



Beyond Peer-Reviewed Articles: Using Blogs to Enrich Students' Understanding of Scholarly Work

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abstract: Undergraduate students are expected to find, evaluate, and use peer-reviewed or scholarly literature, but they rarely learn about the process of creating new knowledge or the roles the literature plays in the work of scholars. A desired outcome of undergraduate education is the understanding that knowledge is created, evolving, and contextual rather than discovered, static, and universal. There is some evidence that explicit instruction can facilitate this understanding. As scholars use the participatory Web to talk about the work that they do, they also create places where students can look in on the knowledge creation process.

Introduction

Like many of their peers in composition classes across the country, students enrolled in Oregon State University's 200-level composition course (WR 222) spend a class period in the library learning how to do research. When they get there, many are surprised to find that they will spend only a tiny fraction of their time navigating library databases or looking for peer-reviewed articles. Instead, these students learn new ways to use the participatory Web, browsing through scholarly blogs to find conversations about their topics.

The research assignment in WR 222 is atypical. Librarians and writing faculty developed it collaboratively after watching students struggle to use evidence in a meaningful way in more traditional research assignments, writing papers that require them to find



and cite some minimum number of peer-reviewed journal articles. While knowing how to use library-provided resources to find peer-reviewed articles is an important skill for students to master, they can successfully complete this task without ever understanding how this skill might relate to anything they will need to do outside the classroom in their personal or professional lives. Additionally, after graduation, relatively few students will have access to the types of resources academic libraries provide. If information literacy is to truly form, as the Association of College and Research Library's definition states, "the basis of lifelong learning," then students need a strong conceptual understanding of scholars' research and writing processes as well.¹

The conversations scholars have always had about their scholarly work still happen at conferences and along faculty hallways, but today they are also happening online in publicly available forums. In these public spaces, the dialogs become searchable, browsable resources that students can use to see the debates, the arguments, and the intellectual energy beneath the surface of polished, published, scholarly work.

In this paper, we explore how librarians and disciplinary faculty can use these conversations to help students understand the scholarly sources they need to use in their

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coursework. We draw upon the research regarding college student development to argue that incorporating these scholarly conversations into information literacy instruction can help all teaching faculty—whether in the classroom or in the library—show students not only how to find scholarly resources but also how to use those sources to develop their own answers to questions and to make their own meaning. At the same time, we consider how librarians and

disciplinary faculty can use the participatory Web to extend the lessons learned in an academic research project beyond the classroom.

Reflective Thinking and Information Literacy

When we ask typical beginning composition classes to indicate, with a show of hands, if they know what the term "peer-reviewed journal articles" means, only a small fraction raise their hands. Even when students have no preconceptions about the scholarly literature, they still approach their academic work with a set of preconceptions about what knowledge is, how it is created, and how their own research fits into that picture.

There is a large body of research examining how students develop in college. A common theme in this research is the argument that college is a time when a person's epistemological beliefs shift. One starts out with a fairly simplistic mental model, in which knowledge is revealed and truths are absolute, and ends up believing that knowledge is constructed and uncertain.² One such model—the Reflective Judgment Model—that is articulated by Patricia Kitchener and Karen King is particularly useful in the context of information literacy instruction because it specifically examines how students understand the knowledge creation process and how they understand the value of expert or



authoritative information. The model divides development into seven stages, grouped into three periods: pre-reflective thinking, quasi-reflective thinking, and reflective thinking.³ Pre-reflective thinkers still see knowledge as revealed and truths as absolute, while fully reflective thinkers know that knowledge is constructed and that there are problems for which there are no obvious solutions. Kitchener and King's research shows that most students begin college in the middle of this spectrum and make progress toward more reflective thinking as they advance through their undergraduate education. How these students understand evidence is a key part of this progression. An essential characteristic of reflective thinking is the ability to manage uncertainty, to evaluate potentially contradictory claims, and to evaluate the evidence one uses to construct meaning out of new information.⁴ This ability to evaluate information and manage uncertainty is also an essential characteristic of an information literate person, according to the ACRL Instruction Section's *Information Literacy Competency Standards for Higher Education*.

