Integrating Information Literacy into the High School Curriculum:
An Annotated Bibliography

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Introduction and Scope

This bibliography is designed to survey the research on information literacy theory and curriculum design. Since the late 1990s, information literacy has emerged as one of the main concerns of academic and school librarians. The focus here will be on school libraries, specifically research relating to high school students and programs; some overlap occurs in articles examining the transition from high school to college research environments. The bibliography consists of nine articles from the United States, three Swedish studies, one Finnish, and one Canadian; all were published in scholarly, peer-reviewed journals with a focus exclusively on Information & Library Science research. Articles from roughly the past twenty years are included, the oldest dating from 1991, in order to examine developments in this emerging field as fully as possible within the limited space of this project.

Description

Information Literacy (IL) incorporates several interrelated facets: “technical skills, application skills, research skills, critical thinking, ethics and responsibility, communication, and collaboration” (Allen, 2007, p. 19). In the United States, although there are published standards for Information Literacy instruction, such as the American Association of School Librarians’ “Standards for the 21st Century Learner”, studies have shown that actual elementary and secondary school IL curricula are inconsistent (Islam & Murno, 2006; Allen 2007). Concurrently, research into student learning and information use in the digital age has revealed a lack of understanding in basic functions (search engine mechanics, citations) to higher-level research functions such as evaluating authority and accuracy or formulating research questions (Limberg, 1999; Heinstrom, 2006; Julien & Barker, 2009; Sormunen, Heinstrom, Romu, & Turunen, 2012). Evolving initiatives to rectify the status quo include encouraging greater teacher-librarian collaboration (Montiel-Overall, 2008), and moving instruction towards concepts-centered guided enquiry (Kuhlthau, 2008; Limberg, Alexandersson, Lantz-Andersson, & Folkesson, 2008). Efforts have also been made to increase use of a standardized information literacy skills assessment at the high school and university level (Islam & Murno, 2006; Allen, 2007; Brown & Gaxiola, 2010).
Summary of Findings

The core principles of information literacy are not new to the realm of librarianship. The definition quoted from Allen in the section above represents a mission in line with the twenty-first century. But in this definition from Limberg et al. (2008), we can see the true heart of information literacy, layed bare of all the jargon: “information literacy is viewed as a set of abilities to seek and use information in purposeful ways related to the task, situation and context in which information seeking practices are embedded” (p. 83).

Information seeking, evaluation, thesis and focus development, and source citation were taught in schools long before the buildings had computer labs or wireless internet in every room. The proliferation of digital information systems, search engines, and participatory media has, however, necessitated both a change in the way these skills are conceptualized and a broadening of skills addressed (Allen, 2007; Francke & Sundin, 2012). How effectively are these new criteria—bundled together under the relatively new heading of “Information Literacy”—transmitted to high school students? What research exists on students’ demonstrated abilities in navigating the processes of information search and use? These are the research questions addressed in this bibliography.

The articles in this bibliography can be broken into two main categories: research on information habits and research on information literacy program infrastructures. The former category includes empirical studies, usually classroom-based, on how students seek and process information, and how these processes are affected by environmental and internal factors such as teaching methods, prevalence of digital media, and habitual learning style. The latter category includes studies and surveys on the state of information literacy instruction, including curriculum standards and collaborative methods.

The studies of Islam and Murno (2006) and Todd (2012) fit together to show both the micro- and macrocosm of the information literacy landscape as integrated within the American school system. Islam and Murno’s article cross-reference two sets of information literacy standards, one designed for higher education and one for secondary, to align commonalities and see which criteria are prioritized by high school librarians. They found that overwhelmingly, librarians were most involved in teaching basic information skills: avoiding plagiarism, citation software, following institutional guidelines, accessing databases. Todd’s more localized study (2012) of schools in New Jersey found a similar pattern of librarian involvement in information
literacy. While librarians there did report healthy working relationships with classroom teachers, their role in instruction followed the same pattern of lower-level, “what” and “where” skills. The criteria of information literacy that “focus on knowledge construction...are generally considered to be in the domain of classroom teachers” (p. 12).

There are several factors at work in librarians’ instruction roles being mired in the lower level functions of information literacy, more concerned with “pressing the right keys” than with serious analysis or process-centered learning (Limberg et al., 2008, p. 85). Islam and Murno (2006) discovered the frustration of many public school librarians at the lack of understanding among colleagues, especially administrators, that they have expertise to offer on research instruction; libraries and librarians are even viewed as being superseded by the Internet (p. 502). Francke and Sundin (2012) reiterate this idea, highlighting in their study of teacher-librarian collaboration that teachers often perceive librarians to be experts on providing and teaching to library holdings, but not on general information seeking and evaluative methods (p. 172).

