force on January 1st, 2007. The qualifications specify for the Psychology Programme

the general qualifications for a Degree of Master (two years). In the section *Skills and abilities*, one passage is of specific interest for this study:

> *Skills & abilities*
> […]
> - demonstrate an ability to critically and independently examine, assess and use relevant information and to discuss new facts, phenomena and issues with different groups, so as to contribute to the development of the profession and professional activities.
> (Higher Education Ordinance 1993:100/2006:1053, Appendix 2)

The qualification cited above is clearly devoted to IL related issues, but also treats the aspect of communication. The formulation is not overtly connected to the psychology profession and is very similar to formulations found in the general qualifications for a Degree of Master:

> - demonstrate an ability to critically and systematically integrate knowledge and to analyse, assess and deal with complex phenomena, issues and situations, even when limited information is available;
> […]
> - demonstrate an ability to clearly present and discuss their conclusions and the knowledge and arguments behind them, in dialogue with different groups, orally and in writing, in national and international contexts
> (Higher Education Ordinance 1993:100/2006:1053, Appendix 2)

Yet, a slightly different focus can be discerned in the professional qualifications for a Master of Science of Psychology, where the formulation "new facts, phenomena and issues" indicates a lifelong learning perspective; the student must have the ability to continue her learning also after graduation. Yet, the main purpose of this specific qualification is to determine what information-related abilities the students must achieve, and lifelong learning is dealt with under the section *Judgement and approach*:

> For a degree of Master of Science in Psychology students must […]
> - demonstrate an ability to identify their need of further knowledge and to continuously upgrade their capabilities.
> (Higher Education Ordinance 1993:100/2006:1053, Appendix 2)

The formulation is almost identical to the one found in the general qualifications for a Degree of Master outlined in the Higher Education Ordinance:

> For a Degree of Master (Two Years) students must […]
> - demonstrate an ability to identify their need of further knowledge and to take responsibility for developing their knowledge.
> (Higher Education Ordinance SFS 1993:100, Appendix 2)

It seems however, that in the qualifications for a Master of Science in Psychology even more emphasis is placed on the essentialness of continuous learning. The formulation "ability to […] take responsibility for developing their knowledge" is not as unconditional as "ability to continuously upgrade their capabilities", seemingly indicating an attempt to express that lifelong learning is even more important in the field of Psychology than in some other fields, that the general qualifications also must be valid for.

Considering the similarities between the general qualifications in the Higher Education Ordinance and the qualifications for a Master of Science in Psychology that are on a more concrete and applied level, the conclusions that can be drawn about IL are practically the same. The lifelong learning issue is addressed, although not in the same sections as IL, indicating that no direct connection is made between the two.

4.3.2 Document Analysis: Project Report from the Faculty of Social Sciences

In 2006 the Faculty of Social Sciences at Lund University started up a project with the aim to increase the integration of IL instruction into regular teaching, and to improve collaboration between the Faculty and its libraries (Jönsson 2006, p. 2). This is to be achieved through the formulation of learning outcomes for IL on both undergraduate and graduate level. Hope is expressed that the Faculty Board will pass the suggested learning outcomes, and that they will be added to every syllabus and curriculum. The suggested goals are progressive and are to be judged and assessed like other learning outcomes (Jönsson 2006, p. 3). In the 12 page project report *Informationskompetens - ett lärandemål i högskoleutbildningen : Projektrapport Samhällsvetenskapliga fakulteten* (*Information Literacy – a Learning Outcome in Higher Education : Project Report, Faculty of Social Sciences*) (Jönsson 2006), henceforth referred to as *Project Report,* a view of IL as general and transferable, and at the same time as a subject-attached competence is explicit. This view permeates the report, e.g.:

> Hence, in order for the students to recognize information seeking as a meaning-creating process, instruction must be planned and performed well-integrated and in relation to subject matter instruction.
> (Jönsson 2006, p. 5. Authors' translation.[2])

> Students will not acquire information literacy in connection with occasional information seeking occasions in the libraries, this happens in the learning process in relation to other knowledge development in which information seeking constitutes a central feature.
> (Jönsson 2006, p. 5-6. Authors' translation.[3])

> Information literacy is developed within a disciplinary context in relation to an independent task involving problem-solving and -interpretation and the use of information in academic schooling or at a place of work.
> (Jönsson 2006, p. 4. Authors' translation.[4])

The report states that information seeking is only one of many components of IL, and an information literate person is defined as someone who "from an identified information need have the ability to find, evaluate and turn information into knowledge." (Jönsson 2006, p. 4. Authors' translation[5].). Interestingly, in the last of the three cited passages above IL is strongly connected to CT, using terms such as problem-solving and problem-interpretation. This connection is rarely made in the literature or in the other documents analysed in this study. Despite the broad view of IL reported, the second of the quotations above indicates that information seeking is considered the key feature of IL. In addition, it implies that information seeking is the only aspect of IL that the library is responsible for. This view is found also in other parts of the documents, and is mirrored in the learning outcomes, reported to cover six elements of knowledge:

- The library's collections, printed and electronic:
- Types of publications
- Information sources and search services
- Search technique and strategy
- Source evaluation
- Reference systems and citation technique

(Jönsson 2006, p. 6. Authors' translation.[6])

The first four points are all related to information seeking, and the last one is dedicated to a purely formal aspect of information use, leaving "source evaluation" as covering the other recognized aspects of IL. Source evaluation is a complex and broad subject, but it is not in line with the reported view of IL that information seeking and source evaluation together constitutes IL. The information use aspect is somewhat excluded, and considering that a broad view of IL is adopted, it is unlikely that this dimension is deliberately overlooked. Instead, the formulation must be interpreted as implying that these other aspects of IL are a task for faculty. The implementation of these aspects is not discussed, implying that it is already done, or that it is something that comes automatically in higher education. Comparing this to the frequent references to CT in curricula, it is most possible that these aspects of IL are considered as corresponding to CT.

