The Social Life of Knowledge:
Faculty Epistemologies

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When the original *Information Literacy Competency Standards for Higher Education* were first published in January 2000, I was delighted to see the complexity of research articulated. Finally, information literacy wasn't just about using library tools to find sources.[1] It was about articulating questions, making judgments, and creating new things within an ethical and social context. It seemed obvious at last that information literacy could no longer be conceived as a library program. Rather, it was a project so complex that it would have to be embraced by faculty across the disciplines.[2] These standards confirmed my strong feeling that students could not become information literate by more or less randomly scattering library sessions into their classroom experiences. Rather, it was work that would have to be intentionally embedded throughout courses and within entire programs. It seemed to be a document designed to promote collaborations and campus-wide discussion.

A few months after the standards were published, we hosted a weeklong workshop for faculty across the curriculum who wanted to revise or create new courses that would intentionally include a developmental approach to learning and practicing research skills.[3] On the final day of the workshop, our plan called for moving beyond the design of specific courses into a conversation about what our

students should be able to do upon graduation. To frame that conversation, we reserved the closing hours of the workshop to discuss ways in which we could move beyond courses and think about how programs could intentionally develop research skills in a sequential, intentional manner. As an introduction to this conversation, we shared the new standards.

Workshop attendees' reaction was not what we expected.

The faculty seemed universally puzzled by the standards and even distressed. "The word 'creativity' doesn't appear anywhere in this document," one faculty member said. Another wondered why all references to original thought were left out. The focus seemed too much on finding and manipulating things rather than working with ideas to create new knowledge. A professor in the economics and management department likened the detailed list of performance indicators and outcomes to a Tayloristic time and motion study, breaking something organic into small mechanical steps. Others protested that a student who did well on each of the steps might still have difficulty writing a coherent paper based on research. Conversely, a student who might fail miserably on many of the listed "performance indicators" might conduct brilliant research. Some faculty confessed *they* would not fare well if tested on many of the outcomes listed in the document. Yet the books and articles they had published provided some evidence that they were demonstrably information literate.

In some ways, it was a dispiriting end to an exhilarating week of collaboration and discovery—our standards failed the test!—but in reality, it was an affirmation that faculty felt a strong sense of ownership of and commitment to the kind of learning we try to promote. If anything, the standards simply didn't go far enough in describing a creative process of using information to create new knowledge.

It also brought home our very different perspectives on what we are talking about when we talk about research. Librarians tend to work more closely with students than with faculty and, as a result, tend to think about research in terms of finding and evaluating information that will be used for a particular short-term task. In academic libraries, that task is most frequently imagined as the completion of an assignment that involves discovering, choosing, and using sources to write a paper or make a presentation. The standards seem to suggest information use is inevitably tied to a need to carry out a particular task. The next steps, after determining that use, are to find information, make choices among the options, and use sources in a "product or performance," without violating rules. This is not at all how faculty in the disciplines do research. It isn't even how librarians do research.[4]

Faculty members' experiences as researchers influence what their learning outcomes are, how they design assignments, and what processes they expect students to engage in as they complete them. In this chapter, we'll explore what those experiences and expectations are.

Disciplines exhibit strong differences among themselves when it comes to methods and publication patterns. However, some of the underlying values and beliefs that seem to apply to faculty in all disciplines are trust in expertise and rigorous professional training, a sense of knowledge being created in and by a community, a strong belief that evidence matters, and a reliance on research methods that differ greatly from one discipline to another but are all rooted in a desire to be rigorous, fair, and open-minded in the search for meaning.

Expertise

The value assigned to expertise is sometimes conveyed in the way faculty refer to their training: "I was trained in…" is a phrase often used to distinguish one's strengths. "I don't have training in…" is frequently used to delineate the boundaries of one's abilities. Expertise is gained primarily through a difficult and extensive apprenticeship in a discipline, encompassing years of study; carrying out extensive original research for a dissertation; becoming an active member in disciplinary organizations, both formal and informal; having a deep and continuing knowledge of the literature of the field; and earning a credential, which is usually a doctoral degree. This training and its credentialing confers upon expert scholars special status as contributors to knowledge and confers on texts produced by experts an assumption of likely validity that is withheld from expertise earned by other means. An art historian's analysis of street art is presumed to be more insightful and valuable than an artist's blog post. A trained historian's article about a historical event or artifact is assumed to be a greater contribution to what we know about the past than an untrained local historian's self-published book. A physicist with post-doc experience at a national laboratory who proposes a novel approach to supersymmetry will get more notice than a citizen-scientist without formal training. A political operative with deep knowledge of the Washington political scene may be an expert, but without training in political science methods and theory, his or her insights will likely become part of what political scientists know only if someone with that training studies it and validates it.