Another explanation for the lack of librarian involvement in teaching higher-level research-related standards is simply the lack of time and resources in public schools for collaboration, as focus is increasingly placed on teaching to standardized tests (Julien & Barker, 2009; Islam & Murno, 2006). Islam and Murno’s survey of public school libraries across the country revealed a demographic largely frustrated by stagnant contact with classroom teachers and dismissive school administration. But, more recently and on a more local scale, Montiel-Overall (2008) has studied the organic, curriculum-changing collaborative successes that result from the perfect mixture of supportive school environment and knowledgeable educators.

Indeed, collaboration has been stressed by scholars in the literature as one of the solutions to the inconsistencies of student information literacy skills. Montiel-Overall (2008) has studied extensively successful models of teacher-librarian collaboration in schools. She has created a tiered model to measure the level of integration by both parties: Coordination, Cooperation, Integrated Instruction, and Integrated Curriculum (p. 146). She found that accompanying the increased levels of teacher-librarian collaboration is a rise in students’ academic achievement and engagement in class. The need for integration of information literacy content and subject-specific content in order to develop truly literate students has been stressed (Montiel-Overall 2008), (Julien & Barker 2009), (Francke & Sundin 2012). Indeed, Allen has concluded that “IL is a curricular initiative, not a library or technology initiative” (2007, p. 24).
Hope has also been placed on the development of information literacy-specific standardized testing to lend greater clout to the cause among teachers/faculty and school administrators (Islam & Murno, 2006; Allen, 2007). This is perhaps ironic, as emphasis on standardized testing is the very cultural model that, as described earlier, is perceived by some to have led to the lack of enquiry-based, sophisticated information literacy collaboration in the first place. Islam and Murno (2006) conclude with a recommendation, among others, that universities adopt the Educational Testing Service’s ICT Literacy Assessment (now the iSkills Assessment). Their reasons for this recommendation range from the practical, “to gauge incoming freshmen’s information literacy competencies”, to marketing, “promoting information literacy among college-bound students” (p. 507).

Research on best practices and models for information literacy instruction, as well as understanding of the user’s experience in the information search and use processes is still unfolding. This is a relatively new focus of Library Science, unfolding over the last two decades. As the array of articles in this bibliography demonstrate, the two branches of study often overlap to inform both landscapes. The resources collected and annotated here are meant to give an overview of both areas of scholarship and emerging developments in the field of information literacy instruction.
Bibliography

Entry 1:

Abstract: “Discusses the results of a quantitative study that assessed students' information literacy skills in order to ascertain if schools were teaching the necessary skills and whether teacher-librarians had an agreed-upon best practice model. Interviews with librarians at fifteen independent schools revealed that their definitions of information literacy and their teaching practices were all over the map. Another important finding was that many educators may have a limited view of information literacy. The results seem to indicate that high school students are let loose to search for information, use applications, and develop presentations. Teachers assume that students are adept with technology and that they do not need any formal instruction. The assumption among many high school teachers is that technology skills are purely technical, while, in fact, using the technology tools to analyze and understand information more deeply is the defining skill of information and communications technology literacy.”

Annotation: Presents the challenge of developing a comprehensive information literacy curriculum in an independent K-12 school. Allen’s survey of fellow independent school librarians is surface-level in comparison with Islam and Murno’s (2006) comprehensive survey of School Library Media Specialists. The section describing implementation of the ETS’s information literacy assessment presents an interesting portrait of the issue, in conjunction with Brown and Gaxiola’s (2010) chronicle of their experience with the iSkills test.

Search Strategy: Library and Information Science Abstracts was the database I wanted to use for my initial search. It is specific to the Library & Information Science field, and during the Proquest unit in INFO 522 we saw the extensive infrastructure and careful control of this database’s vocabulary and fields. I took advantage of LISA’s thesaurus to guide me in my first search. Two of my concepts, “high school” and “young adult”, referred me to the preferred terms “Secondary School” and “Young people”, respectively.
Database: Library and Information Science Abstracts (LISA) – Proquest

Method of Searching: Controlled Vocabulary Search

Search String:
SU.EXACT("Secondary school children") OR SU.EXACT("Secondary school libraries") OR SU.EXACT("Young people")

SU.EXACT("Information literacy")

S1 AND S2:
(SU.EXACT("Secondary school children") OR SU.EXACT("Secondary school libraries") OR SU.EXACT("Young people")) AND SU.EXACT("Information literacy")

Scholarly/Refereed: The article was returned after I limited to Scholarly Journals as the source type in LISA, and checked off “Peer reviewed”. I verified the classification with Ulrich's International Periodicals Directory and confirmed that Knowledge Quest is a refereed, scholarly journal. The American Library Association’s website describes the journal as peer-reviewed, as well.

