Information Literacy Seven Corners: Improving instruction by reviewing how librarians, faculty culture, professional literature, technology, and today's college students converge

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Abstract

This article reviews library and education literature, as well as the author's personal observation of undergraduate information literacy (IL) instruction sessions, and provides a range of ideas and suggestions for ways in which librarians can increase the effectiveness of IL instruction sessions. The author asserts that there are five major influences that present challenges and opportunities to librarians who wish to increase authentic collaboration with faculty for course-integrated instruction that more fully addresses the higher-thinking skills true information literacy requires. In today's world of expanded electronic access to information and the impact ubiquitous Internet searching has had on students entering or returning to post-secondary education, new strategies must be employed to facilitate instruction that goes beyond procedural skills — the conceptual aspects of information literacy and critical thinking must come to the forefront of library and classroom instruction.

Introduction

Across the United States, in towns large and small, are areas known as "Seven Corners" where the junction of five roads creates seven corners. These unique intersections come into being when two distinct towns or communities expand, eventually meeting each other in an unplanned and slightly awkward manner. These intersections can be quite confusing for drivers, pedestrians, and even the businesses lining each corner. Traffic signals here are distinctly different from those at familiar four-corner intersections, requiring special settings to allow vehicles coming into the intersection from five separate directions to navigate safely and smoothly — traffic flow must be directed to each of the other four available directions. Entry into parking lots to patronize businesses is difficult to identify and access depending on which direction one is coming from.

The current state of information literacy (IL) instruction could be described as a Seven Corners area, replete with often-confusing signals, limited visibility, and difficult access. The five roads converging at this one intersection are Librarian Lane, Faculty Culture Way, Technology Boulevard, Publication Place, and Undergraduate Street. All of these thoroughfares converge into one spot — Information Literacy Seven Corners — as the exponential expansion in information meets continually changing computerized access.

This paper draws on observations recorded during five separate information literacy instruction sessions for university undergraduates conducted by five instructional librarians from January to March, 2009. This first-hand observation highlighted some of the difficulties that exist at IL Seven Corners, and literature reviews in both library and education journals supplemented and expanded upon the unique challenges currently being faced.

Librarian Lane

The American Library Association (ALA) and its two education divisions saw this intersection as it was developing and designed traffic signals in an attempt to coordinate the flow. ALA published "The Final Report from the Presidential Committee on Information Literacy" in 1989, the American Association of School Librarians (AASL) published "Information Literacy Standards for Student Learning" in 1998, and the Association of College and Research Libraries (ACRL) published "Information Literacy Competency Standards for Higher Education" in 2000. As attempts to quantify and define what information literacy consisted of, these documents clearly linked libraries and librarians with educators, knowing that "information literacy is not learned through osmosis; it must be taught" (Hylen, 2005, p. 22).

In the years since the publication of these documents, librarians from all levels of educational institutions have attempted to 'clean up' the confusion at IL Seven Corners by expanding traditional bibliographic instruction to encompass information literacy.

Mapping the observations from one specific IL instruction session onto the ACRL (2000) Information Literacy Competency Standards for Higher Education illustrated that there was a blend of access-to-information instruction and use-of-information instruction. While ACRL Competency Standards 1 and 2 were addressed in all five of the instruction sessions, Standards 3, 4 and 5 were not included to the same degree. Following is a detailed description of which specific portions of the standards were included in one of the instruction sessions observed.

The theme of Standard 1 is "knowing, and determining the extent of, the information needed." All of the instructions observed covered this area extensively. All of the following were suggested in the documented observation:

- (1.1C) use general information sources to provide increased familiarity with a topic
- (1.2A) think about who knows, writes, and talks about a certain topic
- (1.2B) use relevant subject and discipline-related terminology
- (1.2C) multiple formats are appropriate to use in research
- (1.2D) identifying the purpose and audience of potential resources is important
- (1.3A) needed information may be available beyond local resources through utilization of Interlibrary Loan
- (1.4A) review initial information and recognize the need to clarify, revise, or refine the search.

