

Using *The Filter Bubble* to Create a Teachable Moment

*A Case Study Utilizing Online Personalization to Engage Students
in Information Literacy Instruction*

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Engaging students in information literacy instruction is often a challenge. The authors discuss ways they adapted information literacy instruction at York College of Pennsylvania based on concepts discussed in Eli Pariser's book, *The Filter Bubble*. By approaching the students with a course theme that was interesting, timely, and personally relevant, the authors were able to break through student's own filters to explore higher level information literacy concepts and critical thinking. Students took a personal interest in the topic, which translated into greater student engagement and increased participation. It also fostered deeper reading and reflection about how information is communicated and used by a variety of audiences.¹

Introduction

For several years, Information Literacy 101 (IFL) was a 2-credit, required course at York College of Pennsylvania. The course was officially dissolved in May of 2012. During the time period it was offered, student response to the course was often mixed. While some students saw the value in the instruction, others felt that the course was not relevant. Like many institutionally-mandated courses, faculty sometimes found engaging students to

be difficult. In the spring of 2012, the authors made a radical shift in their curriculum, hoping to improve the level of student engagement and participation within their classes.

In previous semesters, the authors had based their instruction on the course's electronic text (library.ycp.edu/ifl), integrated with supplementary materials within the course-management system. In the fall 2011 semester, one of those supplementary items was a *TED Talk* video, "Beware Online Filter Bubbles," with Eli Pariser (2011a). The video was used as a springboard to prompt in-class discussion about bias and its effects. Based on student responses to the video and their expressed interest in the topic of online personalization, we decided to try using this concept as the theme for the entire class. Pariser's book, *The Filter Bubble* (2011b), was chosen as a required textbook for our sections of the course.

In *The Filter Bubble*, Pariser explains that materials perceived as relevant are allowed past the filter; messages perceived as irrelevant are filtered out, not just by Google & Facebook, but by our human brains as well (Pariser, 2011b). In order for instruction to be truly effective, we have to penetrate our students' filters, convincingly demonstrating that strong information literacy skills are relevant to their daily lives. Pariser's book served as an anchor for course content, allowing us to connect our exploration of information literacy skills, tools, and methods back to a larger theme—a theme that students were readily interested in because they have experienced "the filter bubble" themselves.

The goal of this article is to present a novel way to teach information literacy skills by using the concept of online personalization as a starting point for research and reflection on the nature of information, how information is communicated, and how it is used. The chief benefit of this approach is that it addresses one of the major challenges facing any teaching librarian who steps into a classroom: convincing students that the material being taught is relevant to their lives. It also offers the librarian a starting point for teaching a variety of other concepts, including (but certainly not limited to) evaluating information, researching current events, and information ethics.

Literature Review

As many authors have discussed, traditional information literacy instruction can often be challenging for both students and instructional librarians (Drabinski, 2011; Piper & Tag, 2011; Spence, 2004). One widespread difficulty is presenting materials in effective ways that promote student interest and engagement. Piper and Tag (2011) explain that "there has been a growing disconnect between the instructor experience and the student experience," especially in terms of motivation (p. 322). Whilst librarians see the value in information literacy instruction, students often enter instruction sessions expecting the sessions to be "dry, boring, and easy" (Piper & Tag, 2011, p. 322; Spence, 2004). For a variety of reasons, librarians struggle to create classes that are "creative" and "compelling" to students; instruction is often taught using texts and materials that, while informative, do not capture student interest (Piper & Tag, 2011, p. 319).

Our own experience bears this out. Despite consistently high ratings regarding the instructor's performance, in course evaluations during the fall 2009 and 2010 semesters, only about 50% of students rated the course to be of overall value to them. As a result of constant efforts to enhance instructional methods and course materials, by the spring 2010 semester, the number of students rating the course to be of overall value had risen to 64.7%. Of the students who did not rate the course to be of overall value, several students used the comments box to clarify that it was "the subject itself, not the instructor" they were taking issue with. One of the most telling comments was that the instructor does "as best she could with the information being taught. I like how she got outside sources of things we covered in class to make the comparison." Piper and Tag (2011) do concede that many librarians attempt to include active learning in their information literacy instruction, but they stress that "without a thematic content that provides intellectual challenge, these efforts do not solve the issue of student engagement" (p. 323).