The report presents details about how instruction is to be carried out, in connection with each formulated learning outcome. A mainly skills-based view of IL is present in both learning outcomes and instruction descriptions, e.g.:

> After finished course, the student shall be able to perform subject-related searches, to evaluate information and to handle references.
>
> (Jönsson 2006, p. 7. Authors' translation.[7])

> […] formulate search terms and combine these in search strings for field and free text searches.
>
> (Jönsson 2006, p. 8. Authors' translation.[8])

> Ability to identify and find given references.
>
> (Jönsson 2006, p 8. Authors' traslation.[9])

Representatives from the four libraries (now merged to three) belonging to the Faculty of Social Sciences, directors of studies, and a reference group (faculty and student representatives) took part in the project, and a wish for collaboration between faculty and librarians permeates the report. In addition, it is stated that "Information literacy is not only a matter for the library, but a competency goal in education, where the library constitutes an aid." (Jönsson 2006, p. 6. Authors' translation.[10]). Nevertheless, only the role of the library and the librarian, and the aspects of IL that the library is responsible for, are mentioned. As discussed above, this could indicate that the aspects of IL that faculty is given responsibility for are considered as already integrated into regular education, as they correspond to CT which is a well-known concept in the HE tradition, and highly emphasized in curricula.

Concerning collaboration it is stated that the division of responsibility will materialize during the practical work with realizing the goals, and that best use will be made of the competencies of both librarians and faculty (Jönsson 2006, p. 10-11). It is suggested that these competencies are further developed through inviting librarians to

take part in higher education pedagogy refresher courses, and through the offering of education in information handling to all future faculty employments. The absence of discussion about the division of responsibility implies that the issue has been clear and unproblematic to all participants of the project. Drawing on the *Project Report* as a whole, it can be assumed that librarians are to be responsible for courses in information seeking, source evaluation based on *type of source*, e.g. research journal (e.g. peer-reviewed or not?), conference paper etc., and reference managing. Instruction must be developed in collaboration with faculty though, as it should be linked to the students' subject of study. What faculty are to take responsibility for is not specified, but some aspects of information use, including source evaluation in relation to the subject-specific context, are excluded in the librarians' tasks, implying that it is the task of faculty to teach these.

When the responsibility division is touched upon in the report it concerns only instruction, when it comes to assessment it seems presumed that it is a matter only for faculty. Assessment is addressed in three passages:

> The learning outcomes regarding information literacy are judged and assessed just like other learning outcomes of courses and programmes.
> (Jönsson 2006, p. 3. Authors' translation.[11])

> The learning outcomes regarding information literacy can be evaluated in connection with an independent writing assignment just like the other learning outcomes that have been set up for that course. It is important that there are clear guidelines for the evaluation and assessment of information literacy.
> (Jönsson 2006, p. 11. Authors' translation.[12])

> [The project group suggests that] Guidelines for the accounting of and the evaluation of information literacy are stated in control documents.
> (Jönsson 2006, p. 12. Authors' translation.[13])

None of these passages explicitly say that faculty are responsible for assessment, but as faculty normally is responsible for this, any deviation is likely to have been emphasized.

IL is expressed as a prerequisite for lifelong learning (Jönsson 2006, p. 4), and some connection of it to CT can be discerned in the document. However, when formulations such as "critically analyse" are found in the document, they are used as relating to source evaluation rather than to drawing conclusions based on information evaluation. The ability to critically analyse information is described as deriving from increased knowledge about different types of sources, revealing a use of the term "critical" that does not directly correspond to the meaning it is given when discussing CT.

In conclusion, the report focuses on the information seeking dimension of IL and strongly indicates that the role of the library is to arrange and give information seeking instruction. The approach towards IL is mainly skills-based. It seems that the aspects of IL that faculty are responsible for are regarded as corresponding to CT. The attitude towards collaboration between faculty and librarians is positive and the importance of integrating IL instruction with regular subject matter teacher is emphasized, also revealing the recognition of IL as context-dependent. Librarians are the active voice, inviting faculty to contribute.

4.3.3 Document Analysis: Guidelines for Implementation

The document *Riktlinjer för genomförande av lärandemål för informationskompetens på Samhällsvetenskapliga fakulteten (Guidelines for Implementation of the Information Literacy Learning Outcomes at the Faculty of Social Sciences)* (Social- och beteendevetenskapliga biblioteket 2007), henceforth referred to as *Guidelines for Implementation*, opens with a one-page introduction followed by the three main headlines *Students' Participation in the Libraries' Instruction, Assessment Criteria for Information Literacy*, and *Information Literacy for Distance Students*. The first three parts, including the introduction, are of interest for this study while the last part, dealing with distance students, does not add anything beyond the former parts. In the introduction it is declared that as of autumn 2007 IL is introduced as a learning outcome throughout the programmes and courses of the Faculty of Social Sciences, and that the purpose of these guidelines is to achieve conformity in implementing and assessing the IL learning outcomes. Despite its briefness this introduction makes space for expressing standpoints of several issues. In this first paragraph, the progressive approach to knowledge acquisition prescribed by the Bologna Process is present:

> The aim is that all students participate in the libraries' teaching because the course features are based on progression and constitute an integrated part of the subject matter teaching. In order to reach a high level of participation it is crucial that the students at an early stage in the educational programme are informed of the meaning of the concept of information literacy and its meaning and relevance for higher education studies as well as for lifelong learning.
> (Social- och beteendevetenskapliga biblioteket 2007, p. 1. Authors' translation.[14])