Standard 2 deals with procedural issues of accessing information. The documented instruction included:

- (2.1C) how to determine the period of time covered by a particular source in a database
- (2.2C) how to identify search terms likely to be useful in controlled vocabulary lists
- (2.2F) how to implement a search using organizational structure of material to locate pertinent information
- (2.3C) how to access online or personal services such as ILL, professional associations, etc.
- (2.4A) how to identify elements of a citation such as title, abstract, source, and date of publication to determine quality, authority, and relevance of results
- (2.5C) how to differentiate between the types of sources and elements of their citations.

Standard 3 outlines evaluation of information and its sources, Standard 4 deals with presentation of research, and Standard 5 covers economic, legal, and social issues surrounding the use of information. The only aspects of Standards 3, 4, and 5 covered in the IL instruction session were:

- (3.4E) questioning the accuracy of a source and the reasonableness of its conclusions, and
- (5.2B) using approved passwords and other forms of ID for access to information resources.

It is clear that procedural skills received substantially more attention than conceptual or higher-order thinking skills did in the instruction session. Instruction focusing on the last three Standards would more fully engage and develop conceptual skills.

Technology Boulevard

The Information Age has boomed, and the quantity of information available can be mind-boggling. Internet use has expanded to 72.5 of the American population as of 2008 ([Miniwatts Marketing Group, 2009](#)). According to Carlson ([2003](#)) there were 15,652 websites discussing information overload (p. 170), and today a Google search for the phrase "information overload" can result in about 1,770,000 pages. Staff writers at Inc. noted in 1999 that the projected increase in the number of URLs between 1997 and 2002 was 7,349,000 ([Inc Staff](#)). More recently (2008), software engineers at Google noted that "our systems that process links on the web to find new content hit a milestone: 1 trillion (as in 1,000,000,000,000) unique URLs on the web at once!" ([Alpert & Hajaj](#)).

Access to scholarly journals in digital form has become the standard in post-secondary education, and locating articles has changed dramatically from the days of print indexes. The growth and ubiquitous nature of the Internet, along with the proliferation of electronic databases containing scholarly publications, do require that some procedural instruction (Standard 2) take place. Electronic databases share many of the same functions — such as advanced search, saving citations to a folder, emailing articles to self, and exporting citations — but each vendor interface is organized differently, so there are distinct procedural skills required to use them effectively.

Beyond procedures, however, lie conceptual aspects such as identifying the most effective retrieval systems; developing search strategies and redefining them when necessary; critically evaluating information and sources for reliability, validity, accuracy, authority, timeliness, and point of view or bias; understanding copyright law and fair use principles; integrating new information with previous knowledge; formulating opinions and participating in discourse with others; and determining the most effective method of presenting research findings.

The observed instruction sessions covered both procedures and concepts of accessing information; however, the conceptual instruction was minimal. For example, three or four retrieval systems were demonstrated (OPAC, WorldCat, journal database/s, and Google) — procedural instruction — and students were allowed time to conduct searches in each and consider the appropriateness of their results — conceptual instruction. The students, however, were not asked to consider the characteristics of retrieval systems or select the most effective retrieval systems; the ones demonstrated were presumably selected ahead of time with this in mind by the librarian conducting the session.

The conceptual skills of defining and developing topics and search strategies were not a significant part of the instruction, even though these are some of the most difficult tasks in the research process ([Kuhlthau, 1989](#)). While it is possible that some students had already developed individual information-seeking strategies at the early undergraduate level, it is not likely ([Leckie, 1996, p. 205](#)).

The current state of technology allows for exceptional ease in taking excerpts directly out of documents and various forms of media. Discussion of copyright law and fair use principles in the context of scholarly research is another important conceptual aspect of IL that was not addressed in the instructional sessions observed.

Internet search capabilities allow students to bypass librarians, who have historically represented expertise in evaluating sources. Individuals must now use additional critical-thinking in their search process to evaluate the nature and authority of the results. In many cases it can be extremely difficult to differentiate an authoritative website from a spoof website (Bradley, 2006).

Additionally, the presentation of student research has morphed from simple type-written papers to an expectation for students to use technology-driven software for word processing, charts and graphs, visual overhead presentations, image creation and modification, and even audio/video creation and editing. Students today not only use ever-changing technology in the gathering stage but also in the presentation stage of research.

It is safe to assume that the rapid technology changes experienced in the last four decades will continue long into the future, necessitating high-speed adaptation as Technology Boulevard charges into the IL Seven Corners intersection.