When faculty tell students to use scholarly sources, they do so under the assumption that scholars produce material that is, by virtue of training in a particular way of knowing, superior to and more rigorous than other forms of information. Scholarship is analytical, critical, and bound by certain methodological and ethical conventions that make it trustworthy. Not all scholarship is equally valuable, and sophisticated readers can distinguish work that is groundbreaking from pedestrian, derivative, or shoddy work. But in general, the methods and values inculcated in graduate training and developed over the course of an active scholar's life are valued more highly than the kinds of knowledge-seeking and idea formation practiced by journalists, hobbyists, or members of non-scholarly trades.

Faculty members' implicit faith in scholarly expertise can be at odds with both undergraduate experience and with preparation for lifelong learning. Novice researchers can quickly learn to identify scholarly articles by their surface features, though even these can be confusing. One professor may tell their students that scholarly articles are ones that are at least 15-pages long in publications that have few images and no advertisements, which would exclude most peer-reviewed publications in the sciences. Another will instruct students to reject anything that doesn't have a clearly labeled methodology section, which would exclude most humanities scholarship. To some extent these differences are overcome by database vendors when they use metadata drawn from periodical directories to allow students to limit search results to scholarly or peer-reviewed sources—but even those filters can fail. Sometimes periodicals are mislabeled as scholarly when they are not. They also may fail to distinguish between an editor's introductory essay or a book review and a peer-reviewed research article. A seasoned scholar would recognize those differences instantly, but when undergraduates are focused on externalities, these differences in genres within scholarly publishing are less distinguishable.

A more significant problem is that focusing on the external appearances of scholarly publications oversimplifies the complexity of making choices among thousands of peer-reviewed possibilities and being able to make sense of the scholarly articles chosen for further examination. Undergraduates typically have little or no knowledge to draw on to create the kinds of filters seasoned scholars use—knowing which journals are the most influential and respected ones or even (unless it's obvious from the title) whether a journal is within a particular discipline. To make good choices, students have to interpret clues in the titles and abstracts, which assume knowledge they don't have. Unlike the audience

for which these articles were written, students are not well prepared to interpret from these scant clues the content that will be covered, the audience to which it is addressed, and the direction an argument is likely to take.

Reading and making sense of the articles students have chosen can be difficult too. As first-year students interviewed in a Project Information Literacy study reported, students come to college having little or no exposure to scholarly texts.[5] It takes a great deal of time and effort for them to read dense prose full of terminology they don't know, reference to literature they haven't read, and rhetorical conventions that are unlike those used by the texts they are familiar with—magazine articles, textbooks, and books for popular audiences. First-year students also report difficulty grasping the specialized vocabulary that will help them construct an effective search and then comb through a massive number of results to weed out irrelevant articles and find ones that they can use.

So, though faculty put a high value on the expertise represented by scholars' publications, the means by which they discover, make sense of, and make use of these expert texts depends upon work habits and deep background knowledge that helps them discover, select, store, read, and draw on scholarly texts in ways that are not available to nonexperts. One simple means of helping faculty members recognize the challenges their students face is to ask them to find five high-quality scholarly sources on an unfamiliar topic in a field entirely foreign to them and to do it quickly. This exercise can reveal the tacit knowledge faculty depend on when doing their own research and demonstrates that expertise, while valuable, often sets up barriers that it is difficult for nonexperts to overcome.

The Conversational Nature of Knowledge

Librarians, as disciplinary outsiders, often unconsciously approach the management and discovery of knowledge in terms of *things* that are about *subjects*. A source that contains knowledge about a topic is bounded by the shape of its container. If it is a book, it will be on a shelf, in a collection of e-books, or available from another library, its location identified through WorldCat or another union catalog. If it is an article, it will be part of a journal located in a database or (if the specifics of the container are known) retrieved through a link resolver. As disciplinary outsiders, we tend to discover these containers through catalogs, databases, and discovery layers, using likely subject terms (rather than known

authors or publications), refining our search language along the way as we en-counter more precise terminology, applying additional subjects to narrow a search down, and using other limiters to hone the results of a search. In short, we search for knowledge in things, relying primarily on tools that connect us to published containers.