The uncertain quality and expanding quantity of information pose large challenges for society. The sheer abundance of information will not in itself create a more informed citizenry without a complementary cluster of abilities necessary to use information effectively.⁵

For scholars, evaluating and using scholarly information effectively means constructing answers, where there are no obvious solutions, out of the best information available. For students, or "novices," Gloria Leckie notes, "This expert model does not work well."⁶ Yet, as Michele Holschuch Simmons argues, if students do not "recognize the disciplinary epistemological conventions that shape the knowledge," they will not be able to do the things an information literate person can do—find, evaluate, locate, use, and understand information.⁷

The expert model does not work well because, in order to effectively construct knowledge, one must understand it as something that is constructed, not discovered. The Reflective Judgment Model suggests that most undergraduate students neither understand knowledge as created nor that there are intellectual standards that govern how it is created. This is significant because using shared standards to create new knowledge is at the heart of what scholars do. When we require students to read and analyze these sources without explicitly addressing the intellectual assumptions that govern what and how material comes to be published in this literature, we are asking them to grapple with multiple and often implied intellectual standards that they do not understand and may not know exist.

Peer Review and Reflective Thinking

Kitchener and King conclude that the only way students will reach the reflective thinking stages is if they have a variety of learning experiences, inside and outside the classroom, in which they are explicitly asked and expected to think reflectively.⁸ Just as important, their professors, librarians, RAs, and advisors must all model reflective thinking in their own work.⁹ A student can find and use peer-reviewed sources without learning that those sources represent a different way of thinking about knowledge. That student can still write a passable research paper and receive a perfectly satisfactory grade, but he or



she will not learn as much from the experience as a student who is pushed to question his or her held beliefs about knowledge and learning. A deeper problem arises when peer review is explained in a superficial way, giving the impression that peer-reviewed sources are required because the information they contain is simply “better” than other

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types of information. Attempts to simplify why scholars value the peer-review process feed into pre- and quasi-reflective thinkers' desire for the “right” information. It is crucial that librarians understand and convey why peer-reviewed research is valuable from the scholarly researcher's perspective.

Quality control is an important part of peer review, but it is a specific kind of quality control. One cannot fully understand it without

an understanding that knowledge is constructed and that the disciplines have shared standards that govern the process of creating it. The validation of research is crucial to one important role of peer-reviewed literature: building an archive of knowledge within a discipline.¹⁰ This is not a static archive of the “best” work but a growing archive of a discipline's knowledge being created and revised with each added article. Thomas Kuhn's influential work, *The Structure of Scientific Revolutions*, is useful for understanding the importance of this living archive.

Kuhn examines the topic of paradigmatic change—or how huge shifts in scientific thinking happen within disciplines. As a part of this, though, Kuhn also describes “normal science.” This is the intellectual work done between the shifts in thinking—the research done in periods in which there is broad agreement about the basic principles guiding a discipline. These basic principles make it possible for scholars to build upon each others' work. Without a set of shared intellectual principles, research would become an endless process of reinventing the wheel.¹¹

Because scholars need to know what has already been done in order to build on it, a process to communicate the results of research is essential to the practice of normal science.¹² Scholars are not interested in demonstrating that which is so widely accepted that it is no longer arguable; they do not write the general articles that students often seek. Scholars rely on the archive for evidence for those points and use their original research to build on those “already answered” questions. To really understand scholarly articles, students must understand these two things about normal science. First, research that inspires more research, more questions, and more inquiry is the best kind of research. Scholars are not trying to write the last word on their topics; to them, there is always another question to answer. Secondly, relying on the ideas and the work of others makes an argument stronger, not weaker. Both of these ideas are central to scholarly practice, and both are obviously difficult for pre- and quasi-reflective thinkers to understand.