Entry 2:

Abstract: “In 2008, the University of Nevada Las Vegas (UNLV) University Libraries piloted the Educational Testing Service's standardised test of information, communication, and technology (ICT) skills (iSkills) in spring and autumn 2008. In the course of administering the
test we explored motivational strategies, a critical component in low-stakes, low-personal-consequences testing. Motivational strategies included providing feedback on test performance, highlighting the value of the test for the individual student, and appealing to the student's willingness to improve the overall performance of the institution. We addressed ways to motivate students in order to enhance their level of participation in and performance on the test. As the use of standardised testing to benchmark student information skills is increasing within the information literacy community, it is vital to address these motivational aspects to ensure the generation of reliable data. This article describes the strategies and language the University Libraries used to convey value and stimulate interest; it also provides feedback from test-takers on why they tried to do their best on the test.”

**Annotation:** Offers a unique analysis of the methods and effectiveness of a university’s attempts to motivate freshmen undergraduates during information literacy testing. The article’s specific examples and data on student feedback are essential to establishing best practices as more educational institutions face the obvious hurdle: how to get students to care? One limitation of the study (admitted by the authors) is the lack of data correlating students’ motivation with actual test results.

**Search Strategy:** After searching LISA, ERIC and Web of Science, I turned to UC Riverside’s deep-web resource, INFOMINE, to see if there are any open-access journals that go un-indexed in Proquest and Web of Science that I might be missing. I browsed by title in the Social Sciences & Humanities category under “I”—hoping to find something like “Information Literacy Research” or “Information Literacy Quarterly”—with no luck. I decided to go back and search with the phrase “information literacy”, and *Journal of Information Literacy* was the first hit.

**Database:** INFOMINE: Scholarly Internet Resource Collections

**Method of Searching:** Browsing/Keyword Search

**Search String:** “information literacy”
Scholarly/Refereed: I verified the *Journal of Information Literacy* in Ulrich's International Periodicals Directory and found that it is a refereed, scholarly journal. The journal’s own website lists it as “an international, peer-reviewed journal”.

Entry 3:

Abstract: “Participatory media are commonly used in today's society for a variety of purposes. The credibility associated with these media is sometimes contested, and their acceptance into school practices has been debated. Focus group interviews with teachers and librarians in upper secondary schools in Sweden are used to investigate conceptions and experiences of activities involving the critical evaluation of participatory media, with a particular focus on Wikipedia. Three themes are addressed. The first concerns how the teaching of the critical evaluation of sources is organized and comanaged between teachers and librarians. The second describes educators' experiences of print versus digital media, and their worry because students have problems negotiating the information architecture of print media. The third theme deals with conceptions of the credibility of Wikipedia. Four conceptions of credibility are identified; credibility is associated with the control and stability of a source; it is considered to be strengthened when several sources support a claim; it is viewed as situational and partial, rather than absolute; and it is associated with a multiplicity of voices and democratic forms of production. These findings may be used to inform educational activities around credibility and authority in schools by raising self-awareness among educators of various ways to talk about the credibility of sources with both colleagues and students.”

Annotation: A sociocultural framework informs this timely study’s discussion of print vs. digital credibility, highlighting the demand on students to translate teachings on credibility and authority from one context and subject domain to another. A tension is revealed among study
participants between 1) barring Wikipedia altogether for an assignment, and 2) using Wikipedia as an example of credibility analysis while encouraging students to consider context, assignment parameters, and interpretation. A potential problem exists in how teacher participants were found for the study: implicit in teacher recruitment through school librarians is an already-existing collaborative relationship. Also reveals and analyzes the perception held by the participating teachers that librarians are experts on providing and teaching to library holdings, but not on general information seeking and evaluative methods.

**Search Strategy:** After searching Proquest’s LISA and ERIC, I turned to Web of Science, wanting to find additional research-heavy articles. Web of Science does not provide a subject thesaurus so I used a keyword search in the Topic field here. After sorting by Times Cited, this article was not at the top of my results list (it has not been cited in Web of Science yet), but the title and abstract stood out for its very current subject matter.

**Database:** Web of Science – Thomson Reuters

**Method of Searching:** Keyword Search

**Search String:** Topic=("information literacy") AND Topic=("secondary school" OR "high school")

**Scholarly/Refereed:** Web of Science does not provide a way to explicitly limit to peer-reviewed content, but I verified *Library & Information Science Research* in Ulrich’s International Periodicals Directory and found that it is a refereed, scholarly journal. The journal’s own website lists it as “a cross-disciplinary and refereed journal”.
Entry 4:

**Abstract:** “Information literacy education is central for students as a building block for functioning citizenship in an information rich world. To support students' development of information skills we need an awareness of underlying factors behind information seeking habits. This article will discuss whether differences in middle and high school students' information seeking may relate to their approaches to studying.

**Method:** The sample consisted of 574 students, grades 6 to 12, who independently sought information in order to learn about a curriculum topic. Data were collected at three stages of the students' information seeking process with use of four survey instruments, including an adapted version of the ASSIST test.

**Analysis:** The analysis of the ASSIST test and the structured questions was quantitative. The open questions were coded through an axial coding process and analysed qualitatively.