Faculty Culture Way

Collaboration between librarians and faculty has proven to be a successful strategy to enhance IL instruction (Mackey & Jacobson, 2005, p. 140). This has been especially true when IL instruction is content-centered and tied to specific curricula (Grafstein, 2002). According to Head and Eisenberg (2009), students need context when undertaking research, both academic and personal (pp. 5-10). Without being connected to and addressing an actual research need, IL instruction is ineffective and easily forgotten because of the lack of context.

There were differing levels of faculty/librarian collaboration evident in the observed IL instruction sessions, ranging from the professor being absent to the professor conducting the instruction. The most effective session observed clearly showed collaboration between the librarian and the professor. The librarian had no input into creation of the assignment, but there was clear communication between the two of them as to specifics of the assignment and expectations for the instruction session. Additionally, the professor was present, attentive, and proactive throughout the session. Faculty behavior related to IL instruction can demonstrate the level of importance the professor places on students making use of librarians and library research assistance. During the periods when students were given time to conduct their own searches, both librarian and professor made themselves available to assist individuals with questions and to review what all the students were doing.

Additionally the professor had assigned groups of two to three students to work together on the research. Group or team work allows for those with varying levels of skill to assist each other through the process, thus maximizing their own and each others' learning (Keyser, 2000, p. 36). It was evident in this instruction session that teammates were truly working together to search retrieval systems, share the found results, question the appropriateness of individual results, and discuss changes in search terminology.

Faculty Culture Way enters the IL Seven Corners intersection, bringing its own traffic patterns with it. According to Hardesty ([1995](#)), faculty culture encompasses various expectations of responsibility, stature, and behavior. Professors focus on their area of expertise and emphasize research, content, and specialization. Unless specifically sought out, professors do not take courses on how to teach within their respective graduate programs. (Actually, this is true of librarians as well, making the pedagogy of instruction a relative unknown to those providing IL instruction to undergraduate students.) Many professors view their status as higher than that of librarians, even when librarians are given faculty status. Frequently faculty feel that while it is their responsibility to teach content, it is the librarians responsibility to teach library skills, thus indicating a perceived divide between them ([Hrycaj & Russo, 2007](#)).

Most academic professors experience and/or feel extreme time constraints due to their teaching load, the research and publishing that are required of them, and service activities in their field. Thus classroom time is considered a valuable commodity with scarcely enough time available to cover the desired content, much less to turn some over to librarians for IL instruction. At most, the standard 50-minute IL instruction session is all they are willing to give, and sometimes it is scheduled when the professor is away at a conference. In the case of one session, a librarian had been embedded in the professors course during the prior year. This year the professor chose to conduct the IL instruction, asking the librarian to serve as back-up help during the hands-on periods. One could infer that this professor felt he had learned everything the librarian knew about IL the previous year and could now remain the one 'in charge' of the classroom period. Both the librarian and the session observer found this to be a decidedly unsuccessful IL instruction session that should not be repeated.

Librarians also hold their share of attitudes about faculty that undermine the smooth flow of collaboration at IL Seven Corners. According to Given and Julien (2005), librarians exhibit a territorialism with respect to the library—especially its instructional places—quite similar to the territorialism which professors exhibit with respect to their classrooms and students ([p. 31](#)). While faculty members frequently believe it is the librarian's responsibility to teach library skills, librarians frequently believe that faculty should take a larger role in IL instruction, should know library resources, and should prepare assignments that develop basic library skills. The level of disparity between the two sets of expectations can create a challenge to collaboration.

Much of the professional literature in both library and higher education journals still places the onus for IL instruction on librarians, even while strongly suggesting that collaboration between librarian and professor is greatly preferred.

Publication Place

Information literacy is a phrase that was first coined over 25 years ago ([Gilton, n.d.](#)). Research done in 2006 suggests that, of the numerous articles about information literacy written between 2000 and 2005, most were published in library literature; few appeared in non-library journals, i.e. those intended for educators in higher education ([Stevens, 2007](#)). A limited re-creation of this

research revealed that from 2006 to 2008, the same conditions existed. Stevens contended that librarians are in fact preaching to the choir and should make greater efforts to publish in discipline-specific journals to reach the intended audience: faculty. Having found that this lack of publishing outside of library literature still exists, it is clear that this remains a verdant area of opportunity for librarians.