The challenges librarians face due to time restraints have also been heavily explored in the literature. Library instruction outside of a credit-information-literacy-course-environment often focuses on tools and mechanics rather than activities which stimulate higher order thinking (Stevens & Campbell, 2008). Detmering and Johnson (2011) argue that “we typically find ourselves addressing practical concerns related to finding sources or using databases, rather than teaching students to think more critically about information and the information-seeking process as a whole” (p. 103). These time restraints often prevent us from working with students to “conceptualize research in a larger sense, as a process of critical thinking” (Detmering & Johnson, 2011, p. 103). Drabinski (2011) emphasizes that library instruction often is taught “akairotically”—at the “wrong time, in the wrong context” and with the wrong pedagogy (p. 82). Jacobson and Mark (2000) also worry about this, arguing “if students do not immediately apply their information literacy skills to a content-based course assignment, they tend not to recognize the relevance of such skills to other courses” (p. 261). This can lead to challenges when we want students to retain the skills we teach and transfer those skills beyond a single instruction session.

One of the stumbling blocks for many students is that information literacy skills often have no context, thus no personal relevance or value for them. Barry (2011) discusses the importance of creating a “real-world” experience for students engaged in research. Leibiger (2011) points out that the traditional information literacy assignments and instruction do not promote “natural learning.” The generic research paper assignment often “provides no context or justification for the writing of the paper beyond the fulfilling of a course requirement” (Leibiger, 2011, p. 201). Thus students see the assignment and time spent in the library as simply something needed “to attain a certain grade, pass a certain course, or move beyond a certain semester in a student’s academic career” (Leibiger, 2011, p. 201). Since there is no real-life relevance for the student to assign a personal value to, the experience becomes in essence a “‘numbers game’ for both the student and the librarian,” where each are simply working to locate the number of specified resources appropriate for the assignment (Leibiger, 2011, p. 201). As Chen and Lin (2011) point out, the role of librarians and their approach to information literacy is constantly changing and we must adapt our roles in regard to students, faculty, and institutions in order to provide “appropriate learning experiences” (p. 408).

Another struggle for librarians is finding ways to break through the grab-n-go information habits of students. Leibiger (2011) refers to these habits as “googlitis” and describes it as “an over reliance on simplistic search techniques using Internet search engines and the extension of these poor searching skills to the use of library resources” (p. 188). Badke (2010) argues in his article, “How stupid is Google making us?”, that students do not take the time to choose the best results but “rather choose the ‘good enough’ of picking from the first few results” (p. 51). There may be a reason why students exhibit some of this behavior when they are doing online research. As Badke (2010) and others have demonstrated, constant exposure to the digital environment has an effect on how the brain processes information. Small and Vorgan (2008) have dubbed this effect “the iBrain.” In their investigations, Small and Vorgan (2008) used MRI scans to map the active areas of the brain during Internet usage. In comparing the brain function of novice Internet users with “digital natives,” the MRI images revealed that “the computer-savvy subjects used a specific network in the left front part of the brain, known as the dorsolateral prefrontal cortex. The Internet-naive subjects showed minimal, if any, activation in this region” (Brain Changes, para. 1). The dorsolateral prefrontal cortex plays an important role in our brains; it is used for quickly processing complex information and decision-making in the working, or short term, memory areas of the brain (Small & Vorgan, 2008).

When comparing the two sets of subjects, they found visible changes in the novice Internet user’s brain after only five hours of Internet use. They posit that these brain changes in response to Internet stimuli actually lead to enhanced cognitive abilities, such as better attention to visual stimuli and faster decision-making. Specifically,

We develop a better ability to sift through large amounts of information rapidly and decide what's important and what isn't—our mental filters basically learn how to shift into overdrive. In this way, we are able to cope with the massive amounts of data appearing and disappearing on our mental screens from moment to moment (Small & Vorgan, 2008, *The New, Improved Brain?*, para. 1).