Faculty, as insiders, see knowledge in social and conversational terms. Sources are written by people and are addressed to groups of people. These people know one another through disciplines, a tribe of experts who engage in long, ongoing conversations of common interest. Each publication is documentation of a contribution to that conversation, one that locates itself within the conversation by naming previous contributors. A literature review is both a way to mark which conversation this new contribution belongs to and to demonstrate in what ways this publication contributes something new to it. For a contribution to have value, it first must establish that there was a gap in the conversation that needs filling before explaining how it fills that gap, often ending with suggestions about what work still needs to be done. The literature review, itself, is a map of how ideas have taken shape through collaborative work. It argues that knowledge is constructed out of many voices and that those conversations have a meaningful shape: This group of scholars has developed one school of thought; those scholars have gone off to address a related set of questions; another group of scholars has splintered from the dominant group and is proposing a radically different approach. The conversations split, diverge, loop back and over time collectively take many different approaches to questions, adding to and challenging what is collectively agreed-upon knowledge within a disciplinary community.

This has a profound influence on the process scholars use to find things out. Sources aren't containers full of knowledge. They are people with ideas who are developing those ideas over time and within a community. Disciplines are a key category, in that members of a discipline share assumptions about what we know, how we know, and what questions are appropriate to ask. They are further subdivided by interests and theoretical foundations. Members of disciplines develop a tacit grasp of how a discipline divides into subdisciplines and where bridges between disciplines can support interdisciplinary inquiry that may, in time, form disciplines of their own. On any college campus, the boundaries of disciplines are delineated in departments and programs, with programs typically holding a more precarious position when it comes to resource allocation and how many majors they support.

This can, at times, contribute to lack of understanding or false assumptions about other disciplines that does not make it easier for undergraduates, who are forced to cross disciplinary boundaries to meet general education requirements. Students have to distinguish what matters to their instructors in disciplines with different expectations and vocabularies. These differences can be as clear-cut as requirements to use different citation rules. Students may have to format citations according to three or more different style manuals within a single semester. Often the differences are subtler. One instructor may think it wholly inappropriate for a student to use first person in formal writing, while another deducts points for using passive voice. What is called a "primary source" in students' history class is defined differently by a biology teacher insisting that students find and use a "primary article" in their research. It's rare for faculty members to define a term such as "primary" by contrasting it to how other disciplines use it. Their disciplinary conventions are normative and so deeply familiar that they may not realize that their discourse conventions are not universal.

There have been efforts to bridge the differences between disciplines through learning communities, interdisciplinary programs, service and community-based learning and efforts to integrate learning through revised general education curricula. Scholars of composition and rhetoric have effectively probed disciplinary conventions from the perspective of student writers. The Writing Across the Curriculum (WAC) movement has arguably done more than any other pedagogical approach to clarify and articulate the tacit assumptions embedded in discipline-based discourse practices. Librarians interested in helping faculty understand the differences in disciplinary discourses and how they affect undergraduate learning can learn much from the work accomplished by proponents of WAC and from the scholarship of composition and rhetoric.[6]

The notion that "sources are people talking to other people" and that knowledge is advanced through conversation can be a powerful heuristic for undergraduate researchers.[7] Often students begin their college career having expectations that it will proceed along the lines of what Paolo Freire has called "the banking concept of education."[8] Knowledge isn't made by people like them. It is a commodity controlled by other, more powerful people. The students' role is to passively have that knowledge deposited from the experts into their heads. They have no effect on that knowledge, and they have nothing at all to contribute to what we know. When writing research papers, this concept suggests that knowledge is something to be found in authoritative sources. Students have no right to say anything themselves; they need to find a source that can say it for them.

Every academic librarian has had the experience of working with students who either feel they need to drop an interesting topic because they can't find a source that says exactly what they want to say. Others become frustrated that they can't find "the perfect source," the one with the answer to the question they are posing. Somehow, because they have been asked to back up their claims with evidence (preferably found in publications that have every appearance of being scholarly), they get the impression that originality is against the rules. Research becomes a process of visiting the library as a bank of knowledge to withdraw the information they need. They then arrange quotes, quite often lifted directly from their sources, and document them to demonstrate exactly how safely unoriginal their thinking is. Failing to document a source properly is the equivalent of property theft, a crime that carries heavy academic penalties. There is little in this version of research that departs from the banking concept of education.