Albitz (2007) suggested that, to some extent, library literature and higher education literature simply do not use the same language to describe a similar topic. Librarians use the phrase 'information literacy,' which includes both skills and higher level cognitive activities, while educators use the phrase 'critical thinking.' Definitions of information literacy in library literature are more uniform and skill-based than definitions of critical thinking, basically because academic disciplines disagree as to what 'critical thinking' actually means. Albitz, however, believes that these two concepts overlap enough to believe they are not inherently different (p. 107). Even though there are differences in the skill sets required for each, it could be said that an information literate person must specifically use critical thinking, and that a critical thinker must be information literate in order to be fully informed (p.101).

Both of these strategies — publishing in non-library journals and expanding the nomenclature — are worthy of pursuit; however, the efforts involved will not be easy. The disconnect in perceptions of librarians and professors is well-established — having existed for over 25 years — and the problem is amplified by the entrance of Undergraduate Street into the intersection.

Undergraduate Street

The Internet and Google-type searching are ubiquitous in the lives of young people entering colleges and universities today. The now defunct Netscape web browser set the stage in 1993, and the ease of searching the vast amount of information located in digital form on the Internet has had 16 years to enter the mainstream lifestyle of youth and adult Americans alike. The eighteen- to twenty-year-old college undergraduates of today have grown up with computer technology and have developed some information-seeking habits of their own (Dresang, 2005, p. 180). These habits generally do not take scholarly research into consideration, so the ongoing need for IL instruction simply must meet the new 'Net Generation' on their terms. "What is particular here is the need to adapt the style of communication to the form that connects with the style that the net generation have absorbed by the intense interaction they have had with the world of ICT (Information and Communication Technology) in the most formative stage of their lives" (Clark, 2008, p. 13).

As for the faculty's exposure to scholarly research, Feldman and Sciammarella (2000) write, "Many teaching faculty members had completed several degrees before the information technology explosion. They used printed indexes for their research. Now, they must learn a whole new set of rules for doing research … they are not always eager to learn the new skills" (p. 496). Unfortunately, the assumptions of faculty (many with Ph.D.s) as 'expert researchers' and

the reality of young undergraduates, especially in regard to scholarly research, as 'novice researchers' are miles apart, as can be seen in the following table.

Comparison of Attributes and Perceptions of "Expert" and "Novice" Researchers	
Expert Researcher *(Faculty)*	*Novice Researcher* *(Undergraduate Students)*
Overall Attributes	
Have an in-depth knowledge of their discipline. Have access to materials students never will.	First exposure to discipline (via textbook, reserve materials, lectures).
Aware of important scholars working in particular areas.	No sense of who is important in a particular field.
Participate in a system of informal scholarly communication. Heavy reliance on personal contacts in their discipline.	Do not know anyone who actually does research in the discipline (except for professors) so have no notion that informal scholarly network exists. Have none/few personal contacts in the discipline.
View research as a non-sequential, non-linear process with large degree of ambiguity & serendipity.	Level of cognitive development may find ambiguity and non-linearity quite threatening.
Relatively independent.	Dependent on direction from others.
Have developed own personal information-seeking strategies.	Do not think in terms of an information-seeking strategy, rather in terms of a coping strategy. Do not want to search — want to find.
Libraries may/may not be a large part of strategy.	View research as a fuzzy library-based activity required to complete coursework.
Follows citation trails.	Find it difficult to build and follow a citation trail. May feel that following a citation trail is cheating in some way.
Used to sophisticated discussions about research with colleagues and graduate students. Attend and or present at important conferences in their discipline.	Have never attended a scholarly conference do not know what happens there or whether they are actually valuable. Wonder if presentations/results are shared beyond conference.
Goal orientation: get tenure, get published, remain current	Goal orientation: pass course, get a good grade. Often unsure what is required to do so