Also in these lines IL is connected with lifelong learning as it is described as being of relevance in that matter and the importance of creating awareness and understanding of the concept of IL is emphasized. In addition, a stance is taken for subject-integrated IL education as opposed to a stand-alone IL programme. This is further highlighted as the paragraph continues:

> The perhaps most important incitement is a clear connection to the subject education that is the actual condition for the students' participation in the libraries' teaching. The end product, i.e. the students ability to seek, judge, and critically analyse information, is a result of what is being practised in both the library and in the subject teaching.
> (Social- och beteendevetenskapliga biblioteket 2007, p. 1. Authors' translation.[15])

It is stressed that a successful result is due to both the library and the subject teaching, implying that a functioning collaboration between librarians and teaching faculty is crucial. Further, a definition of IL is offered in the description of the end product, portrayed as the ability to seek, judge, and critically analyse information. This definition does not imply any relation to context, however the following paragraph contains another expression of the integrated approach to IL:

> Quality and progression of the skills acquired by the students are secured by established judgement criteria for information literacy that are applied in connection with an independent assignment at the undergraduate level two and three and at the graduate level.
> (Social- och beteendevetenskapliga biblioteket 2007, p. 1. Authors' translation.[16])

The judgement criteria mentioned are further elaborated under the second main headline, *Assessment Criteria for Information Literacy*.

Under the first main headline, *Students' Participation in the Libraries' Instruction*, routines are proposed for library instruction for the purpose of keeping a high participation and securing a foundation for assessing the teaching performed by the library. The chapter is divided into two sections, headlined *Undergraduate Studies* and *Master Level*, where the former is further divided into Level 1, Level 2, and Level 3, and the latter into *Master Level Courses in Swedish* and *Master Level Courses in English*.

Starting with undergraduate studies, Level 1 addresses all new students attending an introductory (A level) course at Lund University. At this level, in contrast to Level 2 and 3, attendance is only compulsory once and can thus be counted in following studies. Another factor separating Level 1 from the following levels is that no outcomes assessment is performed. Students are expected to acquire the skills outlined in the learning outcomes by participating in the instruction performed by the library. Those absent are required to attend instruction at a later occasion or take part of web-based tutorials and complete related exercises that are to be sent to the librarian. Level 2 and 3 both address all students attending a course. IL related knowledge is assessed through an independent assignment, integrated with subject specific knowledge. In resemblance to Level 1, it is also compulsory to participate in the library-led teaching and failing to do so involves an additional assignment related to a web-based tutorial. Level 2 only requires participation in this tutorial, whereas Level 3 demands that it is followed by a written assignment documenting among other things information seeking strategy, source selection and search queries. The assignment is to be sent to both the librarian and teaching faculty.

Concerning the students' participation in the libraries' instruction at the advanced level, the guidelines are the same as at the above described Level 3. One exception is that the Master level courses in English does not offer web-based tutorials as an alternative for those absent from the ordinary instruction, probably because they are not available in English. The students are instead required to attend another session and deliver a written assignment related to that.

The second main part, *Assessment Criteria for Information Literacy*, contains IL learning outcomes and criteria for assessing it. Here the view of IL permeating the guidelines is clearly pronounced:

> Information literacy is described both as a transferable, general competence and as a subject-attached competence. Several of the general competences stated in the Higher Education Act are applied in an independent writing assignment and can be assessed in connection with such an assignment.
> (Social- och beteendevetenskapliga biblioteket 2007, p. 4. Authors' translation.[17])

The IL education levels are divided, as earlier, into *Undergraduate Studies* with Level 1, 2, and 3, and *Master Level*. At Level 1 the students are supposed to learn how to perform a simple information search and know about the basics of reference systems. They are introduced to the libraries' resources and to fundamental information seeking in catalogues and databases. Further, they are taught basic search technique and knowledge organization within the social sciences. The students are expected to meet the appointed learning outcomes by attending the libraries instruction, no further assessment is performed.

Level 2 aims to provide an increased understanding of the information seeking process. The students should acquire the ability to perform subject related information searches in relevant sources, critically judge information, and master the current reference system so that a correct list of references can be compiled. The skills practised focus on: knowledge organisation, information sources and search services, searching techniques and strategies, source evaluation, and citation technique. Assessment of the ability to apply the IL skills is performed by teaching faculty in connection with an independent writing assignment. The student's ability to seek information and critically select sources is assessed by examining the literature and sources used, whether it is central to the subject area and is more than assigned course literature, and finally whether the list of references is correct and citations are performed accurately.

Basically the same skills are practised at Level 3, but there is a slightly different focus. In brief, this level puts emphasis on ability to formulate a research problem, to seek and handle information in a reflective, analytical and ethical manner. The students are expected to independently perform searches within the subject area, critically analyse the information, and be able to use it in a qualified way. Except for this emphasis, the same assessment criteria as Level 2 applies to Level 3, and the responsibility lies with teaching faculty.

At the Master level the guidelines for Level 2 and 3 apply and are expanded with a focus on scientific communication and publication. The students are required to display an essentially deepened understanding of and ability to apply the IL related knowledge. Aside from the university's licensed information resources they are expected to know about open archives, and rapports and studies by governments and international organisations. The IL teaching at this level focuses on scientific communication, journal ranking systems, and personal alert system services. Teaching faculty perform the assessment on the same premises as on previous levels but of course with a heightened demand in correlation with the advanced level.

In conclusion, the view of IL present in these guidelines, i.e. a combination of transferable skills and context-specific competence, is in accordance with the approach in other Bologna Documents. Areas strongly related to the LIS domain such as knowledge organisation are still applied to a specific subject and to the social sciences in general.