When students begin to realize that sources are people talking to other people in an unfinished conversation and that they themselves can be part of it, their sense of agency in the making of knowledge can change profoundly. The shift from being a consumer of information to being a creator of knowledge is empowering. It may be one of the most profound changes a college student can go through, and it is a change in identity that is fundamental to lifelong learning. It primes students to become active, involved participants in the world they will graduate into. It is also a significant change in their understanding of how information works, which is a necessary part of intellectual development. No longer is truth something absolute and external; our understanding is socially situated, constructed, and subject to change.

In 1984, Stephen K. Stoan argued that research instruction bore little relationship to library instruction and that librarians "weaken the image of the profession by giving the impression of looking on books and journals as just so much merchandise, so many units of information, to be purchased, accessioned, cataloged, shelved, identified through access tools, circulated, re-shelved, and finally discarded according to some undefinable criterion."[9] Treating research as the retrieval and manipulation of things, in his estimation, misrepresented the true nature of research. Essentially, he argued that librarians' contributions to learning were minimal and that their claims for the importance of what was then called "bibliographic instruction" were wildly overblown.

Two years later, Joan Bechtel, who had higher hopes for the role librarians played in learning, proposed conversation as a paradigm for librarianship. She

suggested that we should "begin to think of libraries as centers for conversation and of ourselves as mediators of and participants in the conversations of the world."[10] She criticized the emerging emphasis on information management and delivery as an overly commercialized and unimaginative identity for libraries. Rather, academic libraries serve "to introduce students to the world of scholarly dialogue that spans both space and time and to provide students with the knowledge and skills they need to tap into conversations on an infinite variety of topics and to participate in the critical inquiry and debate on those issues."[11] More recently, R. David Lankes has called on librarians to embrace conversation as a model and to make facilitating that conversation and promoting community knowledge creation for the betterment of society the primary mission of libraries of all kinds.[12]

The use of citations for discovery is one of the ways knowledge manifests itself as an ongoing conversation. Decades ago, Stoan argued that librarians were wrong to characterize the systematic use of library search tools as a research strategy and accused librarians of neglecting the fact that footnotes constitute a highly refined self-indexing function for scholarly literature, providing "greater comprehensiveness, better analytics, and greater precision" than library tools. "Footnotes," he writes, "are, after all, the traditional medium whereby scholars communicate with each other directly." By contrast, library tools are crude in their ability to link related sources together and do little to rank sources in order of significance or relatedness.[13]

Faculty often expect students to naturally adopt a practice that is second nature to them. They are used to decoding citations as they evaluate an argument. It is a natural part of reading a text because it's how a reader can determine if the author adequately acknowledges what is going on in disciplinary conversations, if the author missed something important, and what theoretical framework the author is using. Faculty members can decode a citation and know how to get their hands on cited works. Though the citation network does provide a sense of context and relative value of cited sources, undergraduates often find citations undecipherable and don't know how to go from a citation to a work. Discovery layers are currently not as good at locating specific sources as they are at aggregating sources on a common topic. For many students, a reference list is a collection of broken links. Librarians who want to emphasize the social nature of knowledge could spend less time demonstrating the features of library databases and do more to help students navigate the self-indexing nature of scholarly texts.

The conversation metaphor, while it is a valuable and often overlooked heuristic, does have a significant drawback: It assumes everyone feels equally invited to participate in scholarly conversations. In reality, conversations can be inhospitable to outsiders. All students will, at first, feel marginalized. Some students, including first-generation college students, students with socioeconomic disadvantages, or students who lack welcoming support systems, will feel more excluded than others. Simply pointing out that knowledge is created by people fails to acknowledge genuine inequities. It also may invite students to mimic a certain kind of discourse without enabling students to connect that discourse to their own lives and identities.[14]

