

## Discovery Systems are No Different: We Must Still Teach Searchers How to Become Researchers

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# Discovery Systems are No Different: We Must *Still* Teach Searchers How to Become Researchers

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A familiar aphorism among librarians states that only librarians want to *search*, whereas library users want to *find*. But what if what student users find diverges from what their professors tell them to find? This paper is a report from the classroom about how undergraduate students performed assignments specifically requiring use of our university's implementation of the Summon discovery system. This tool was implemented just before the semester began, so this is a provisional report of the results of our investigations underway this semester, drawn from two courses in a large research university. We will conduct additional assessments, using different methodologies later in the semester and expect to continue the investigation with future courses.

We worked with two of Brians' political sciences classes in the fall 2011 semester:

- PSCI 1014: Introduction to US Government. This class enrolls nearly 300 students in a large lecture hall. The course fulfills core-curriculum requirements and draws students of all majors and stages of progress toward their degrees, with almost one half of students in their first term in college. Students' previous exposure to Virginia Tech's library resources, services, and personnel is mixed.
- PSCI 3244: Political Communication. This upper-division course enrolls approximately 80 students, drawing primarily on majors in political science and communication. Political science majors must have passed a required research methods class in order to enroll; depending on which instructor they had for that class they may have previously worked with Pencek and/or may have been assigned the literature-search chapter in Brians' textbook, to which Pencek contributed.<sup>i</sup>

Students in both classes received the same assignment. The literature review assignment required them to retrieve a known article, and then find four articles related to the assigned article. Each student was assigned a complete citation. Before distributing the assignment, Brians used the citation to confirm the online availability of the article to the Virginia Tech community. On the day the literature review was assigned, Pencek came to each class and used a sample citation to demonstrate Summon's search, filtering and retrieval options. During the session, classroom response system (clicker) quizzes tested students' comprehension of the salient components of the Summon bibliographic record as well as key characteristics of scholarly articles. Particular attention was given to interpreting the abstract and the uses of the subject tags appended to it in the Summon record. Students were taught to access full text articles via GetVText, and to read for key ideas. Earlier in the term, Brians has demonstrated known-citation search and retrieval using Worldwide Political Science Abstracts, and the students used this tool to retrieve a required reading assignment.

The second part of the assignment required students to locate articles related to their assigned citation. They were required to use Summon to find two additional articles, and Worldwide Political Science Abstracts for two more. In the classroom instruction, Brians emphasized using the abstract, both in the bibliographic record and the article, as a guide to identifying the key points of an article (e.g., research questions, theory, etc.). Brians also noted that the abstract was simply a distillation of the article, so it was imperative that students read their assigned article consciously to uncover what might make other articles truly relevant to the assigned article.

## **What the Students Actually Did**

During the Summon instruction class, the students appeared to understand the assignment and how to use the tools. As the assignment deadline ap-

proached, however, many students surprised Brians and his Graduate Teaching Assistants (GTAs) by asking many questions that we thought had been adequately addressed. For example, a common question was “Can I Google Summon?” It is not clear if that question reflected the power of Google habituation, the marginality of the library to students, or the ineffectiveness of presenting library instruction in lecture format.

The other common question, “What should I put into Summon Search box?” suggested that students were at least working with the new discovery system but were unfamiliar with effective search techniques. For example, if when trying to find the assigned article, students only pasted-in the title, they normally were successful—which reflects both how Brians tested the Summon search when designing the assignment, and how Summon was demonstrated to the students. On the other hand, if students pasted-in the complete citation in Chicago style from the assignment sheet, they experienced more challenges. These difficulties may stem from Summon’s use of the truncated information from Web of Science.

Through this assignment, it became clear that sometimes the success of students’ finding the kind of articles that Brians wanted the students to find was a function not only of Summon, but of the underlying access technologies. Summon lies atop other library access technologies, the Serials Solutions link resolver (“GetVText”) and EZProxy (“Off-campus Sign-in”). Both technologies are standard elements in library instruction; their appearance and procedures for use have barely changed in nearly a decade.