There seems to be a risk of under-utilization of the competence at hand, considering the division of work tasks between the two professions. The lowest level of IL education deals with skills treated as generic, which are applied to the subject in question at the second and third level when the learning outcomes are of a more advanced nature. At that point there is also a shift in responsibility. While the librarian is in charge of assessment at the first level, consisting of checking attendance, that task is transferred to faculty as the teaching and assignments reach an advanced level, on which the generic skills from lower levels are applied. Although the written assignments are to be sent to both librarian and faculty, it is stated in italics that faculty alone performs the assessment. It goes without saying that librarians would find it difficult to assess the subject-specific contents of writing assignments unless it falls within their personal area of expertise. However, with that said it could be contended that teaching faculty would find similar difficulties in assessing IL related knowledge. Although they are trained for assessing students' writings, they still lack knowledge of the librarian's area of expertise. In order to achieve a highly accurate assessment process it seems necessary that both professions partake in it in a parallel effort. The current division of responsibility means an under-utilization of the existing resources. A barrier to the

suggested structure is that it requires different and successful librarian-faculty collaboration, a relationship that according to the literature is in need of attention.

4.3.4 Document Analysis: Curricula

In this section the curricula of the Degree of Master of Science in Psychology programme at Lund University are analysed. The programme contains twelve courses, six on a basic level and six on an advanced level. They are named alphabetically and range from A through J with duplicates of E and F. Their respective curriculum all hold seven items: *General information, Learning Outcomes, Course Contents, Teaching and Assessment, Grades, Demands for Previous Knowledge,* and *Course Literature and Other Teaching Materials*. Material of interest for this study is primarily found in *Learning Outcomes* and *Teaching and Assessment*, but also to some extent in *Course Contents*. Put together these curricula make a sizeable material, 34 pages, and they will therefore not be presented individually. The aim is here instead to discern general characteristics and extract meaning from that, using excerpts from individual curriculum to illustrate examples.

Two recurrent matters present throughout the curricula are progressiveness in knowledge acquisition and an emphasis placed on the ability to communicate psychology related knowledge. There is a general tendency to stress the importance of CT skills, from the A course requesting a "reflective" and "ethical mind-set", to the J-course aiming for the students to be able to "critically examine and understand scientific articles" (Master Programme in Psychology curricula 2007, Courses A & J). Although expressions of CT are constantly present throughout the curricula, the term is not used. Neither is the term IL, and IL related knowledge takes up an insignificant part of the curricula. To the limited extent that IL is present in the text, it is at the lower levels incorporated in the subject-specific learning outcomes. The more advanced courses carry explicitly expressed IL learning outcomes. Assessment of IL related knowledge is not mentioned separately at all, and must be assumed to be covered by the general directives. The first mentioning of IL related knowledge is in both the E courses, where it is stated under *Teaching and Assessment*:

> The teaching is based on the future psychologist's active knowledge-seeking
> (Master Programme in Psychology curricula 2007, Courses E1 & E2. Authors' translation.[18])

Further, the E2 course aims for the future psychologist's ability to:

> Independently and critically take part of the original literature on psycho-pathology and neuropsychology
> (Master Programme in Psychology curricula, Course E2. Authors' translation.[19])

These statements imply the importance of the ability to seek information and judge its relevance. A more explicit expression of IL related knowledge is found among the learning outcomes for the H course:

> Independently follow the current research and knowledge development in psychology, through a demonstrated good ability to seek literature in international psychology journals
> (Master Programme in Psychology curricula 2007, Course H. Authors' translation.[20])

This passage also indicates a view of IL as context-bound as it is connected with subject-specific information sources, an occurrence that continues in the learning outcomes for the I course:

> Seek literature within a work and organisational psychology subject area and independently compile literature reviews.
> (Master Programme in Psychology curricula 2007, Course I. Authors' translation.[21])

Finally, in the last course, one of the learning outcomes is the ability to judge scientific literature, and understand how it can be applied.

> Critically examine and understand the contents of scientific articles/reports and on basis of this judge the practical application and/or addition to the research front.
> (Master Programme in Psychology curricula 2007, Course J. Authors' translation.[22])

The prominence of CT related knowledge in the curricula is not at all surprising since it is an important aspect of learning and a central concept of the Higher Education field. The absence of the term IL and the less frequent occurrence of its expressions can be explained by the faculty context in which the texts were produced. The HE discipline's imprint is also evident in that the term *information* is not used, not even in the passages where IL related knowledge is brought up, it is instead replaced by *knowledge* and *literature*. However, to the extent that IL related knowledge is present in the curricula, it is clearly expressed as being dependent on context.

In retrospect of the guidelines previously analysed, some correlation can be found. The guidelines place greater emphasis on IL teaching and assessment at the higher levels, whereas Level 1 courses do not require any special assessment measures other than recording the students' presence. A similar pattern can be noted in the curricula although more discreet, with no mention at all of IL at the lowest levels and some occurrence at the higher levels. The complete absence of IL in the assessment prescription can be explained by that those are on a general level and do not describe how to assess individual features of the course.

4.4 Document Analysis: Discussion

The textual analyses of the separate documents are in this section summarized in a general discussion. On account of the considerable difference between the three levels that the documents fall within, the levels are initially treated separately. Starting at the European level, followed by the Swedish national and the departmental level, it concludes with a general discussion covering all levels.