Stoan (like many critics of librarians' efforts to provide meaningful learning opportunities to students) felt that librarians exaggerate their instructional mission; that they misrepresent research as a systematic process of using discovery tools; that research is not as essential an undergraduate learning experience as we assume; and that research instruction, if it is needed at all, would be best left to the faculty in the disciplines who, unlike librarians, actually do research and so know what is involved.[15] Michelle Holschuh Simmons takes another approach, arguing that librarians are uniquely positioned to serve as discourse mediators.[16] Faculty assume their discourse conventions are normative, and they forget that they once learned them. Librarians occupy a position that is both inside and outside scholarly discourses and can play an important role in helping faculty understand the tacit knowledge and assumptions they have (which students lack) as well as nudging students toward an understanding that knowledge is constructed, not merely found. The role librarians play, then, isn't as experts so much as translators and cultural informants. Librarians could also take their mission in the direction of fostering faculty conversations within their local communities to seek connections among disciplines and between college experiences and life before and beyond college. Through involvement in first-year programs, librarians are instrumental in introducing students to college-level inquiry.[17] They could play a greater role in promoting students' transition to life after college by helping both students and faculty consider how inquiry skills practiced in college will be used after graduation in nonacademic settings. Two reports published by Project Information Literacy—*Learning the Ropes* and *Learning Curve: How College Graduates Solve Information Problems Once They Join the Workplace*—provide excellent material for such conversations, which librarians, as custodians of the commons, are well suited to host.[18]

Evidence, Methods, and Ethics

In addition to rigorous training and participation in scholarly communities, faculty in all disciplines value rigorous methods and respect reasoning from evidence. Methods differ from one discipline to another, with some disciplines valuing empirical research, others more open to qualitative methods, and many in the humanities focused on close reading of primary texts and the interpretation of culture through theoretical lenses. Though the methods and their assumptions differ, there are some values common to them all.

Whatever method is used to conduct research, it cannot be driven by self-interest. One might question whether objectivity is possible, but it is generally an ideal that guides researchers' behavior. Research begins with a question or hypotheses, not with a foregone conclusion. Evidence matters, but it has to be handled fairly. Cherry-picking material that suits an argument while ignoring evidence that doesn't is conduct unbecoming of a scholar. Research is conversational, but it would be unethical to fail to cite the person who expressed an idea first. Other people's contributions to the conversation must not be misrepresented. Peer review is flawed; it can let bad research slip through, or it can be too conservative, suppressing research that challenges the status quo. Yet because originality is so highly valued among scholars, there are incentives for dissent.[19]

These ethical values are not always made clear to students, at least not in their early forays into research. While evaluating sources is often emphasized in lower-division composition courses, the common checklist approach typically focuses on externalities (whether the source was published in a scholarly journal, how recently it was published) or on qualities that few undergraduates are positioned to assess such as the authority of the author or the reputation of the publisher. Students may not have sufficient background to evaluate the source's use of evidence or the soundness of its methodology. Yet often—in the flurry of work involved in learning how to organize an argument effectively, write in a suitably academic voice, avoid grammatical mistakes, draw on sources without plagiarizing them, and cite them according to Byzantine rules—some of the most fundamental ethical values of research can get lost. In particular, students are often encountering the use of the word "argument" as scholars use it for the first time. Rather than meaning debate or conflict, this kind of argument refers to the development of an idea using examples, evidence, and logic. Students often believe they must assemble quotes from sources to support a position, making tactical choices the ways political candidates do, but they do

not realize that research can change the mind of the researcher, that the evidence they encounter might overturn their thesis completely. It's not uncommon for students to ask reference librarians for help finding sources for a paper they've already written. That's an extreme example of misunderstanding the purpose of using sources in writing, but it's hardly uncommon.

In the 1990s, Jennie Nelson studied undergraduate writers, finding that most first-year students gather material and quote it without engaging in the recursive process of reading, writing, and making meaning, with 75 percent simply compiling information, ten percent seeking sources that would confirm what they had already written, and another ten percent coaxing a thesis from a handful of more or less randomly chosen sources. Only five percent engaged in a recursive process of research and discovery.[20] More recent findings of the Citation Project suggest that little has changed. Students tend to draw quotations from sources that they have not demonstrated they have read and understood and engage in "patchwriting" rather than synthesizing information or creating their own understanding.[21]

At the same time, Alison Head's study of freshman research practices suggests that librarians and composition teachers play a significant role in introducing students to scholarly texts and strategies for navigating library resources and making choices amid an overabundance of options. Students in the study reported enjoying the freedom to explore their own topics and develop their own theses but felt anxious about reading scholarly texts that were entirely unfamiliar to them, chosen from among the resources of a library many times larger than any they had used before. These studies suggest that engaging students in research activities at the beginning of their college careers is a valuable introduction to scholarship and its ways, but also suggests that, without guidance, students are likely to believe that research is a process of compiling information from sources, often through harvesting quotes. Librarians, writing instructors, and faculty in the disciplines could fruitfully collaborate on finding ways to introduce students to the ethical values scholars share, even if it comes at the expense of spending time on learning how databases work and how to cite sources accurately.