**Results:** Students with different study approaches tended to focus on different information seeking aspects in addition to shared commonalities. Students with a surface approach prioritized easily available sources, deep students were aware of quality aspects, and strategic students organized and structured their searches.

**Conclusion:** The search patterns resemble information seeking styles found in previous research. Level of engagement in the search task seems to be highly influential on information seeking behaviour.”

**Annotation:** Introduces a new element into information literacy-related user study, cross-analyzing the habitual learning styles of a group of middle and high school students with their approach to a specific information seeking assignment. The study identified three learning style categories: “surface” (low-motivation students), “deep” and “strategic” (variations of high-motivation students). Heinstrom’s finding that a student’s low motivation does carry over into information seeking supports her conclusion that information literacy instruction must be structured in an engaging, relatable way.
**Search Strategy:** Having searched Proquest, I turned to Web of Science, wanting to find research-heavy articles with a focus on influence in the field. Web of Science does not provide a subject thesaurus so I used a keyword search in the Topic field here. I then took advantage of the Sort by: Times Cited feature to find the most influential or splash-making articles with those keywords. This article ranked 11th and was only cited twice in Web of Science, but I was intrigued by the abstract’s mention of learning styles in relation to information seeking.

**Database:** Web of Science – Thomson Reuters

**Method of Searching:** Keyword Search

**Search String:** Topic=("information literacy") AND Topic=("secondary school" OR "high school")

**Scholarly/Refereed:** WoS does not provide a way to explicitly limit to peer-reviewed content, but I verified the classification with Ulrich's International Periodicals Directory and found that *Information Research* is a refereed, scholarly journal. The journal’s own website lists it as “an open access, international, peer-reviewed, scholarly journal”.

**Entry 5:**

**Abstract:** “Academic librarians are challenged to provide instruction to freshmen who demonstrated varied levels of research skills. To investigate how extensively particular information literacy skills are addressed at the secondary level, the authors distributed a nationwide survey to school library media specialists. Results reveal a common set of skills that
respondents perceive they teach in depth and a common set of skills that are perceived as neglected. Qualitative data identify hindrances to information literacy instruction in high schools. Avenues for collaboration between academic and school librarians are suggested as a means to closing the knowledge gap between high school and college.”

**Annotation:** Islam (an academic librarian) and Murno (a high school Library Media Specialist) collaborate to investigate information literacy instruction priorities from the perspective of high school librarians. Table 1 of the article illustrates the authors’ mapping of the “Information Literacy Competency Standards for Higher Education” (developed by the Association of College and Research Libraries for use in college libraries) with the “Information Literacy Standards for Student Learning” (developed by the American Association of School Librarians for use in elementary and high school libraries). A survey was based off of these two aligned standards; responses to the survey, distributed in 2004, depict the state of information literacy curricula across the United States and reveal the unevenness and lack of standardization of information literacy instruction.

**Search Strategy:** Library and Information Science Abstracts was the database I wanted to use for my initial search. It is specific to the Library & Information Science field, and during the Proquest unit in INFO 522 we saw the extensive infrastructure and careful control of this database’s vocabulary and fields. I took advantage of LISA’s thesaurus to guide me in my first search. Two of my concepts, “high school” and “young adult”, referred me to the preferred terms “Secondary School” and “Young people”, respectively.

**Database:** Library and Information Science Abstracts (LISA) - Proquest

**Method of Searching:** Controlled Vocabulary Search

**Search String:**
SU.EXACT("Secondary school children") OR SU.EXACT("Secondary school libraries") OR SU.EXACT("Young people")
SU.EXACT("Information literacy")

S1 AND S2:
(SU.EXACT("Secondary school children") OR SU.EXACT("Secondary school libraries") OR SU.EXACT("Young people")) AND SU.EXACT("Information literacy")

**Scholarly/Refereed:** The article was returned after I limited to Scholarly Journals as the source type in LISA, and checked off “Peer reviewed”. I verified the classification with Ulrich's International Periodicals Directory and confirmed that *College & Research Libraries* is a refereed, scholarly journal. The website of ACRL describes the journal as “a refereed journal using double-blind reviewing.”

**Entry 6:**

**Abstract:** “This study examined the relationship between curricula in secondary-level science classrooms, which support development of information literacy skills, and actual student skills. A vast body of research reflects deep concern with the level of information literacy skill development among secondary and post-secondary students. But even when educational curricula mandate skill development, many students are unable to demonstrate sophisticated information searching and critical evaluation skills. The findings of this study, which we based on analyzing information seeking tasks and conducting interviews with students in three biology classes in a large urban high school, demonstrated a similar lack of skills. Pressure on teachers to "teach to examinations"—that is, to focus on substantive content rather than on information literacy skills and information literacy skills deficits among teachers themselves—is a possible explanation for these results. The study is of particular interest to teachers of the curriculum applicable in the study context, but the broader implications of repeated indications of gaps in
students' information literacy skills are a significant indicator that schools must assume a larger responsibility for information literacy instruction. Leaving skill development to the post-secondary environment will not ensure that citizens are sufficiently skilled to participate fully in 21st century life, in workplaces or in their personal life contexts.”