4.4.1 The Bologna Process

Neither the term IL, nor CT, is mentioned in any of the documents on a European level. In order to establish the view of these issues it has been necessary to look at how related areas are discussed, and how the term lifelong learning, that interrelates to both IL and

CT, is treated. It can be noted that the meaning of the term lifelong learning is not specified in any of the Bologna documents, implying that the definition of the term is considered as generally known. Thus, in order to determine what is put into the concept of lifelong learning, it has been necessary to look for underlying values and presumptions surrounding the term. Thoughts that fall within, or border on, the area of IL are more or less explicitly expressed through lifelong learning. They are on a very general level and therefore do not reveal any specific approach to IL, nor do they provide any guidance in how to implement it. However, the importance of lifelong learning is given considerable weight, and IL has – as has been shown in section 3.1.4 – been recognized as a means to achieve lifelong learning. Though, in the one Bologna document that explicitly treats both IL and lifelong learning – the Dublin Descriptors – a connection between the two areas is not expressed. Instead, in the Dublin Descriptors IL is mainly associated with CT and surrounding contexts and a view of IL as context-dependent can be discerned. Yet, it is these documents that are said to force or justify the implementation of IL initiatives on the local university level, showing how the lifelong learning discussion in the documents expresses a view of IL. As has been shown in section 3.1.4 this relationship is recognized also in theoretical literature.

Lifelong learning is often treated as detached from higher education contexts, but is also, seemingly contradictory, considered an issue concerning HE. Some sections reveal a risk of lifelong learning being seen as something that is useful only *after* finished education although higher education institutions need to provide the foundation for it, whilst others express a view of lifelong learning as intertwined with and useful both within higher education and in what surrounds and follows it. The approach to lifelong learning influences how IL initiatives are designed. In the connecting of IL related knowledge to lifelong learning, there is ambivalence in the documents. Some treat information related knowledge in the same passages or contexts that they treat lifelong learning, while others seem to separate the two.

The Bologna documents treat these issues on an overarching level; the presumed receivers are governments and institutions rather than the individual librarian and university lecturer. Still, the terminology does not collide with that of the HE tradition, whilst the complete absence of the term "information" could have the effect that librarians to do not feel that the issues addressed concern them or their profession. Assessment is not explicitly addressed in the Bologna documents, but an accumulative approach to knowledge is evident in the view of lifelong learning. The Dublin Descriptors, the only document exclusively addressing IL related knowledge, adopts a similar view of IL evident in the progressiveness of the criteria outlined. The progressiveness leads to a division of IL components that can be perceived as impracticable. If adopting the "list approach" to IL – the approach that may also be the one easiest to operationalize into concrete learning outcomes goals – this division could function though.

To a large extent, the Bologna documents address issues that should concern both faculty and librarians, but as a consequence of the overarching perspective, and of the outset that each participating country should itself take responsibility for the implementation of the guidelines provided, the only conclusion concerning librarian-faculty collaboration that can be drawn, is that, at least from a LIS perspective, librarians' competence would be an aid in achieving the goals, as IL this study has shown that there is strong evidence that IL is a means of achieving lifelong learning – it is a lifelong learning strategy.

4.4.2 National Legislation

National legislation deal with these issues on an overarching level as well, thereby excluding the practical details concerning framing of IL education and assessment. Yet, to a certain extent it is possible to find passages in the documents that indicate a context-specific approach to IL. Both metaphorically and literally, this approach rules the views on IL present at higher education institutions, and hence how the issue of IL instruction and assessment is dealt with.

Information related abilities are primarily mentioned in connection to CT and problem-solving, and the relationship between these concepts is undoubtedly close-knit. Information need recognition, a core concept of IL, is pictured as connected with lifelong learning in the Higher Education Ordinance. The connection between information need recognition and IL is not recognized though, a recognition that would facilitate librarian-faculty collaboration. Yet, the bare mentioning of the term *information* in the Higher Education Ordinance broadens the plausible group of receivers to also include librarians and places the notion of *information* within the higher education sphere. Several formulations concerning goals in higher education are connected with areas generally associated with the library, recognizing it as an important and natural part of higher education.

4.4.3 Department of Psychology at Lund University

Moving on to the documents on the departmental level, IL is regarded as both a context-bound competence, and as generic, transferable skills. Although both of these views of IL are expressed, a stronger emphasis on the context-specific approach can be discerned in the documents, while still not rejecting the transferability of the skills in question. Hence, the view of IL instruction present in the documents is that it should be well integrated with subject matter teaching. This is in line with the view that information handling constitutes an important part of the learning process, an approach that aligns with the idea behind lifelong learning, which presumes that the learner is able to learn independently and to take responsibility for her own learning. This study has shown that the ability to identify and define one's own information need, to find information and to evaluate it is, often considered a prerequisite for lifelong learning. This view seems to have been adopted in the documents on the departmental level. It is assumed in the documents that an integration of IL instruction into regular subject matter teaching could help signal this to the students.

Seemingly contradicting the broad view of IL that is expressed as adopted, all the documents on the departmental level, apart from the Qualifications for a Master of Science in Psychology that formally belongs to another level of documents, places focus on the information seeking aspect of IL. This can only be interpreted as that the library should be responsible for information seeking instruction, while faculty teach the other, not specified or discussed dimensions of IL. In principle, the teaching of skills is assigned to the librarian, while the applying of skills and the other aspects of IL are tasks for faculty. Indications that these other aspects correspond to the concept of CT have been found in the documents. This division of responsibility is aligned with Jenkins' (2005) idea of the division of responsibility, in which librarians teach how to locate and evaluate information while faculty teach how to merge it into writings.

A positive stance towards librarian-faculty collaboration is taken in both the *Project Report* and in the *Guidelines for Implementation*. In the project report it is almost described as a necessity, as it is stated that IL develops in a disciplinary context in which information seeking is a natural feature, seemingly dividing the responsibility for the development of IL between librarians and faculty. Yet, mainly the library's role is discussed in the two documents. The assessment aspect of this partnership is not discussed, it is only stated that it is the responsibility of faculty. Considering the extensive responsibility for instruction placed on the librarian, and the thereby implied recognition of her competence as complementing the faculty's expertise, it is somewhat surprising that she is not invited to partake in assessment. Librarians would find it difficult to assess the subject-specific contents of writing assignments, but similar difficulties should reasonably apply to faculty in assessing IL related knowledge. An optimal assessment process requires parallel efforts from both professions so as to avoid that the existing resources are under-utilized.