Differences in Modeling a Process

The underlying values and beliefs scholars hold about epistemology influence the day-to-day practices of researchers who are well versed in their subject matter and will remain immersed in it for far longer than undergraduates will. Be-

cause their knowledge base is so familiar to them, they forget how much what they know guides how they approach the tasks they assign their students.

Formulating a research question, for a member of the faculty, grows out of knowing where the gaps in current knowledge are and which gaps are most intriguing and likely to be of interest to others in the discipline. That insider knowledge comes from having organized a personal method for monitoring the regular flow of new information being produced by practitioners in the field. That new information is viewed in the context of an already deep knowledge base, which provides a foundation and a framework into which new information can be situated. Faculty often fail to take into account how much research an undergraduate must do before even being able to determine what research questions are meaningful and manageable.

For faculty, choosing which publications to pay attention to is informed by knowledge of which publishers and journals have the strongest reputations and which authors are well-established experts and which are outliers. Students, who have none of this knowledge, will not find it in library databases.

Faculty often put more faith in footnotes than in subject databases or discovery layers when it comes to reviewing related literature, but students find the process of interpreting citations and getting their hands on cited sources difficult.

Faculty spend little time in the physical library and may only rarely use the library's website to find out what's been published.[22] For faculty, the library's collections and tools are a kind of switching station where they can see if a source is locally available or if it must be obtained by other means. The discovery of what sources they want to pursue is less likely to happen on the library's website or in the library's stacks than it is through their professional networks, the citation network, or announcements of new content in journals they depend on.

Librarians typically guide students through a process that is better suited to novice researchers, who lack the contextual knowledge and the cues that faculty have internalized. However, it can inadvertently encourage a process that pays insufficient attention to the conversational context of research and the network of connections represented through citations. If the emphasis is on finding, evaluating, and using sources, it can suggest that research is primarily about mining quotes from published sources. Collaboration with faculty should include discussing the different perspectives librarians, faculty in the disciplines, and students bring to knowledge, negotiating the most effective ways to help novice researchers navigate the anxiety-producing vastness of an academic library without losing sight of the faculty member's learning goals.

Realpolitik and the Diplomacy of Collaboration

The professional lives of librarians and faculty in the disciplines are significantly different (though one must also admit that there is a great deal of variation among disciplines; the professional life of a faculty member in the performing arts may be just as different from that of chemists or classicists as from librarians). A long-recognized difference between librarian and faculty in general is in social status. Lars Christensen, Mindy Stombler, and Lyn Thaxton analyzed librarian-faculty relationships from a sociological stance, concluding that there is an asymmetrical interest between the two groups; librarians are highly motivated to collaborate, but faculty have little incentive to do so.[23] This situation is at least partially influenced by a differential in status, which is partly related to campus power structures, perceptions of the relative value of the work librarians and faculty do, and gender. The literature on faculty-librarian collaboration, which is voluminous in the literature of librarianship but scant in other disciplines, reinforces this study's findings. A study conducted in Ireland of faculty attitudes toward learning information skills suggests that many faculty evaluate research products rather than teach a process, assume motivated students will figure things out on their own, decide "learning by doing" can suffice rather than formal instruction, and believe failure to complete research successfully can largely be put down to lack of motivation on the part of students.[24] The authors suggest that information literacy is not a high concern for faculty and that librarians should do more to take the case for information literacy out of the library literature and into other disciplinary venues. A more recent survey of faculty at two- and four-year colleges in New Jersey found that nearly all faculty across the disciplines value information literacy, feel it's an important part of what they teach, and make assignments that give students opportunities to practice information literacy skills.[25] However, nearly half of respondents felt students were not adequately prepared on graduation, particularly at the end of two-year programs. A large majority of faculty felt that this kind of learning belongs in the curriculum; a majority (though a smaller one) felt that librarians have a role to play either through instruction sessions or one-on-one consultation. These findings suggests that the level of faculty interest and concern is high and that faculty recognize the value of librarians' contributions to this kind of learning—yet many feel students are not learning enough. Faculty seem interested in making available a more coherent cross-curricular effort to build on what students learn

in their courses. Whether faculty will welcome librarians' leadership will largely depend on local campus cultures and the availability of time and funding for initiatives.