Although it may be a perfectly natural way to deal with the onslaught of information online, the problem with this adaptive response on the part of our brains is that it can get in the way of thoughtful, reflective decision-making. The “iBrain” behavior essentially amounts to rapid filtering out of less-relevant content using almost exclusively short-term memory. By contrast, when engaged in deep reading, it is the long-term memory areas of the brain which are active (Small & Vorgan, 2008). The less we use these deep-thinking neural pathways, the weaker those neural connections are likely to become. Flitting from link to link across the Internet can place stress on our brains, diminish our ability to read deeply, and have serious implications for developing strong information literacy skills. After all, it is the deep reading and the careful consideration of an author's arguments and evidence that lead to high-quality research projects.

One of the authors' goals when choosing an actual book as a text for the class was an instinctive desire to counter this grab-n-go approach to information. We hoped to encourage students to engage in sustained efforts at deeper levels of thinking and reading. Plus, as Badke (2010) states, “there is a special pleasure that can come from following a well-reasoned argument in a physical book” (p. 53).

Jacobs and Berg (2011) discuss the idea of “critical information literacy” as moving past simply locating and evaluating sources to developing a deeper level of critical reflection. Jacobs and Berg (2011), describe “critical information literacy” as “an attempt to help students see that information questions are deeply embedded within cultural, social, political, and economic contexts” (p. 389). A key point in this concept is making the instruction student-centered. Rather than librarians “depositing knowledge,” students become “critical co-investigators in the problem-posing education of information literacy” (Jacobs & Berg, 2011, p. 390). Spence (2004) stresses that in order for students to learn, they must “make changes in the generalized patterns that make up their knowledge of the world” (p. 489).

Using *The Filter Bubble* in the Classroom

It was precisely these challenges that pushed the authors towards a radical shift in the information literacy course at York College. While in the past we explored a variety of hands-on activities, ways to insert humor in our instruction, and focused on current events in an attempt to improve student engagement, this was the first time the authors approached the course with a consistent theme. We chose *The Filter Bubble*, by Eli Pariser as the required text for the course, opting for a “textbook” that isn't a textbook at all. *The Filter Bubble* is a book that is equally at home on a leisure reading shelf, a computer science library, or in a media studies collection. Written for a general audience, but containing a significant amount of research, it makes an excellent introduction to the concepts of web personalization and its implications for society. Rather than ask students to read about (or lecture to them about) information formats and retrieval tools, we asked them to read, discuss, and investigate one of their favorite tools: the Internet.

In his book, *The Filter Bubble*, Eli Pariser explores the personalization of information online. Nearly all major websites, from Google to *The New York Times*, use at least some personalization to drive the content displayed for a particular user, and what is deemed “relevant” to one visitor may not appear at all for another. When asked in an interview how much Google really knows about us, Pariser explains:

It knows everything I've searched for in the last few years, and probably how long I lingered between searching for something and clicking the link. There are 57 signals that Google tracks about each user, one engineer told me, even if you're not logged in. (Popova, n.d., "How much does Google really know about us," para. 7)

The result of this personalization, Pariser argues, is that each of us is surrounded by a unique collection of information online—our "filter bubble"—and the curators of that collection are mathematical algorithms that do not necessarily have our best interests at heart (Pariser, 2011b). Pariser (2011b) points out three dynamics of the "filter bubble" which make online filtering potentially damaging: users are "alone" in their "filter bubble," it is invisible, and users do not choose to enter the bubble themselves. When you combine short-circuiting of reflective thinking processes—the iBrain effect—with the personalization of web search results, there is a very real potential for getting stuck in what Pariser terms "The You Loop"—stuck inside your own self-reinforcing point of view, with little that is truly new or outside of your interests (p. 109). This goes to the very core of information literacy: without exposure or access to information and ideas, our decision-making process is hamstrung. Solutions to problems may lay just out of sight—existing, but inaccessible, like a misshelved book.