The very qualities that make normal science work for members of a community—the presence of shared intellectual principles that allow a community to build on prior knowledge without spelling it out—make it difficult for outsiders to follow along. Within the community, the shared principles—because they are shared—do not have to be stated. Even experts can have problems understanding research in other fields if they



do not familiarize themselves with that discipline's shared assumptions. For students in the earlier stages of development, Kitchener and King's research indicates that the barriers are even higher; they are not only unfamiliar with the particular standards of a discipline but they are also unlikely to believe that it is possible to have standards that differ from discipline to discipline.¹³

While developing an in-depth understanding of scholarly practice will not happen as the result of one research assignment, let alone one library instruction session, it is important that librarians and faculty both recognize that they need to make some of those unstated assumptions visible to their students if students are to understand what academics really mean when they decide an article is worthy of publication. To build her argument that disciplinary faculty and librarians must collaborate to teach information literacy, Ann Grafstein makes a strong case that some information literacy skills are inexorably "embedded within the research paradigms and procedures of their disciplines"; almost all of these relate to evaluation of ideas and of evidence.¹⁴

When students are required to find and use a peer-reviewed journal article, they are essentially being asked to learn something about a topic and evaluate what they learn just by reading that piece of scholarly writing. That may seem reasonable; but, in fact, it is not. Peer-reviewed articles are produced within a particular knowledge community and intended for other members of that community. For those who are not a part of the community, there are layers and layers of assumptions, revisions, collaboration, synthesis, and argument hidden under the static, polished surface of the published journal article.

Gerald Graff argues that scholarly writing is intentionally opaque to those who are not part of a disciplinary community. He acknowledges that readers can have difficulty with academic articles because of bad writing or complex subject matter but does not see these criticisms as the real barriers to understanding scholarly literature.¹⁵ Instead, academic authors routinely shy away from explicitly stating why their research or their conclusions should matter to their readers, as if writing for an expert audience requires one deliberately to leave out information that explains the "so what" or "who cares."¹⁶ Fellow scholars can fill in some of those blanks themselves; novice scholars cannot.

Graff further suggests that students not only fail to understand the significance of academic arguments but also (and more fundamentally) their purpose. They assume that academic authors want to win, or prevail, as one would in a debate. To students, winning an argument means that the argument is over. Academics engaged in normal science expect the argument will continue. This does not mean that they do not want to be convincing but that they want their contributions to the conversation to spark more ideas, more connections to other issues, and most of all, more research. Students often believe that a conclusion that is challenged or disputed is weak; scholars believe that conclusions so obvious that no one will argue with them are not worthy of publication; "claims that are arguable and solicit disagreement are a sign of an argument's viability, not its failure."¹⁷ In other words, where students see weakness, academics see impact.

Textbooks, a genre of writing familiar to most students, provide exactly the kind of unambiguous claims these students expect. They intentionally present their content as objective, undisputed fact, obscuring not only the author's point of view but his or her authorial voice as well. Avon Crismore calls this style of writing "textbookese," an



"emotionless writing style with the author flattened out by prose written from a third-person, 'objective' point of view."¹⁸ While students may want this kind of clarity, it is not what they need. Richard Paxton shows that this kind of neutral, objective writing actually prevents students from using scholarly texts to construct their own meaning. He found that students had an easier (though not an easy) time constructing their own meaning from texts that included two things: a clear, first-person authorial voice and a brief, but explicit, meta-discourse placing the text within its larger intellectual context.¹⁹

Students need to see that the academic texts they are reading are written by real people, with intellectual agendas, biases, and points of view. They need to see how scholars blend their ideas with ideas from others to create new knowledge, before and after an article is published. Peer-reviewed journal articles neither explicitly do these things for students nor should they. Textbooks are obviously written for students; but, while they help students to learn what scholars "know," they are rarely written in a way that helps students learn how that knowledge came to be. While faculty, including librarians, all play a critical role in putting these texts in context, the growth of the participatory Web creates a useful tool for this task—a supplement to textbooks and the literature of a discipline and a place where both the author and the conversations are emphasized rather than obscured.

Beyond the Textbook: Scholars' Blogs

The participatory Web is both social and transparent. Millions use it to talk about their lives and work, and scholars are no exception. These qualities mean that it is possible for anyone to watch the process of scholarly knowledge construction as it happens. At the same time, scholars use tools like blogs to talk about the research that is being published in more formal, traditional channels. In both of these ways, the dynamic information and communication technologies that make up the participatory Web provide opportunities for students, with

guidance, to enrich their understanding of the peer-reviewed research that they are required to use in their papers and projects.