**Annotation:** Describes the methods of a group of 15 to 17-year-olds in information gathering for a science assignment. Predictably, students are shown to rely on the Internet (Google in particular) for the majority of their sources and exhibit underdeveloped evaluation skills and concepts of authority and coverage. A less sophisticated study than Limberg’s (1999), focusing on the “what” and “how”, with less emphasis on students’ understanding of the assignment parameters, scope, and learning. Highlights, however, the ineffectiveness of a nominal mandate of information literacy skills instruction within a system where “valued knowledge” is marked by standardized test inclusion.

**Search Strategy:** After searching Proquest’s LISA and ERIC, I turned to Web of Science, wanting to find research-heavy articles with a focus on influence in the field. Web of Science does not provide a subject thesaurus so I used a keyword search here. I then took advantage of the Sort by: Times Cited feature to find the most influential or splash-making articles with those keywords. This article was cited seventeen times.

**Database:** Web of Science - Thomson Reuters

**Method of Searching:** Keyword Search

**Search String:** Topic=('information literacy') AND Topic=('secondary school' OR 'high school')

**Scholarly/Refereed:** WoS does not provide a way to explicitly limit to peer-reviewed content, but I verified *Library & Information Science Research* in Ulrich's International Periodicals Directory and found that it is a
refereed, scholarly journal. The journal’s own website lists it as “a cross-disciplinary and refereed journal”.

Entry 7:

Abstract: “To better understand how high school students apply their information literacy skills when conducting research and how these students carry out research projects, researchers asked a group of 289 high school seniors to complete an information literacy survey related to the research process. In addition, approximately ten percent of these students were randomly selected and asked to participate in an interview to provide more in-depth information about their perspectives on finding and using information. Results indicate the study participants were able to use library resources to locate and use information, that they used a variety of resources, and that they considered themselves successful library users. However, participants voiced a need for help in deciding which resources are best to use and how to identify important information from those resources. These high school seniors also wanted to learn more about how to use books for research. Although these students indicated they may need assistance when doing research, they rarely asked the school librarians for help. These findings are discussed in the context of the role of school librarians.”

Annotation: Ties in with Kuhlthau’s model (1991 & 2008) of the Information Search Process’s emotive stages. Together, these articles lend an understanding of what the stages of ISP look like and how the theoretical progressions are acted out. Surveys of a public school’s high school seniors collect data on both the emotional aspects of the research process, as well as judgments made and steps taken.

Search Strategy: Having found the article by Todd (2012) through a keyword search in ERIC, I realized from the title alone that this journal is probably a useful resource for articles related to information literacy instruction, teacher-librarian collaboration, and many other K-12 school-
related issues. I browsed through the volumes of this open-access journal on its own website to see what I could find on information literacy.

**Database:** N/A

**Method of Searching:** Browsing

**Search String:** N/A

**Scholarly/Refereed:** I checked the classification of *School Library Research* in Ulrich's International Periodicals Directory and found that the journal is refereed. The American Association of School Librarians’ website describes it as a “scholarly refereed research journal”.

**Entry 8:**

**Abstract:** “The article discusses the users' perspective of information seeking. A model of the information search process is presented derived from a series of five studies investigating common experiences of users in information seeking situations. The cognitive and affective aspects of the process of information seeking suggest a gap between the users' natural process of information use and the information system and intermediaries' traditional patterns of information provision.”

**Annotation:** Details Kuhlthau’s groundbreaking model of the emotional and active stages of the information search process (ISP), supported by years of research studies among three groups: high school seniors, college seniors, and adult public library patrons. The progression from uncertainty, to frustration, to optimism and confidence is found to hold true among all three user groups. Provides an immensely valuable framework in which academic and school librarians
can operate; knowledge of the stages and frustrations that students are sure to encounter during their research will allow for more effective intervention and instruction.

**Search Strategy:** Carol C. Kuhlthau’s work is mentioned extensively throughout the literature on information literacy and information seeking, especially that relating to secondary schools. I had not come across her articles in my keyword/controlled vocabulary searches in LISA or ERIC, and was definitely interested in finding some for this project. I searched for “Kuhlthau CC” using the Author Search in Web of Science, and sorted the results by Times Cited. This paper has the highest number by far: Times Cited 435 in the Web of Science.