In our classes, there was no use denying that the Internet was typically our students' first choice for information retrieval. We realized that like most students, they tend to view the internet as a "fast and reliable answer provider" (Chen & Lin, 2011, p. 406). Rather than fighting this concept, we decided to use ideas in Eli Pariser's *The Filter Bubble* to allow our students to explore the web more fully. Together we became, as Jacobs and Berg (2011) would describe, "critical co-investigators" (p. 390). We did not prevent our students from using Google. Rather, we tried to allow them to learn and decide for themselves the limitations of web searching in the context of personalization. As Leibiger (2011) points out, "the answer to the problem of Googlitis in higher education is not to forbid the use of Google by students" (p. 211). After learning about personalization and seeing first hand in their own lives how this was affecting their access to information, students were not only able to recognize the limitations of web searching, they also were passionate about it.

Students were asked to keep a reflective journal online as they read the book. Their journal comments revealed significant cognitive, and even emotional, engagement with the material. Many students acknowledged the importance of learning about the issue and drew connections with their own experience or related it to another class. A few students were downright offended to discover that a mathematical algorithm was making decisions on their behalf without their knowledge. Interestingly, not all students view online personalization as a problem. However, even those students who felt that online personalization is an inevitable and useful adaptation to the growth of information online were, by and large, still interested in how it works.

Valuing Viewpoints

One of the easiest ways we were able to make the material immediately relevant to our students was by bringing in Facebook as an example of web personalization. Since almost all of our students had Facebook accounts and most checked those accounts several times daily, explaining how Facebook personalizes their newsfeed was something our students could quickly understand and explore for themselves. Pariser (2011b) explains how Facebook filters through your friends using "EdgeRank," an algorithm that mathematically ranks your Facebook news feed based on your relationship with the person the post is coming from, the type of content they are posting, and the timeliness of the event. The results of this ranking can mean that friends whose opinions and ideas you value, but perhaps do not click on as frequently, may be deemed less "relevant" and disappear from your news feed. In fact, Pariser (2011b) explains, the disappearance of his politically conservative friends from his Facebook feed was one of the catalysts that led to the writing of the book.

This was the first real breakthrough that we had with our students. In the past, having both sides of a perspective might have only been viewed as part of a requirement for an argumentative paper assignment. Realizing that Facebook was deciding to hide status updates of friends who did not share the same viewpoints as the students' was a big deal. Students could immediately relate to it. They knew they had friends who never showed up in their news feed, and they did not like that they were not in control of it. Suddenly, it was the students who were arguing to *us* the merits of reading what someone has to say even if it does not fit exactly in line with their viewpoints. Students even included in their end-of-the-course reflection statements such as "I firmly believe that to make an educated decision about anything a person needs to consider both sides of an issue." After students learned about Facebook personalization we were easily able to enter into a discussion as a class about bias.

Confirmation Bias and Cognitive Dissonance

In chapter three of *The Filter Bubble*, Pariser (2011b) describes the concept of confirmation bias as "a tendency to believe things that reinforce our existing views, to see what we want to see" (p. 86). Pariser explains in an interview that the "filter bubble" is a "comfortable place," a place filled with things we like and those things "that most compel you to click," but he also argues that the things we are compelled to impulsively click on such as "sex, gossip, things that are highly personally relevant" do not equal the "set of things we need to know" (Popava, n.d., "What, exactly, is 'the filter bubble'?", para. 3). Furthermore if we are only ever being exposed to things that reaffirm our belief system and make us comfortable, we are not able to really educate ourselves or engage in civil discourse. With Facebook as a starting point it was much easier for students to grasp this idea.