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In this section, we present several examples that illustrate this potential. It is important to realize that the participatory Web is dynamic, and any specific example captured today may be different tomorrow or superseded by something else altogether. The overarching point to

remember is this: informal channels of scholarly communication can enhance information literacy instruction, whether it is delivered by a librarian or a classroom instructor. Instruction librarians should be aware of the ways that scholars in the disciplines they work with are using the Web to communicate. Helping disciplinary faculty to see that there are new ways to connect students with scholarly research other than the peer-reviewed journal is an important role for librarians to play.



Blogging

In the last 10 years, hosted blogging tools like Wordpress.com and Blogger have made publishing online extremely easy; this ease of use is a significant factor explaining the rapid increase in the number of blogs published and read.²⁰ Scholars have not been immune to the attractions of these platforms, which allow them to publish thoughts and commentary directly and quickly.

Group blogs bring together related perspectives from a variety of authors and allow scholars to share the work of providing regular updates. The authors write individual posts but frequently engage with each other as well, bringing together multiple perspectives on a topic or a discipline. One of the best known examples of this is Crooked Timber (<http://crookedtimber.org>), a group-authored blog bringing together a self-described “cabal of philosophers, politicians manque, would-be journalists, sociologues, financial gurus, diletantes [*sic*] and flaneurs.”²¹ The bloggers at Cliopatria (<http://hnn.us/blogs/2.html>) are almost all historians and write from that disciplinary perspective.²² Group blogs are not limited to the social sciences and humanities. Cocktail Party Physics (<http://www.twistedphysics.typepad.com/>) brings together a group of scholars from related disciplines to “create a salon-like virtual space where contributors and readers alike can chat about the latest news and ideas in science—with a twist.”²³

An example from Crooked Timber shows how the commentary available on these informal platforms can provide the meta-commentary students need in order to make sense of published research. Philosopher John Holbo posted a reflection on teaching Descartes’ *Meditations*. He talks about the explanations he uses to help his students understand Descartes and even mentions students’ common reactions to the work. Historians, fellow philosophers, and others (some pseudonymously) use the comments to question assertions made in the post and in earlier comments. Because the blog is widely read and multidisciplinary, the conversation includes helpful signposting—commenters identify their disciplines and explicitly contrast their approaches to those from other disciplines.²⁴ Simmons argues that it is important that teachers, in the library or in the classroom, show students the conventions of their discipline and that they do so “in relation to others.”²⁵ For students reading Descartes, this post could provide a useful meta-commentary that contextualizes the text and also shows that different communities approach the task of reading and understanding this text in different ways.

In 2008, computer science professor Noah Wardrip-Fruin used his group-authored blog, Grand Text Auto (<http://grandtextauto.org>), to open up the practice of scholarly knowledge construction in a very direct way. He used the blog to solicit peer reviews on his book, *Expressive Processing*. The book’s publisher, M.I.T. Press, solicited traditional peer review for the book at the same time. At the end of the experiment, Wardrip-Fruin reflected on the experience. His reflection covered several points, and two are important here. First, that by tapping into an existing community, he was able to engage in a more

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conversational process of review than he had with his blind reviewers at the press, which led to reviews that were useful in different ways from those from the press. Secondly, the diversity in the blog's existing audience was a boon, bringing voices into the review process that would have been left out otherwise.

It makes sense to do a blog-based review because we have, in blogs, already-existing online communities that attract university-based experts, industry-based experts, and interested members of the public. The way we use blogs also already encourages discussion and questioning.²⁶

While it is unlikely that many scholars will repeat Wardrip-Fruin's peer-review experiment, this example illustrates well how blogs highlight the collaborative, conversational nature of scholarly knowledge creation, pushing those qualities front and center and making them visible to those not "in on" the conversations themselves.