**Database:** Web of Science – Thomson Reuters

**Method of Searching:** Author Search

**Search String:** Author=(Kuhlthau CC)

**Scholarly/Refereed:** *Journal of the American Society for Information Science* is now known as the *Journal of the American Society for Information Science and Technology*, in line with the Society’s name change from ASIS to ASIS&T in 2000. In both iterations, the journal has been peer-reviewed, according to Ulrich's International Periodicals Directory. ASIS&T’s website states that their journal is “a fully refereed scholarly and technical periodical.”

**Entry 9:**

**Abstract:** “New challenges arise for researchers and practitioners as we move away from concentration on the technology of searching, and turn our attention to using information for
problem solving and creativity in the workplace and daily living. This paper explores links between information behavior, information literacy and the impact of information, drawing on the author's research into the user's perspective of information seeking and use and the model of the Information Search Process (ISP). The ISP model describes thoughts, actions and feelings in six stages of interacting with information to construct meaning. Central to the ISP model is the finding that information commonly increases uncertainty in the early stages of the search process. Increased uncertainty creates a zone of intervention for intermediaries and system designers that support users in their quest for seeking meaning from information. Innovative approaches to interaction between people and information are needed to bridge the divide between information behavior, information literacy and impact of information in order to address issues of the twenty-first century.”

**Annotation:** Updates and builds on the formative ISP model of Kuhlthau’s 1991 paper, taking into consideration the advances in information technology and the LIS world’s emerging focus on information literacy instruction. Particularly within the context of the latter, a crucial new element is added to the principle of *uncertainty* during the search process: intervention zones, the stages in the ISP where librarian guidance is most effective.

**Search Strategy:** Carol C. Kuhlthau’s work is mentioned extensively throughout the literature on information literacy and information seeking, especially that relating to secondary schools. I had not come across her articles in my keyword/controlled vocabulary searches in LISA or ERIC, and was definitely interested in finding some for this project. I went back to LISA and searched in the Author field for Kuhlthau, C., limiting to peer-reviewed sources.

**Database:** Library and Information Science Abstracts (LISA) – Proquest

**Method of Searching:** Author Search

**Search String:** AU(Kuhlthau, C)
Scholarly/Refereed: The article was returned after I limited to Scholarly Journals as the source type in LISA, and checked off “Peer reviewed”. I verified the classification with Ulrich's International Periodicals Directory and confirmed that *Libri* is a German scholarly, refereed journal. The journal’s website outlines its peer-review process on the “Instructions for Authors” page.

Entry 10:

Abstract: “Reports results of a research project on information seeking and use in a learning context. Theoretical frames were found in library and information science (LIS) use and user studies and in phenomenographic learning theory. The empirical study was conducted in a naturalistic setting with a group of 25 high school seniors. Phenomenographic method, designed to investigate variation in people's ways of experiencing phenomena in the world, was used. Three major ways of experiencing information seeking and use were identified: fact-finding; balancing information in order to make correct choices; scrutinizing and analyzing. The variation in information seeking and use interacted closely with variation in learning outcomes. These findings form a basis for further research on variation in users' ways of experiencing the content of information. They also provide a basis for didactic development of information literacy instruction.”

Annotation: One of the earliest articles included in my bibliography, and among the most thought provoking. Limberg’s research builds upon the limited body of qualitative, context-based user studies, focusing on high school students’ reactions to and conceptions of phenomena, not the phenomena themselves (e.g. fact-finding). The article demonstrates that research on student conceptions—of what information they *think* they need to find, what they *think* is
relevant, etc., as well as the process of how students use the information located—is as important to understanding information seeking as the typical focus on structure and process.

**Search Strategy:** Library and Information Science Abstracts was the database I wanted to use for my initial search. It is specific to the Library & Information Science field, and during the Proquest unit in INFO 522 we saw the extensive infrastructure and careful control of this database’s vocabulary and fields. I took advantage of LISA’s thesaurus to guide me in my first search. Two of my concepts, “high school” and “young adult”, referred me to the preferred terms “Secondary School” and “Young people”, respectively.

**Database:** Library and Information Science Abstracts (LISA) - Proquest

**Method of Searching:** Controlled Vocabulary Search

**Search String:**
SU.EXACT("Secondary school children") OR SU.EXACT("Secondary school libraries") OR SU.EXACT("Young people")

SU.EXACT("Information literacy")

S1 AND S2 :
(SU.EXACT("Secondary school children") OR SU.EXACT("Secondary school libraries") OR SU.EXACT("Young people"))) AND SU.EXACT("Information literacy")

**Scholarly/Refereed:** The article was returned after I limited to Scholarly Journals as the source type in LISA, and checked off “Peer reviewed”. I verified the classification with Ulrich's International Periodicals Directory and confirmed that *Information Research* is indeed a refereed, scholarly journal. The journal’s own website lists it as “an open access, international, peer-reviewed, scholarly journal”.
Entry 11:

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

**Annotation:** This article operates on a unique premise, seeking to bridge the gap between the trade literature’s model of description and recommendation and the scientific literature’s mode of analyzing phenomena. The authors reanalyze empirical data from past studies and draw real-world conclusions on the implications for best practices in information literacy instruction. The overarching theme, echoed in many articles in this bibliography, is a necessary movement from low-level procedural teachings to high-level question formation and evaluation.