Perceptions of: Process and Authority	
Conducted research to obtain degree-status to become academic professor/lecturer, so are familiar and comfortable with the process.	Misconception/distrust of the research process — seems mysterious. Do not know how faculty/others actually conduct research. Wonder if there is a 'right' way to do research.
Expect students will gain some feeling for the dimension of an entire issue through general introductory reading about a large topic.	Do not anticipate reading widely to reach knowledge saturation on a topic. Wikipedia considered unique and indispensable source for context, overview, vocabulary/terminology, important individuals in topic. Use Wikipedia citation links to begin research.
One must have patience and faith in the process: read widely without knowing what will come out of it — at some stage in the process one will reach a point of saturation where the same concepts/issues recur, thus informing research opportunities.	Intolerant of the uncertainty inherent in the process. Limited confidence in their own ability to complete research projects. Seeing the same concepts/issues recur is perceived as nothing new being written.
Expect students will evolve some ideas on their own about topic and can narrow in on specific concerns (may require further reading).	Do not know how to narrow either reading or the topic and find it extremely difficult. Experience both information overload and too much irrelevant information. Have difficulty synthesizing information.
Presume one would *want* to be able to speak with some authority on an issue, so would read widely.	Not likely to feel very authoritative even after having gone through the process.
Scholarly Literature	
Full knowledge of different kinds of scholarly sources (dictionary, encyclopedia, textbook; monographs; bibliographies, periodicals, newspapers, government documents, monographic series) and how/when they should be used.	Unaware of the role of different kinds of scholarly sources, therefore cannot use scholarly sources appropriately.
Understand how scholarly sources are produced and for what purpose.	Only a vague awareness of how scholarly sources are produced. Do not consider themselves part of the process.

Understand different types of authors who are writing for different audiences and purposes.	Have great difficulty judging the difference between types of authors, audiences, and purpose.
Develop and follow citation trails.	Reading different types of citations is challenging. Often reject appropriate citations because of not understanding nature of the source or title does not match their concept of topic.
Consider current published materials to be building upon previous research. Have identified seminal articles and authors.	Expect to locate current materials and struggle with knowing exactly what that means. Do not know how to identify seminal articles on a topic.
Subscribe to favorite journals in discipline and are familiar with discipline-specific databases.	Difficulty choosing database/s needed for a project.
Research and Critical Thinking	
Full understanding of how research proceeds, develops, and changes over time. Know that researchers around the world are working on an issue. Aware that a readily accessible record of research exists.	Do not possess a vision of a scholarly network. Need 'big picture' context. Do not have a sense of significant mass of research findings appearing in certain journals over time.
Possible and *important* to find out who is doing what research.	Do not know how to tap into research records to determine who is researching what.
Depending on age/experiences, may have limited knowledge of how to effectively search library databases. May have researched using print indexes with controlled library vocabulary.	Have a superficial view of databases — view them as a large mixed pot without considering individual resources located within. Do not understand or think in the language of the library world. Frustrated when finding citations online but then unable to access/find full-text.
Common acceptance that scholars will disagree with each other and are frequently critical of another's approach or findings.	May not have reached level of cognitive development to cope with alternative views. May ignore alternate views in favor of what is perceived as the 'right' perspective. Still looking for the 'perfect source' — believe it exists somewhere.

Students have, or will begin to develop, scholarly personal information-seeking strategy, such as: • Identify a few scholars from background reading • Read their work & see who they cited • Follow up with some of those citations • Follow up on citations from background reading • Examine and evaluate for suitability • Ask professor	May not have scholarly information-seeking strategy and do not necessarily develop without assistance. However, do have personal information-seeking or workaround strategies: • Use self-taught techniques from online personal information-seeking experiences. • Use the library; ask friends, family, classmates, and people in the community (social networking). • Use whatever sources are familiar first, and may continue to use even when inappropriate reworking skills learned in high school. • Procrastinate until 2-3 days before assignment is due.
General Information-Seeking Skills	
Anticipates the knowledge to be gained from information gathering regards mechanics as inconsequential (it will be obvious what one should do, given what one needs).	Do not have entire retrieval universe from which to choose, therefore cannot discard certain options due to lack of experience in using all. Are content with resources that 'safistice' (hybrid of 'satisfy' and 'suffice') minimum requirements to achieve objective.
Feel library OPAC is likely going to be fairly useless for a narrow topic.	Have difficulty using even one retrieval mechanism (library OPAC) may continue to use even without retrieval of relevant material.
Go straight to journal literature.	May believe 'everything is on the Internet.' Over-estimate own information-seeking capabilities.
Are familiar with authors and language used in their discipline so can conduct focused searches.	Do not know what authors to search for so use subject searching (large results for broad topics). Find it difficult to articulate topic (with alternative words), decide between keyword or controlled vocabulary. Controlled vocabulary is different in each database.