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While group blogs allow academics to share the labor of publishing fresh content, some academic bloggers prefer to go it alone. In these cases, the content of the main posts will reflect the clear author's voice that students need, while the comments provide a diverse, multidisciplinary perspective. Female Science Professor's popular blog (<http://science-professor.blogspot.com/>)

provides a picture of life as a scientist at a major research university. The practice and politics of publishing peer-reviewed articles are frequent topics of discussion for Female Science Professor, as they are at Historiann (<http://www.historiann.com>), historian Ann Little's pseudonymous blog.²⁷

Graduate student blogs can provide a particularly useful take on scholarly research and writing. Graduate students are themselves figuring out the rules of the disciplinary communities that they seek to join, but they are not yet so immersed in that culture that they take the knowledge for granted. When they write about these experiences publicly, their thoughts are a rich source of insight about scholarly practice. Sociology graduate student Wicked Anomie (<http://wickedanomie.blogspot.com/>) regularly offers these glimpses behind the curtain. For example, as she struggled to develop an academic writing style, she shared the things that worked for her with her audience. In one such post she summarized an outline that she found useful; it provides a line-by-line template for writing an academic journal article.²⁸ While she is writing from the author's point of view, students learning to read peer-reviewed articles in sociology could find this meta-analysis of "writing about writing" useful as well.

Academic Blog Portals

The number of academic blogs is extensive and growing. Unfortunately, that does not make finding interesting authors or useful posts easy. It is possible to do keyword searches for blogs using tools like Google Blogs (<http://blogsearch.google.com>) or Technorati (<http://technorati.com>), but it is difficult to get a clear picture of the conversations across



a community this way. There are also directories, like the Academic Blog Wiki (http://www.henryfarrell.net/wiki/index.php/Main_Page) that can provide a starting point, but there are so many blogs listed in general directories that finding what is useful can be hit-and-miss. One of the best ways for librarians—and students—to find active, useful academic blogs is to seek out smaller communities of bloggers and browse the conversations happening there.

ScienceBlogs (<http://scienceblogs.com>), despite the “science” moniker, is actually an excellent place to find academic bloggers writing about a wide range of disciplines. The content is divided into six “channels,” which allow for easy browsing; these channels include humanities, education, and the social sciences as well as disciplines more commonly thought of under the heading “science.” Scientopia (<http://scientopia.org/blogs>) is a similar portal, launched in the summer of 2010. This multidisciplinary community of bloggers exists to “explore the interplay between scientific issues and other parts of our lives with the shared goal of making science more accessible.”²⁹ ResearchBlogging (<http://researchblogging.org/>) takes a slightly different approach, aggregating blog posts instead of blogs. Authors can tag any post about peer-reviewed research with a shared icon; all tagged posts are then aggregated at the ResearchBlogging site.

A number of academic blogs are affiliated with traditional magazines and journals, and these provide other good places to find concentrations of useful resources. Nature Blogs (<http://blogs.nature.com/>) is a good example of this kind of portal. It includes blogs written by authors and editors directly affiliated with Nature Network, and it also aggregates posts from a large number of, what it calls, “third party science blogs.”

Blog carnivals offer another way to browse informal scholarly conversations online. These are similar to special issues of journals in that they pull together a set of recommended posts on a topic or theme. Some are one-time events, but several are ongoing, rotating from one blogger to another within a particular community. Scientia Pro Publica (<http://scientiablogcarnival.blogspot.com/>) is a particularly useful example of an ongoing blog carnival. This carnival’s goal is to provide a platform that will push “the best” posts on science, nature, and medical topics to a broad audience. In this context, “the best” posts must not only be high-quality discussions of important topics but they must also be clear and accessible to general, not expert, audiences. A searchable directory of blog carnivals can be found at Blog Carnival (<http://blogcarnival.com/bc>).

Discoverability and browsability are important and will be discussed further below. A recent controversy at ScienceBlogs illustrates a positive side effect to blog communities, whether these communities are created deliberately on group blogs or grow organically around portals, publications, or carnivals. In August of 2010, ScienceBlogs allowed PepsiCo to purchase a blog on the site as a space where the corporation could write about their sponsored nutrition research. The content on this blog was clearly marked as advertising, but the damage was done. Several bloggers chose to remove their blogs from the site; and, in their farewell posts, some themes recurred. Most notably, these bloggers felt that they had collectively built up the credibility and reputation of ScienceBlogs; and, by making the decision to change the type of content allowed on the site unilaterally, the editors had devalued that effort and betrayed trust.³⁰

This example is interesting to information literacy librarians for more than one reason. It provides a good example of the dangers of relying too heavily on gatekeep-



ers, or the authority provided by a publishing outlet, in the evaluation process. This experience illustrates the importance of finding out what people are saying about a source, formally or informally, as a part of an information literate evaluation process. It also illustrates how much easier the participatory Web makes finding and capturing these conversations. The dynamic, speedy publishing cycle of blogs, combined with the energy of existing knowledge communities, create a powerful resource to help students see the knowledge creation process in action.