**Search Strategy:** After being fascinated by Louise Limberg’s 1999 study, I wanted to find some of her more recent work. I turned to Web of Science and searched by Limberg’s name.
Database: Web of Science – Thomson Reuters

Method of Searching: Author Search

Search String: Author=(Limberg, L)

Scholarly/Refereed: I checked Libri’s classification in Ulrich's International Periodicals Directory and confirmed that this is a German scholarly, refereed journal. The journal’s website outlines its peer-review process on the “Instructions for Authors” page.

Entry 12:

Abstract: “The twenty-first century is marked by increased challenges in education and limited resources to address them. A solution proposed within school librarianship is teacher and librarian collaboration. This qualitative study examines the practices of highly collaborative teachers and librarians and identifies mechanisms that operate within schools to facilitate high-end collaboration. Five broad themes emerge from the data and identify essential elements of successful collaboration: school culture, positive attributes of collaborators, communication, management, and motivation. This study adds to the body of knowledge of teacher and librarian collaboration by providing empirical support for collaborative practices described in school librarianship literature. The model of teacher and librarian collaboration that emerged from the data provides a preliminary framework for high-end collaborative environments in schools. Of particular interest were findings regarding time management. Participants indicated that in spite of limited time, time issues are overcome when collaboration is highly valued.”
Annotation: Collaboration between school librarians and teachers has long been encouraged in the literature (and the need for greater collaboration stressed), but Montiel-Overall offers the first major study examining the nature of teacher-librarian collaboration in schools. Puts flesh onto the author’s theoretical framework of a successful collaborative model through extensive empirical study of teacher and librarian participants’ formal and informal discussions.

Search Strategy: The article was mentioned in the introductory literature review of Francke & Sundin (2012). As the importance of teacher-librarian collaboration is stressed repeatedly in much of the research in this bibliography, it was a subtopic that I definitely wanted to look into. The authors’ description of Montiel-Overall’s study sounded perfect, so I located the citation in their bibliography and searched for it using Summon on the Drexel University Libraries website. Within Summon’s Advanced Search I used the author and title fields, and then used the “Full Text Online” link when the desired article was returned as the first result.

Database: The citing article (Francke & Sundin 2012) was discovered in Web of Science. Summon was used to locate the cited article in ScienceDirect.

Method of Searching: Footnote Chasing

Search String: Referenced in:

Scholarly/Refereed: I verified Library & Information Science Research in Ulrich's International Periodicals Directory and found that it is a refereed, scholarly journal. The journal’s own website lists it as “a cross-disciplinary and refereed journal”.
Entry 13:

Abstract: “Past research on source-based writing assignments has hesitated to scrutinize how students actually use information afforded by sources. This paper introduces a method for the analysis of text transformations from sources to texts composed. The method is aimed to serve scholars in building a more detailed understanding of how students work with sources, for example, in paraphrasing, summarising and synthesising information.

Method: The proposed method is introduced by presenting its domain, procedure and justifications, and by sketching a coding framework for text transformations. The characteristics of the method are demonstrated by reporting a case study: the use of information in seventeen Wikipedia/wiki articles written in a collaborative assignment by upper secondary school students.

Analysis: The domain of the method is represented by characterising its goal and application area. The procedure of the method is represented as an ordered set of operations and its use is demonstrated in the case study. The justifications of the method are addressed by discussing appropriateness, validity, reliability and efficiency issues related to the method.

Results: The findings of the case study demonstrate that new research questions can be answered by applying the method. In terms of research economy, the method is reasonably efficient. No major problems related to the validity and reliability of the method were observed.

Conclusions: The proposed method is a novel research instrument for the study of information use. It opens up interesting possibilities to analyse text transformations in source-based writing and expand our understanding of the core processes of information use.”

Annotation: An innovative method of text analysis is described, used to determine the information use by high school students in a research project. The resulting data supports the view that plagiarism and shallowness (or lack) of reinterpretation is more common with digital information sources. The sheer number of hours spent deconstructing the written product,
analyzing sentence synthesis, and locating omitted sources is one obvious limitation of this model, but room exists for easy adaptation to classroom projects of smaller scope.

**Search Strategy:** After my initial search in LISA, I switched to ERIC since the topic of information literacy in school libraries is part of educational discourse as well. Perhaps ERIC would contain relevant journals and resources that LISA does not. During the Proquest unit in INFO 522 we saw the extensive infrastructure and careful control of this databases’ vocabulary and fields. I took advantage of the thesaurus to guide me in my first search. There I found that ERIC uses both “high school” and “secondary school” in its subject terminology, and “information literacy” was a preferred term which also led me to “information seeking”.