Librarians	
Librarians are nice people who are there to help, but are often not considered peers.	Do not know who the librarians are. Do not understand what librarians do.
Dont need/use librarians much because already have an idea of what kinds of material they need to find.	Library instruction is helpful at the time received, but difficult to recall for later research needs. Reluctant to request assistance because either believe it is inappropriate or are too intimidated to initiate.
Librarians are there if researcher runs into trouble, but the ultimate responsibility for research is with the scholar.	Consider librarians "navigational sources," "information coaches," "sense-makers" for context. Infrequently consult librarians for search terms.
Do not imagine the continuum of problems that students have in using academic library.	Library anxiety (resources and access) is common and feelings described when receiving course-related research assignment are *angst, dread, fear, stressed, tired, annoyed, overwhelmed, confused*.

Note: Adapted from Leckie (1996), Head & Eisenberg (2009), and A. Head, personal communication, June 23, 2009.

It is clear that there are many areas for librarians to address gaps between the assumptions of professors and early undergraduate students. By comparing the two positions, librarians can identify unique ways in which they can bridge this great divide and smooth the IL Seven Corners area for the future.

In addition, more and more adults are returning to college classrooms and online courses to either complete previously abandoned degree programs or seek education in order to change careers (Kolowich, 2009). This can bring great challenges to both librarians and professors, as "there is a reasonable possibility that an adult student, through work activity or online community interaction, could be better informed than the teacher in a given topic within a course" (Clark, 2008, p. 14).

Conclusion

Library literature has actually provided many suggestions for addressing the confusion at IL Seven Corners, however these issues have not, until now, been gathered into a comprehensive whole. There are five distinct thoroughfares entering this intersection; each entailing multiple factors to take into consideration.

Librarians (Librarian Lane) must continue to engage in collaboration with faculty, especially looking for ways to provide information literacy instruction in connection with meaningful research assignments within the context of the course. One way to encourage faculty to embrace the importance of information literacy instruction is to publish (Publication Place) in the discipline-specific journals that faculty read. Another is to liberally sprinkle the phrase 'critical thinking' into the dialogue about information literacy. Faculty may not be teaching Kuhlthaus' "Model of the Information Search Process" ([1989](#)), but they may be actively providing instruction on critical thinking skills. Further research of non-library literatures use of the phrase 'critical thinking' as a substitute for 'information literacy' may provide additional insights. It is entirely possible that connecting information literacy and critical thinking skills in the minds of faculty members could be just the ticket for them to assume a larger role in its instruction.

Faculty members (Faculty Culture Way) have their own attributes and perceptions of research and have developed personal, discipline-specific information-seeking strategies. Librarians can look for ways to bridge the differences between faculty perceptions and early undergraduate realities, as well as the wide range of technology skills found in returning adult students. Whether that be through direct conversation with faculty or innovative outreach to students, there is much to explore in this area.

Technology (Technology Boulevard) is an ever-present and ever-changing reality with which we must all engage. There are many experiential aspects of early undergraduates, who have grown up digital, and of returning adult students, who did not, (Undergraduate Street) that librarians can address through methods of instruction and provision of access to research databases. With the growth of Google Scholar as an effective means to locate (but not necessarily obtain) scholarly literature, it was recently suggested by Bell ([2009](#)) that library websites should change from the link-laden portal model to one that improves usability with tabbed interfaces, simple search boxes, and the ability for more personalization so that the users of today will find reason to utilize it. The current state of information literacy instruction could definitely be described as a Seven Corners area, replete with often-confusing signals, limited visibility, and difficult access. However, signals can be made clearer through continued collaboration, content- and context-driven instruction, and vocabulary choice. Visibility can be enhanced to include the specialized differences between expert and novice researchers so that richer communication and learning develops. Difficult access can be addressed by a fuller understanding of how the world of information has changed for students, both those who have grown up with technologies and information seeking capabilities vastly different than those of the past and those returning to the academic world after time in work environments. This is an exciting time for both librarians and educators who are prepared to embrace change, work together, and improve information literacy instruction for the benefit of our students.

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