Public Conversations: Context and Consensus

The scholarly conversation that happens after an article is published is crucial for understanding the value, utility, and significance of that article. Librarians are well versed in concepts like impact factors and citation counts that suggest that post-publication citations are the most important measure of an article's value. Despite their importance, these conversations have generally been invisible to the students being asked to find and use peer-reviewed journal articles. They are not taught to find out what is being said about the scholarship they find. The dynamic and participatory Web has a lot of potential to help students connect with this crucial part of the scholarly knowledge creation process.

Consider the discovery of plagiarism that unfolded in the comments of a post at Pharyngula, a blog authored by evolutionary biologist P. Z. Myers. Myers posted an excerpt from an article that had been accepted but not yet published by the journal *Proteomics*. He argued that the article's conclusions were unsubstantiated and titled his post "A baffling failure of peer review." Early comments on the post focused on how the authors might have "gamed" the peer-review system. At this point, the post would already provide useful fodder for a classroom discussion about the peer-review process.³¹ In this case, however, the discussion also had an impact on the scholarship; by the 72nd comment, just hours after the original post, evidence of plagiarism was cited that ultimately led to the article's rejection.³²

Climate Change and Argumentative Fallacies, a post by writer and journalist Julian Sanchez on his eponymously titled blog, brings together several themes. He argues that a non-expert does not have the skills or the knowledge to evaluate expert research on its own merits:

Sometimes the arguments are such that the specialists can develop and summarize them to the point that an intelligent layman can evaluate them. But often—and I feel pretty sure here—that's just not the case. Give me a topic I know fairly intimately, and I can often make a convincing case...to an ordinary educated person with only passing acquaintance with the topic. A specialist would surely see through it, but in an argument between us, the lay observer wouldn't necessarily be able to tell which of us really had the better case on the basis of the arguments alone—at least not without putting in the time to become something of a specialist himself.³³

Sanchez continues by suggesting that the only way for non-experts to wade through an argument between experts is to understand where consensus lies. In other words, they cannot evaluate an article outside of its context. By themselves, most scholarly articles do not provide that context. The participatory Web provides an excellent way for stu-



dents to find out about the texts, to understand the context, and to find consensus and controversy.

Discussion

One of the most important roles that instruction librarians can play in this environment is to show disciplinary faculty that there are alternatives to the peer-reviewed article. Faculty members engaged in research in a discipline have their own ways of staying informed in that discipline, methods that are not easily adopted by students who are not yet full members of that knowledge community. Beyond this, they have internalized the shared principles of their discipline's practice and may not notice when those shared principles are opaque. Librarians usually teach in disciplines in which they do not do research and can potentially understand where the practice of the discipline is confusing to students more easily than their partners among the disciplinary faculty can.³⁴ It is important that librarians advocate for their students' needs, pointing out gaps that might prevent the students from being successful.

There are important cognitive reasons, discussed above, why expanding students' exposure to different kinds of scholarly conversations is helpful. There is a related reason why they should know about scholarly writing on the participatory Web, and this related reason is very compelling to faculty in the disciplines. When college students graduate, many lose access entirely to the proprietary databases and expensive digital content, the link resolvers and the interlibrary loan systems they learn to use in many library instruction sessions. Some may retain limited access to scholarly materials through the workplace, large public library systems, or geographic proximity to academic libraries, but few will have the kind of broad and increasingly seamless access to information that academic libraries strive to provide. If graduates have only learned to access scholarship using proprietary tools and services, then they will have difficulty accessing scholarly sources after graduation, even if they are motivated to do so.