A newer distinction between librarians and faculty in the disciplines bears consideration. Though a substantial percentage of academic librarians are faculty, they seem to have largely been spared a trend in many academic departments: to reduce the number of full-time staff by hiring instructors by the course.[26] The fact that three-quarters of the professoriate currently is neither tenure track nor tenured has had a great deal of influence on the lives of emerging scholars, just as the defunding of public education has raised the level of debt graduate students must bear to complete their education.[27] As the number of well-paying academic jobs has dwindled, the demand to stand out with more research publications has increased.[28] The pressure on early career faculty to get grants and produce publications while, in many cases, having difficulty finding secure work that pays a living wage, could have a detrimental and lasting impact on efforts to embed information literacy into courses and programs. For undergraduates, learning how to conduct research well depends on coaching from librarians and apprenticeship to scholars. The programs that most highly value the kinds of research that libraries support are particularly vulnerable to budget cuts and loss of tenured faculty positions. There is also evidence that the positions that support novice researchers—those who teach first-year composition courses, particularly in community colleges—are even more precarious than other faculty positions.[29]

If librarians want to collaborate with faculty to enhance information literacy, they need to understand how faculty conceptualize knowledge and how their research processes and habits may influence their expectations of students. Librarians also need to recognize how to blend library-focused practices and students' practical desire to complete assignments as efficiently as possible with the higher-order learning that can involve students in deeper, more conceptually rich research experiences. Students should be encouraged to see themselves as active contributors to the construction of knowledge, and faculty epistemologies may provide a far richer framework for that kind of discovery than any tool-and-resource-focused model of research. Yet, because the library belongs to all disciplines and librarians are discourse mediators between disciplines and between novices and experts, librarians may be particularly well positioned to provide opportunities for faculty to explore their research practices and how they can enhance undergraduate education. Whether providing faculty development

opportunities or simply connecting with faculty who might be interested in collaboration, librarians must also bear in mind the current economic and political status of faculty. In the interests of student learning, librarians should be aware of and be prepared to support faculty as they face stratification between tenured faculty and the contingent majority and confront the serious threats many academic programs face in an age of austerity.[30]

Notes

1.   Association of College and Research Libraries, *Information Literacy Competency Standards for Higher Education,* accessed April 7, 2014, http://www.ala.org/acrl/sites/ala.org.acrl/files/content/standards/standards.pdf. As of this writing, the standards are being thoroughly revised.

2.   In this chapter, I use the term *librarian* to refer to library professionals, regardless of whether they hold faculty status. By *faculty* I mean instructors in all other disciplines, regardless of whether they hold faculty, lecturer, or other titles.

3.   This workshop was part of a two-year IMLS National Leadership Grant project titled Enhancing Developmental Research Skills in the Undergraduate Curriculum. Information about the grant and the faculty workshops is available online at https://gustavus.edu/library/IMLS/.

4.   Nancy Fried Foster, "The Librarian-Student-Faculty Triangle: Conflicting Research Strategies?" (paper, Association of Research Library's Library Assessment Conference, Baltimore, Maryland, October 26, 2010), http://hdl.handle.net/1802/13512.

5.   Alison J. Head, *Learning the Ropes: How Freshmen Conduct Research Once They Enter College,* accessed August 14, 2014, http://projectinfolit.org/images/pdfs/pil_2013_freshmen-study_fullreport.pdf.

6.   A particularly useful examination of the challenges students face as they navigate different discourse conventions can be found in David Bartholomae, "Inventing the University," in *When a Writer Can't Write: Studies in Writer's Block and Other Composing-Process Problems,* ed. Mike Rose (New York: Guildford, 1985), 134–65. A valuable collection of open access texts on Writing Across the Curriculum is available at the WAC Clearinghouse at Colorado State University: http://wac.colostate.edu/. CompPile, an ongoing database of publications on WAC and writing studies, is available online at http://comppile.org/.

7.   I first encountered this insightful phrase in personal communication with Doug Downs, associate professor of English at Montana State University.

8.   Paolo Freire, *Pedagogy of the Oppressed,* trans. Myra Bergman Ramos (New York: Continuum, 1970).

9.   Stephen K. Stoan, "Research and Library Skills: An Analysis and Interpretation," *College and Research Libraries* 45, no. 2 (1984): 108.

10.   Joan M. Bechtel, "Conversation, a New Paradigm for Librarianship?" *College and Research Libraries* 47, no. 3 (1986): 219.