Learning theories tell us that development occurs when the mind is forced to change in response to new information which does not fit into its existing thought patterns. It is this cognitive dissonance or friction which acts as a catalyst for learning, as the mind must reorder and reorganize what is "known." Phelps (1990) posits a model of the mind based on Piagetian learning. New information is either processed by assimilation into the mind's existing thought structures, or the mind accommodates the new information by revolutionary changes in thought structure. This process is a balancing act, as the mind strives to create order and patterns. Phelps (1990) also tells us that

...development itself incorporates a negative principle in that its impulse to order must be constantly defeated if growth is to occur. The internal principle for change is disequilibrium. In order to be flexible and adaptive, our mental state must be always somewhat unfinished, disorderly, with potential for new arrangements and novelty generally (p. 391).

Phelps (1990) also encourages us to exploit this tension between order and disorder in our classrooms. As teachers, we should always be striving for ways to push our students out of their comfort zones, because that is where real learning occurs: when we are confused, unsure, and out on a limb, our minds must stretch to accommodate new ways of thinking.

However, as Phelps (1990) reminds us, development is not inevitable. Individuals may choose to reject new information rather than make the mental adjustments necessary to assimilate and accommodate data that is contradictory. When we see disengaged, bored students, or hear comments questioning the need for research instruction, we are seeing this phenomenon in action. Stagnation of development is also one of Pariser's (2011b) chief complaints about online personalization, because both personal and algorithmic filters limit our ability to experience new ideas and form new mental connections.

By exposing students to new information about online personalization, which they generally viewed as both new and important, we created a moment of cognitive dissonance. Recognizing that there is something you do not know is the first, essential step in the learning process. Once we had their attention, our role as teachers became a

much easier task. The students were much more aware of the limits of searching on the Web and more interested in refining their information literacy skills. In this approach, a class discussion of the limitations of online personalization can be used to set the stage for a lesson on the mechanics of searching research databases.

Web Personalization vs. Relevancy Ranking

As discussed, our students were no different than the majority, with the typical “grab and go” approach to searching. The results they most often chose were the first few results that appeared on a page. However, when we started exploring web personalization, they were able to really analyze these results. As part of an in-class activity, students were asked to examine their Google results, compare them with their classmates, and then hypothesize why they thought particular results were showing up for them based on their personal viewpoints, likes, needs and spending habits. In essence, students were learning about their own potential biases. Students were also asked to examine the ads that were present on their first page of results. We discussed how closely personalization is tied in with advertising. As Badke (2012) argues, “if a search engine can optimize the user’s wants in the first four or five results, it can both please the user and get the most relevant advertising into the user’s view” (p. 48). Students noticed that their ads on Facebook and other social networks directly tied in with their web browsing and that they often saw ads on Facebook advertising a product that they had searched for on the web only moments before. Likewise, when searching the web they were able to see advertisements that correlated with things they had mentioned or “liked” on Facebook. These discussions prompted reflective thinking about the implication of exposure (or lack of exposure) to information, such as this student comment: “Pariser brings up a good point when he says that Google puts us in our own filter bubbles, alone. We don’t make the choice to have our searches filter to something we would ‘rather see.’”

The authors also discussed how web personalization has affected students’ expectations for research both in search engines, as well as databases. Based on the extent of personalization on the web, students now *expect* to get results that are immediate and relevant to them wherever they search. We considered both the positive and negative aspects of this and it allowed the instructors to easily segue into a discussion about relevancy ranking in academic databases. As Badke (2012) points out “despite all the hopes of artificial intelligence and the semantic web, search engines are still just finding words” (p. 49). Personalization can make researching on the web especially difficult because Badke argues, it is “based on the assumption that what I was is what I will be” (Badke, 2012, p. 49). However, each time a student embarks on a new research assignment they are essentially a new person and venturing into “fresh territory that the machinations of personalization can’t address” (Badke, 2012, p. 49). Despite this, as much of the literature discusses, students still often use the same strategies in academic databases as they do in search engines like Google (Badke, 2012). Academic databases have even started to cater to this type of searching, offering a simple Google-esque search box in lieu of the multiple options in the advanced search screen. Badke (2012) argues that many of the major databases “have advanced by leaps and bounds in tailoring search to what I ask for instead of what the software thinks I want [but unlike search engines] proprietary databases are not dependent on advertising to keep them going” (p. 48). This was a major point we brought up in our classes. We asked students to carefully consider how information changes when it is being tailored to a potential audience of consumers.