The *Project Report* and the *Guidelines for Implementation* clearly have a LIS perspective, while the HE perspective permeates the other two documents (i.e. Qualifications for a Degree of Master of Science in Psychology, and curricula). The difference in terminology is clear, e.g. the strongly LIS related terms *information* and *information literacy* are neither used in the curricula nor in the qualifications, in which CT related terminology is prominent. Further, the departmental level documents offer the first mentioning of the term *information literacy*.

4.4.4 Conclusion

Concluding the document analyses, the influence of the two different theoretical traditions is evident. The *Project Report* and the *Guidelines for Implementation* on the departmental level are the only documents with a LIS background and therefore it is only here that the importance of IL is explicitly expressed and that the term is used. Consequently this is the only utterance of IL assessment and the belonging question of responsibility thereof. Librarians are the active voice, inviting faculty to contribute, as opposed to documents on the higher levels in which the library is neither the voice nor the receiver.

To the extent that IL related elements are discussed in the documents, a view of IL as partly context-dependent can be discerned at national and departmental level, whereas the European level only deals with lifelong learning and hence does not express either or. Just as in the literature, the recognition of IL as context-bound seems not to exclude a view of IL skills as transferable. This view of IL applies well to the view in the *Delphi Report* on CT, in which it is stated that CT skills as such are generic, but that the application of them sometimes requires domain-specific knowledge (Facione 1990, p. 10-11). In the LIS literature, Grafstein (2002, p. 197, 202) expresses a similar approach to IL.

The close connection between IL and CT is clear in the documents; issues falling within the two concepts are frequently discussed in the same sections and contexts. The strong focus on problem-solving found in many of the documents could indicate that IL, often narrowed down to equalling information seeking, is considered a means of performing CT. This view aligns with several HE scholars advocating that information seeking is part of CT (e.g. Facione 1990, p. 3, Scheffer & Rubenfeld 2000, in Allen *et al* 2004, p. 16).

Lifelong learning is discussed explicitly or implicitly in all of the documents, though it is generally regarded as relating closer to abilities and knowledge that are emphasized within CT than to those that are stressed within IL. Explicit references to lifelong learning aligns surprisingly well with Tight (1998, p. 253-254), who claims that the concept often is surrounded by allusions to change, to the future, and to self-fulfilment, and that the language is visionary and abstract.

The issue of IL assessment is absent in the documents on European and national level, but is raised at the departmental level, more specifically in the *Guidelines for Implementation*, one of the two documents that take on a LIS perspective. In the document it is stated that it is faculty that are responsible for all assessment. It should be noted that Sonntag and Meulemans (2003, p. 16, 20) mention collaboration in IL assessment as essential for successful librarian-faculty collaboration. The other document in which it would have been natural to address the issue is the *Project Report*, in which the question of division of responsibility in general is treated. Though, the report only states that division of responsibility will come naturally, and that best use must be made of the two professions' different competencies.

It seems that in the documents on the European and national level, a HE perspective is taken. Though, when it comes to implementing the IL focus into higher education, the task has been handed over to the library, bringing a LIS perspective on the end product. Without good communication this could be problematic, as librarians are likely to want to work with more aspects of IL than information seeking, while faculty see these aspects as belonging to CT, and hence to themselves. Considering the overlapping between the two concepts, librarians and faculty are likely to interpret formulations in the document in different ways, in aspect of who's competence fits where. If this overlapping is recognized, use can be made of the competence of both librarians and faculty. If it is not, there is a risk of under-utilization of either faculty's or librarians' competence, and also a risk of certain learning outcomes falling between the chairs.

5. Conclusions

The purpose of this study has been to, with Lund University IL documents as a point of departure, investigate how the guidelines of the Bologna Declaration and its subsequent Bologna process provide common ground for librarians and teaching faculty to meet and collaborate in issues concerning outcomes assessment of IL in higher education, and under which conditions this can occur. IL assessment has served as a window to study the view of IL expressed in the Bologna documents. In practice this is done through identification of what is expressed of IL related knowledge and assessment thereof, and in what contexts these expressions occur. The research questions of this thesis have been approached through textual analysis building on a relatively thorough literature review. The textual analysis has been performed on documents produced in the trail of the Bologna Process, and as the theoretical perspectives of the interpreters, in this case librarians and faculty, are crucial factors for the implementation in practice, the theoretical positionings of LIS and HE are explored in the literature review. In this chapter, the findings of this study are presented and discussed. First, the findings on the relationship between different concepts used in the context are presented, whereupon the two sub-questions are addressed. Finally focus is shifted towards the main research question.

Concerning the relationship between terminology used in the different traditions and documents, the theoretical connections between the concepts of IL, CT, and lifelong learning have been explored. It is here argued that IL is in many contexts regarded a means to realize lifelong learning. The relationship between IL and CT has been discussed, and it has been found that both the idea that IL encompasses CT and the opposite have been suggested in the literature. Drawing on the literature review, it can be concluded that the difference between IL and CT lies in their diverse points of focus. In large, the concepts encompass the same aspects, but differ in their valuing of these aspects in the sense that what is regarded as the cores of the concepts are completely different things. Within LIS the concept of CT is scarcely discussed, and in the HE field IL has not been given any attention at all. Instead the concept of CT is extensively debated, although the relation to IL is not acknowledged. Nor lifelong learning seems to be discussed in connection with CT in the HE literature. In the documents analysed, these relationships are recognized to a various degree. The most overt pattern is the connecting of information related knowledge abilities with CT, a connection that is visible in a majority of the selected documents.