11.   Bechtel, "Conversation," 221.

12.   R. David Lankes, *The Atlas of New Librarianship* (Cambridge, MA: MIT Press, 2011).

13.   Stoan, "Research and Library Skills," 103.

14.   A useful feminist exploration of the differences between mimicking a scholarly identity

and connecting that identity to one's personal life experiences, values, and goals can be found in *Women's Ways of Knowing: The Development of Self, Voice, and Mind* (New York: Basic Books, 1997).

15.   In "Research and Library Skills," Stoan writes, "Research scholars, who may make significant contributions to knowledge, seldom possess library skills. Librarians, who possess library skills, seldom do research. Indeed, they work in a field whose research tradition is universally acknowledged to be weak … From these facts, it must be deduced that research skills and library skills are neither the same thing nor bear any organic relationship to each other" (105).

16.   Michelle Holschuh Simmons, "Librarians as Disciplinary Discourse Mediators: Using Genre Theory to Move toward Critical Information Literacy," *Portal: Libraries and the Academy* 5, no. 3 (2005): 297–311.

17.   Alison J. Head's *Learning the Ropes* study confirms that librarians, along with composition instructors, play a significant role in introducing first-year students to academic discourse conventions and faculty expectations.

18.   Head, *Learning the Ropes*; Alison J. Head, *Learning Curve: How College Graduates Solve Information Problems Once They Join the Workplace,* accessed August 14, 2014, http://projectinfolit.org/images/pdfs/pil_fall2012_workplacestudy_fullreport_revised.pdf.

19.   This conflicted negotiation between conservatism and originality is described well by Michael Polanyi in "The Republic of Science: Its Political and Economic Theory," *Minerva* 38, no. 1 (2000): 1–21.

20.   Jennie Nelson, "The Research Paper: A 'Rhetoric of Doing' or a 'Rhetoric of the Finished Word'?" *Composition Studies/Freshman English News* 22, no. 2 *(1994): 65–75.*

21.   The Citation Project's findings are available online at http://site.citationproject.net/.

22.   Ithaka S+R has documented a trend among faculty to value the purchasing agent role of the library more highly than its role in discovery. See the "Faculty Survey Series," available online at http://www.sr.ithaka.org/research-publications/faculty-survey-series.

23.   Lars Christiansen, Mindy Stombler, and Lyn Thaxton, "A Report on Librarian-Faculty Relations from a Sociological Perspective,"*The Journal of Academic Librarianship* 30, no. 2 (2004): 116–21.

24.   Claire McGuinness, "What Faculty Think: Exploring the Barriers to Information Literacy Development in Undergraduate Education," *The Journal of Academic Librarianship* 32, no. 6 (2006): 573–82.

25.   Eleonora Dubicki, "Faculty Perceptions of Students' Information Literacy Skills Competencies," *Journal of Information Literacy 7, no. 2 (December 2013): 87–125, doi: 10.11645/7.2.1852.*

26.   Federal surveys unfortunately track only FTE staff in academic libraries, not the ratio of full-time to part-time staff. One personal account from a library director who has had to deal with staffing patterns that mirror those of faculty in other disciplines can be found in a blog post by Jacob S. Berg, "The Adjunctification of Academic Librarianship," *Beerbrarian* (blog), April 29, 2013, http://beerbrarian.blogspot.com/2013/04/the-adjunctification-of-academic.html.

27.   John W. Curtis and Saranna Thornton, "Here's the News: The Annual Report on the Economic Status of the Profession, 2012–13," *Academe* (March-April 2013): 4–19, http://www.aaup.org/file/2012-13Economic-Status-Report.pdf.

28.   Indeed, a recent Nobel prize winner in physics told a reporter that he would not be considered sufficiently productive to retain an academic position today, criticizing the current emphasis on quantity over the lasting value of scholarship. See Dekk Aitkenhead, "Peter Higgs: I Wouldn't Be Productive Enough for Today's Academic System," *The Guardian,* December 6, 2013, http://www.theguardian.com/science/2013/dec/06/peter-higgs-boson-academic-system.

29.   David Laurence, *Demography of the Faculty: A Statistical Portrait of English and Foreign Languages, Modern Languages Association,* December 10, 2008, accessed April 7, 2014, http://www.mla.org/pdf/demography_fac2.pdf.

30.   Michael Bérubé, "The Humanities Declining? Not According to the Numbers," *Chronicle of Higher Education,* July 1, 2013, https://chronicle.com/article/The-Humanities-Declining-Not/140093/.