**Database:** ERIC - Proquest

**Method of Searching:** Controlled Vocabulary Search

**Search String:**
SU.EXACT("Secondary School Curriculum") OR SU.EXACT("Secondary Education") OR SU.EXACT("School Libraries") OR SU.EXACT("Secondary Schools") OR SU.EXACT("High Schools") OR SU.EXACT("High School Students")

SU.EXACT("Information Literacy") OR SU.EXACT("Information Seeking")

S1 AND S2:
(SU.EXACT("Secondary School Curriculum") OR SU.EXACT("Secondary Education") OR SU.EXACT("School Libraries") OR SU.EXACT("Secondary Schools") OR SU.EXACT("High Schools") OR SU.EXACT("High School Students")) AND (SU.EXACT("Information Literacy") OR SU.EXACT("Information Seeking"))

**Scholarly/Refereed:** The article was returned in ERIC after I limited to “Peer reviewed” sources. I also verified the classification with Ulrich's International Periodicals Directory and found that Information
Research is a refereed, scholarly journal. The journal’s own website lists it as “an open access, international, peer-reviewed, scholarly journal”.

Entry 14:

Abstract: “This paper presents selected key findings of the first phase of a multiphase research study commissioned by the New Jersey Association of School Librarians (NJASL) in 2009 and undertaken by the Center for International Scholarship in School Libraries (CISSL) at Rutgers, The State University of New Jersey. The overall research agenda seeks: (a) to construct a picture of the status of New Jersey's school libraries and the work of school librarians in the educational landscape of New Jersey, (b) to understand the contribution of quality school libraries to education in New Jersey, (c) to understand the contextual and professional dynamics that inhibit and enable school libraries to contribute significantly to educational agendas, and (d) to make recommendations to key stakeholders to develop a sustained and long-term program of capacity-building and evidence-based continuous improvement of school libraries in New Jersey.”

Annotation: Complements both Montiel-Overall’s study of teacher-librarian collaboration and Islam and Murno’s survey of information literacy standards prioritized in schools. The latter’s report of least-addressed information literacy standards mirror those listed here, echoing the idea that the finding process is often attributed to librarians, while the meatier functions, evaluation and creation, are the domain of classroom teachers.

Search Strategy: I was intrigued by the messy lack of standardization depicted in Islam and Murno’s survey of school library media specialists (2006), and hoped to find similar, perhaps more recent, studies. I went back to ERIC and this time tried a keyword search to include the “survey” concept in research on information literacy in school libraries.
Database: ERIC - Proquest

Method of Searching: Keyword Search

Search String: (information N/3 literae*) AND survey AND "school librar*"

Scholarly/Refereed: The article was returned in ERIC after I limited to “Peer reviewed” sources. I also verified the classification with Ulrich's International Periodicals Directory and found that School Library Research is a refereed, scholarly journal. The American Association of School Librarians’ website describes it as a “scholarly refereed research journal”.
Personal Reflection

As is usually the case with any large-scale academic project, the research process was enjoyable and came easily to me. The search-and-find stage has always my favorite part of schoolwork; I could happily investigate, gather, read, and draw connections for weeks and weeks. It is the focus-and-synthesize process that always challenges me!

This project provided an interesting foray into the world of research methods and studies. Coming from a background about as humanities-drenched as possible, it was very daunting to find the abstracts packed with scientific jargon like “phenomenographic” (Limberg 1999). I also found that, while APA style was tricky to get used to at first, it makes complete sense within the different “culture” of scientific discourse (omissions of page numbers in in-text citations, for example: here the emphasis is on building on conclusions from previous research, rather than referencing single moments of insight, as you see in the humanities).

One of the biggest challenges with this assignment was the difficulty of knowing when to stop chasing footnotes. I wanted to be thorough, following the family tree of authors back and back through every influential idea. First, there is not enough time in the quarter to accomplish this, and secondly, doing so would soon lead me out of the realm of relevant research for my topic. While much of the research done before the days of pervasive internet access and digital information sources is still relevant, I decided to stop with two studies dating from 1991 (Kuhlthau) and 1999 (Limberg). In the case of C. C. Kuhlthau, her most influential studies did not come up during my initial searches because they were written before the phrase “information literacy” came into vogue, in the late 1990s. Kuhlthau’s own writings and focus have evolved over the years, as well, as she studied the processes of information seeking and information use—two important facets of information literacy.

Ironically, after completing this project, I have the exhilarating feeling that my focus on this area of research has just begun. I have gathered and begun to digest much information on information literacy curriculum-building. I have gained an entry-level understanding of the science behind information search processes, and the patterns of information use, in high school students; the backdrop of challenges and research questions addressed over the last twenty years; as well as emerging issues in the field. This research has planted some seeds in my mind for initiatives in the independent school library where I spend the academic year. I am actually looking forward to beginning-of-the-year faculty meetings in August!