There is an inconsistency in the expressed relationship between IL and lifelong learning; some documents explicitly connect them while others discuss IL related knowledge only in a context where focus lies upon CT. A more explicit recognition of the relationship between IL and lifelong learning in documents at the European and national level, could increase general awareness of possible LIS contributions to the discussion, and also strengthen the library's status as a key feature of a learning

environment promoting the development of lifelong learning strategies. In addition, recognition in both the HE and the LIS fields of the close connection between CT and IL, could improve the theoretical conditions for closing the gap between the two professions, and in practice granting librarians a greater influence on teaching the aspects of CT that overlap IL.

With these terminology issues accounted for, focus is shifted towards the implications of disciplinary conditions on IL assessment and on librarian-faculty collaboration. The two sub-questions of this study address how the LIS and HE disciplines relate to assessment of IL, and what conditions for collaboration between librarians and faculty can be discerned within the literature of the two disciplines, in aspects of IL assessment.

Within LIS, collaboration with faculty in IL instruction and assessment is vividly discussed and expressed in desirable terms. In the HE field however, where CT corresponds to IL, no such collaboration is discussed. As the literature review shows, this is due to a lack of interest in IL within the HE field. If faculty and librarians recognized the connection between the concepts of IL and CT, it could create a beneficial starting point for partnership. Acknowledgement of the different terminology used to express the same goals would probably be more fruitful than librarians trying to inflict the notion of IL on faculty. One factor that could aid this process would be reduced emphasis on the library from LIS, facilitating a connection of IL with a wider context including the concept of CT.

There are two main views of IL, as a set of transferable skills or as situated knowledge. Traditionally the former of the two approaches has prevailed, possibly because it is easier to operationalize into measurable learning outcomes. The context-specific approach to IL is however gaining ground, a similar development as can be seen in the CT debate. A subject-integrated view of IL is more inviting to contribution from faculty but could also involve a reduced understanding of the expertise of the librarians.

The literature review shows that there is strong consensus within both disciplines that IL and CT require multiple methods for reliable assessment. Due to the complexity of the concepts it is often claimed that different methods must be used depending on what aspects are assessed. For practical and economical reasons this is not always feasible. To a certain extent, IL and CT are assessed in regular subject-matter assessment, although not always explicitly, as they are inseparable elements of subject-matter knowledge. This continuous assessment, in which it is for practical reasons difficult for librarians to partake, is necessary and positive, but in order to perform reliable and accurate assessment, the expertise of both faculty and librarians is needed. Librarians' competence can deepen the students' understanding of the different aspects surrounding information seeking, evaluation and use, complementing the subject-matter knowledge of faculty.

As has been noted in the LIS literature, on an informal, individual level successful librarian-faculty collaboration is not uncommon. Based on the document analysis, it is argued that the guidelines of the Bologna Process can provide common ground and strengthen this collaboration by taking it to a formal level. The conditions and circumstances under which this can take place is the focus of the main research question of this study, namely how the guidelines composed within the frame of the Bologna Process can provide common ground for librarians and teaching faculty to meet and collaborate in issues concerning information literacy outcomes assessment, and under which conditions this can occur.

In placing IL related issues on the agenda, the Bologna Process increases general recognition of IL, which is likely to have a positive impact on librarian-faculty collaboration. Even though no detailed guidelines for this partnership are offered in the Bologna documents, it will certainly lead to the issue being raised at different levels in the higher education sphere, as has already occurred to some extent.

This study analyses IL related documents produced at the Faculty of Social Sciences at Lund University. Among the documents analysed in this study the term IL is only used at the university level, in documents produced in a library context. However, these documents refer to Bologna documents at higher levels in justifying IL initiatives. This indicates that although the term IL is not used, the occurrence of the related concept lifelong learning has been interpreted as a call for IL initiatives. Drawing on this it can be concluded that documents at the Bologna level as well as at national legislation level focus on the final goal whereas local level documents concentrate on how it can be achieved. Hence, universities implementing the guidelines of the Bologna process have interpreted these guidelines as acknowledging IL as a means of achieving lifelong learning. The acknowledgement is implicit in the documents however, and due to disciplinary differences, faculty may see references to CT where librarians interpret it as IL. This strengthens the notion of IL and CT as overlapping, but also increases the need to justify IL initiatives to faculty. The Bologna documents express a clear purpose of IL related knowledge – it is useful for lifelong learning. This goal or purpose must be considered at all stages of the implementing of the guidelines, also in assessment.

The context-dependent approach to IL related knowledge adopted within the Bologna Process further improves the circumstances for collaboration, as it explicitly demands contributions from librarians and teaching faculty. The significance of context is – as has been shown in the literature review – extensively discussed in both the IL and the CT literature, making it an aspect of the implementation of relevant Bologna guidelines that both professions can relate to. Recognition of the significance of context turns teaching faculty, with their disciplinary knowledge, into part of the context onto which the librarians' IL competence is applied. This approach to IL leads the way to faculty forming the backdrop, although not a passive one, to the implementation of IL initiatives, extending its field beyond the library.

One possible implication of the context-dependent view of IL could be that faculty is given responsibility for the assessment, as has been done at Lund University. Involving faculty in IL initiatives is positive as their competences complements that of librarians, but not engaging librarians in the assessment process is just as much under-utilization of resources as leaving faculty out. The situation can be problematic, as the easiest way to make use of librarian expertise ought to be a separate IL course. However, a non-integrated course makes it difficult to implement the context-specific view of IL advocated by the Bologna Process. A context-bound, separate course would demand that librarians have the specific disciplinary knowledge in question. A context-bound, integrated course would demand librarians to work closely and continuously with faculty, a practice that limited resources rarely permit.