Evaluating Sources and Using Rhetorical Analysis

Standard Three of Association of College and Research Libraries (ACRL) Information Literacy Competency Standards for Higher Education tells us that “the information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system” (ACRL, 2000). In practice, mastering these skills is often a major challenge for students. Achievement of Standard Three requires comprehension, critical thinking, evaluation, and perhaps even a re-ordering of the students’ own mental maps.

Research into the development of students' rhetorical inquiry skills offers librarians some potential explanations for why students often have difficulty selecting and critically evaluating sources (Cooper, 1990; Phelps, 1990; Salabrici, 1999).

Salabrici (1999) indicates that "reading and writing should be 'critical' activities that push students beyond the stage of comprehension and interpretation to a higher level of evaluation or critical consciousness . . ." (p. 628). This overlap between literacy, rhetorical skills, and information literacy skills has important implications for teaching librarians. Without sufficient comprehension, evaluation is nearly impossible. Without critical evaluation of sources and their content, selecting appropriate information sources becomes a hit or miss activity for students. In advocating for a rhetorical approach to information, Salabrici (1999) encourages teachers "to view language both in terms of production and consumption," as an interdependent relationship between authors and their audiences (p. 629).

Source evaluation is often taught using a checklist or a rubric, such as the CRAAP test (Meriam Library, 2010), or charts delineating the characteristics of scholarly and popular sources. However, there are some risks to this approach, as it has the potential to discourage deeper engagement with the text. By focusing on discourse conventions, which Cooper (1990) defines as "the rules that readers and writers must learn and use in order to be a member of that community," we risk encouraging an over-reliance on information format and surface features and discourage the deeper evaluative skills we are trying to help students develop (p. 67). Burkholder (2010) warns us against assuming that students are simply "lazy, opting for the path of least resistance by choosing Web sites over journal articles" and instead considers the possibility that they may be "confused—or worse—unaware of the rhetorical implications of their choices" (p. 1).

In order to help students look beyond surface features and engage in critical inquiry, the authors introduced source evaluation not with a checklist but by using the rhetorical triangle as a framework for examining the contents of a message. The rhetorical triangle allows us to graphically represent the interdependent relationships of a text. By placing the author, the purpose, and the audience at the three points of the triangle, it becomes easy to see how the elements function together to create a particular message aimed at a specific audience. If we introduce a change to just one point of the triangle, for example, by replacing an academic author with a journalistic author, we are likely to see a dramatic shift in the language, detail, and tone of the content. The concepts presented in *The Filter Bubble* work particularly well using this rhetorical approach. Because the push toward personalization online is frequently driven by profit, the topic lends itself to discussions of what constitutes authority and how to evaluate sources for accuracy, evidence of bias, and ulterior motives.

Librarians are frequently asked to introduce students to the differences between scholarly and popular literature, and the idea of online personalization can serve as useful way to begin the class session. Nearly all students have some experience with advertisements following them across the web, and they quickly grasp the notion that in the online environment, their likes and dislikes, click signals, and browser cookies are being used to tailor content specifically for them, usually for the purpose of selling them something. Because students relate to the experience of being sold something as a consumer, they are already familiar with the rhetorical conventions used when an item is aimed at a popular audience. Asking them to diagram the rhetorical triangle for one of these advertisements engages them actively in the lesson. At that point, the librarian can introduce a scholarly article, give students several minutes to examine it, and then ask them to diagram the rhetorical triangle for the scholarly article. This becomes a fun and simple way to introduce some of the differences between popular and scholarly rhetoric.