Conversations about what students will need to know when they leave college can lead to opportunities to work directly with faculty. Two recent examples from Oregon State University illustrate this point. In one case, librarians asked to meet with some of the faculty in a department in the College of Health and Human Sciences to discuss course guides and tutorials. That specific conversation turned into a broader discussion about what it means to be an information literate professional in their field. As a result of this discussion, two librarians were invited to present at the department's weekly seminar series, showing faculty and graduate students how to use the participatory Web to connect to scholarly online communities. Graduates of this department have a clear need to stay current with peer-reviewed research on the job, and many will be working independently or for not-for-profit agencies that are not affiliated with institutions that can afford to subscribe to scholarly databases. Both of these factors add a sense of urgency, making faculty very motivated to find new ways to help their students meet this need. Once these possibilities sparked faculty interest, moreover, expanding the

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conversation to include how to help today's students understand and use scholarly research better was an easy matter.

A similar dynamic is visible in the regular workshops OSU librarians conduct for the campus Center for Teaching and Learning. These workshops are designed to help faculty create inquiry-driven research experiences for students. In these workshops, as in the collaboration described above, the argument that students will need to know more than proprietary databases to be information literate, lifelong learners is a very compelling starting point. Once the door is opened to talking about the participatory Web in that context, it is easy to shift the conversation to include arguments for using these sources even with students who still have access to proprietary resources.

At OSU, librarians and faculty in the writing program included lifelong-learning skills on a program level, using collaboratively crafted learning outcomes. These outcomes apply to 200-level courses; they focus on helping students develop the skills they will need to make information literate decisions after graduation, using tools and resources that are publicly available. In WR 222, English Composition, the librarian and writing faculty member further collaborated by revising the research assignment for the class and by revisioning the library instruction session supporting that assignment.

The new assignment specifically requires students to find "public conversations," both scholarly and popular, about their research topics. Instead of using their research to write an academic paper, students must produce a piece of "public writing" themselves, an editorial or opinion piece that contributes to one or more of the conversations they uncover about their topic. The library session that supports this assignment comes very early in the students' research process—after they have their paper assignment but before they have selected topics. In this session, the librarian focuses on browsing rather than searching, encouraging students to identify their topics while they take their first steps toward identifying conversations.

Librarians can integrate blog communities into a 50-minute instruction session fairly easily by presenting them as browsable spaces that students can use to identify topics or issues related to their topics. Of course, doing so does require the librarian to communicate clearly with the classroom instructor about the value and utility of these more informal sources. The librarian should also be ready to help students understand the difference between a blog post about an article and the article itself.

Finally, an easy way to integrate the dynamic Web into information literacy instruction is on course pages and in tutorials, which are themselves designed to support students' independent research processes. Blogs and social bookmarking sites often make their content available for syndication via RSS; and popular course page software, such as Springshare's LibGuides or OSU's Library à la Carte, makes it easy for librarians to link students with a research-focused Twitter feed or a feed of recommended posts from Google Reader right along with more traditional library-provided resources. Linking to blog communities is an easy way to provide browsable content. Tagrolls from Delicious or CiteULike provide a way for students to browse handpicked content in a variety of ways. These not only point students to useful resources but they also are a good way to add some dynamic content to a course page, encouraging students to return to the page for new information.

It is important to provide modules or text explaining how the informal conversations connect to the published literature; without guidance, many students will not fully grasp



the difference between the article and the blog post about the article. It is also important to provide instruction on finding known items in the library's collections to help students who want to track down the sources discussed in the conversations they find.

Conclusion

Helping students negotiate the gap between the assumptions they bring to higher education and the expectations of their professors is not a new role for librarians. It would be completely unrealistic to expect a librarian to convey in a reference transaction the complex and nuanced ways peer review serves the scholarly knowledge process; the option to check a box that limits search results to "peer reviewed" will continue to serve an important purpose in point-of-need instruction. Librarians can, however, be mindful of even the most basic explanations offered to students about what peer review is and why scholars value peer-reviewed information. Knowing how peer review is commonly practiced within a discipline and where scholars' conversations about research in disciplines are happening online should be subject area knowledge nearly as essential as knowing which databases and journals cover particular subjects.

In addition to familiarity with traditional information resources, librarians who teach should also pay attention to the places on the Web where scholars talk less formally about their work. Following blogs or social networks where scholars are talking about their research and practice is not only an excellent way to keep current with the discipline but is also a way to find current teaching materials where the meta discourse, the disagreements, and discussions taking place between scholars are available to students; and the authors are visible in a way that they will never be in the scholars' finished products.

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Notes

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