Practical limitations are probably also the reason that continuous IL assessment is not discussed in the documents. How assessment is performed – continuously, integrated, context-bound or not – has impact on collaboration in the sense that it limits the options. How responsibility is divided between faculty and librarians has implications for the status of IL and of the librarian profession. Placing at least some of the responsibility for assessment on the librarian could enhance recognition of this

competence. Division of responsibility, however, is apparently not an area of interest in the studied documents.

Except that it is implicit that the assessment procedure should conform with the view of IL expressed in the Bologna documents, the documents produced at European and national level do not provide any detailed guidance on how to perform assessment of IL. How the individual university chooses to arrange the assessment must hence be based on something else, presumably on the traditional roles of librarians and faculty and on the different disciplines' claims of ownership of certain areas of knowledge.

This study has explored how IL related issues in the Bologna documents have been interpreted in the documents at Lund University, and what discipline-specific conceptions form the bases of these interpretations. Understanding of these interpretations could be deepened through further research that focuses on the individual interpreters. Interviews with representatives for the two professions would help to further nuance the picture, and would be an interesting contribution to the research field.

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Appendix 1

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IFLA. *International Federation of Library Associations and Institutions*, founded in 1927. Aims at "Promoting high standards of provision and delivery of library and information services, encouraging widespread understanding of the value of good library & information services, and representing the interests of our members throughout the world."

Internationella Programkontoret A Swedish government agency that comes under the Education and Culture Department. Supports schools, universities, companies, organisations and individuals in order to help them participate in international cooperation initiatives

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Appendix 2

Notes

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[1] - attityder som utgår ifrån förmågan att känna igen problem och insikten om att det finns ett allmänt behov av bevis för att belägga vad som uppges vara sant, kunskapen om
- vad som menas med giltiga slutsatser, abstraktioner och generaliseringar, där värdet av olika typer av bevis logiskt fastställs, samt
- färdigheter i att använda och tillämpa dessa attityder och kunskaper.

[2] För att studenterna ska uppfatta informationssökning som en meningsskapande process måste alltså undervisningen i informationshantering planeras och genomföras väl integrerad i och i relation till ämnesundervisningen.

[3] För att studenterna ska uppfatta informationssökning som en meningsskapande process måste alltså undervisningen i informationshantering planeras och genomföras väl integrerad i och i relation till ämnesundervisningen.

[4] Informationskompetens utvecklas i en disciplinär kontext i relation till en självständigarbetsuppgift som innebär problemlösning och tolkning och användning av information i en akademisk utbildning eller på arbetsplatsen.

[5] [...]utifrån ett identifierat informationsbehov förmår lokalisera, utvärdera och omvandla information till kunskap.

[6] • bibliotekets samlingar, tryckta och elektroniska:
• publikationstyper
• informationskällor och söktjänster
• sökteknik och sökstrategi
• källkritik
• referenssystem och citeringsteknik

[7] Efter avslutad kurs ska studenten kunna utföra ämnesrelaterade informationssökningar, kunna värdera information och behärska referenshantering.

[8] formulera söktermer och kombinera dessa i söksträngar för fält- och fritextsökningar

[9] förmåga att identifiera och söka fram angivna referenser

[10] Informationskompetens är inte enbart en biblioteksangelägenhet utan ett kompetensmål i utbildningen där biblioteken utgör ett stöd.

[11] Lärandemålen i informationskompetens bedöms och examineras i likhet med övriga lärandemål i kurser och program.

[12] Lärandemålen för informationskompetens kan bedömas i samband med ett självständigt arbete i likhet med övriga lärandemål som formulerats för en kurs. Det är viktigt att det finns tydliga riktlinjer för hur informationskompetens bedöms och examineras.

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[13] Riktlinjer för redovisning och bedömning av informationskompetens anges i styrdokument.

[14] Målet är att samtliga studenter deltar i bibliotekens undervisning eftersom kursmomenten bygger på progression och utgör en integrerad del av ämnesutbildningen. För att uppnå ett högt deltagande är det viktigt att studenterna i ett tidigt skede i utbildningen informeras om innebörden av begreppet informationskompetens och dess betydelse och relevans i högskolestudier liksom i det livslånga lärandet.

[15] Det kanske allra viktigaste incitamentet är en tydlig återkoppling till ämnesutbildningen som faktiskt förutsätter studenternas deltagande i bibliotekens undervisning. Slutprodukten, dvs. studenternas förmåga att söka, värdera och kritiskt analysera information, är ett resultat av det som tränas både i biblioteket och i ämnesundervisningen.

[16] Kvalitet och progression i de färdigheter studenterna erövrar säkras genom fastställda bedömningskriterier för informationskompetens som tillämpas i anslutning till ett självständigt arbete på grundutbildningens nivå två och tre och på avancerad nivå.

[17] Informationskompetens beskrivs både som en överförbar, generell kompetens och som en ämnesanknuten kompetens. Flera av de generella kompetenser som anges i högskolelagen tillämpas i ett självständigt arbete i form av uppsatser och kan bedömas i samband med en sådan uppgift.

[18] Undervisningen bygger på den blivande psykologens aktiva kunskapssökande.

[19] Självständigt och kritiskt ta del av originallitteratur kring psykopatologi och neuropsykologi

[20] Självständigt följa den aktuella forskningen och kunskapsutvecklingen inom psykologiämnet, genom demonstrerad god förmåga att söka litteratur i internationella psykologiska tidskrifter

[21] Söka litteratur inom ett arbets- och organisationspsykologiskt ämnesområde, och självständigt sammanställa litteraturöversikter.

[22] Kritiskt granska och tillgodogöra sig innehållet i vetenskapliga artiklar/rapporter och på dessa grunder bedöma praktisk tillämpning och/eller tillskott till forskningsfronten.