Conclusions

The authors wished that they had more time to continue exploring these concepts in a semester long course environment. However, at the end of the spring 2012 semester the college retired the required information literacy

course, choosing to explore other curricular options for the freshman experience and orientation. Despite being only able to explore “the filter bubble” as a theme in our instruction for one semester, we do feel that it was a success. In past semesters, students responded to the course via formalized course reviews. As the authors noted, reviews had always been mixed and some instructors even received comments essentially applauding the instructor as doing as best as he/she could *considering* the material. Many students also commented about how they failed to see the relevance of the course. Due to the discontinuation of the course past spring 2012 the authors were unable to have a formal course review at the end of the spring 2012 semester. However, when we asked six different classes to reflect on the course in their research journals, student responses were overwhelmingly positive. Students praised the material, calling it “interesting,” “extremely relevant,” and “enlightening.” One student even added that the book filled her “with more information than any class I had from kindergarten to high school in only the introduction.” Others commented on how much they enjoyed reading the text, and some even encouraged friends and family who were not in the course to read course materials as well.

Most students were quite surprised to learn about Web personalization. Several found it “scary,” “creepy,” and “concerning.” Even if they had noticed certain trends online, most of our students had not realized just how ubiquitous that personalization is, or taken time to consider the implications of living in a filtered environment. The authors also found the materials to be much more rewarding to teach and thoroughly enjoyed the sometimes heated class discussions with heavy student participation. Students seemed to not only grasp the concepts but were able to build on them. One student included in her course reflection:

We are fortunate enough to live in a country where we are allowed to have access to any media we desire and therefore I feel by limiting ourselves to just what we like is not a good thing. It prevents us from being informed citizens and if we are not informed citizens how can we participate in democracy appropriately?

The authors feel that this course’s success is due largely in part to our students being able to connect the information to something that was personally relevant and interesting. Drabinski (2011), in her thesis on Kairos in library instruction, writes:

[T]eaching information skills at the right moment and in the right measure has the potential to transform library instruction from a dull, standards-based, technical exercise in banking education to a timely, contextualized, and highly-relevant classroom experience that equips students to critically intervene in the discourses that surround them (p. 4).

The authors feel that by setting the stage with an accessible theme which was relevant, observable, and encouraged self-discovery, we were able to slip in important information literacy skills that they might have not understood, valued, or used in another context. In order to move past our students’ “filter bubbles,” instruction had to first be personalized and interesting enough to get through them.

In terms of achieving our goals to increase participation and foster deeper reading and reflection, using *The Filter Bubble* as the textbook was an unqualified success. Where previously the authors had struggled with methods for encouraging students to complete the assigned course readings, it was clear from class discussions and journal entries that most students were, in fact, reading the book. Information literacy instruction includes learning about the purposes and characteristics of various types of publications. What better way to teach this than through actively engaging in the reading of a complete book and combining it with explorations of other formats along the way?

In many ways teaching with *The Filter Bubble* has changed the way we approach instruction, and we are constantly trying to think of ways to present information literacy concepts in a way that students can easily

understand, connect to, and find personally relevant. While the authors initially had the luxury of working within a semester-long course, the reality is that most students experience library instruction through course-integrated instruction or the simpler 50-minute, one-shot presentations. The time restrictions on these shorter sessions can make it difficult to include deeper thinking activities. The authors are exploring ways to incorporate larger concepts into smaller lessons. We are also exploring ways to collaborate with faculty to introduce some of these concepts and materials to their students before the library session, giving us time to work more closely with the concept while in the library. One benefit of Pariser's *The Filter Bubble* is that it is extremely versatile and has sections that could be easily tailored to instruction in a variety of subjects including English, Sociology, Communications, Psychology, and Business, to name a few. For those interested in learning more, please visit the site we developed, *Using "The Filter Bubble" to Create a Teachable Moment* (filterbubbleteachablemoment.wordpress.com), for additional ideas and more specific lesson-planning materials. We also invite those with ideas to contribute them on the site. We believe that online personalization and "the filter bubble effect" present an interesting, timely, and relevant opportunity to creatively examine information literacy from another viewpoint and hope our explorations prompt further research and reflection.

Notes

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