While working through the link resolver display consistently confounds a surprising number of users, students in the upper-division class widely affirmed that further reminders about the sign-in were superfluous. Nonetheless, many of the students who approached the professor or GTAs about challenges with the assignment reported difficulties with the sign-in or GetVText. Sometimes article-level resolver links broke for no apparent reason, though Brians and the TAs were always able to demonstrate work-arounds at the journal level. More distressing from the library’s standpoint were

questions like “Do I have to pay for this article?” that showed that training and experience in the use and rationale for the Off-campus Sign-in had been ineffective for a substantial fraction of the students.

Once students found their assigned article, the task shifted to interpreting the assigned research and locating substantially related articles. For many students, this effort immediately highlighted their difficulties in reading the assigned article, and understanding its key research questions, theory and findings. Students who could not understand the assigned article had difficulty determining how other articles they found could be related enough (for the Brians’ intended purposes).

### **Today’s Research Environment**

Online, documents are disaggregated from the cues provided by their physical packages and physical space. Summon’s apparent goal is to simplify literature research for students; however, discovery systems conceal the variety and messiness of obtaining literature and conducting research. Thus, these tools move novice researchers even farther away from the underlying resources and these resources’ characteristics. Whether neophyte or experienced researchers, we used to physically *see* article or book’s qualities. Most of today’s students were raised and educated in a largely digital world, and thus have never seen print copies of many resources. Seeing an article in the entirety of a scholarly journal or a newspaper, for example, visually identifies their obvious differences.

Today’s literature searching differs from what occurred even 15 years ago in several important ways. Searchers are not physically in the library, where collocation of various resources in stacks used to provide extra cues. Additionally, subject headings from various sources may lack completely obvious meanings for the students.

Novice users may not know the content differences between such divergent sources as scholarly journals, journalism, or blogs. In years past, we would often see readers who fail to distinguish the content inherent in (and editorial control of) news stories versus opinion columns or letters to the editor in newspapers. Today’s digital sources vastly exacerbate this situation. A potentially strong tool in

Summon, the format distinctions (on the left column of the interface) may assume too much knowledge about various genres of information on the part of readers

### Summary and Implications

These tools and this generation of students require specialized instruction to obtain optimum literature research results. Absent this pedagogical effort, many students greatly struggle to use tools that may seem intuitive to many of us. Discovery systems break down disciplinary silos, but also burn down disciplinary scaffolding. The bottom line: Tools do not substitute for instruction by classroom faculty as well as by librarians. Similarly, on the student side, tools cannot become substitutes for the hard work of reading carefully and thinking both purposively and creatively. Thus, we recommend that students receive: (1) guided instruction and (2) more hands-on practice. Of course, though, these efforts require time in class and assistance by librarians, occupying time otherwise used to cover overtly substantive course content.

In response to the challenges faced in students' use of Summon in our courses, we have developed: (1) new learning modules that utilize clicker questions and a screen-shot research tutorial, and (2) a research tool battery for assessing both abstracting and indexing databases and discovery systems. In the short term, as this research project advances, we offer these to course instructors and to the instruction and reference librarians supporting them:

- It is critical that assignments be presented in ways consistent with students' experiences of information. Most of the students who struggled with this assignment seemed to not understand the term "related," though the concept seemed straightforward to us. Thus in future we will devote

class time to the indicators of relevance, much as we have done to pointing to characteristics in a bibliographic record that, taken together, indicate that an article is probably scholarly. Our perplexed students' questions suggested some points of departure, e.g., when is another work by the same author more relevant—for purposes of *this* research task—than another author's work with a similar title, or one appearing in the same specialized journal.

- Professors must remember that thinking like a researcher, even more than being an online searcher, is a learned skill. Skills that are second-nature to academic—articulating an interesting problem, making plausible hunches or explanations, deciding what constitutes evidence, and changing direction in the face of what one finds (or does not find)—are not innate. Instructors who expect their students to do research in the literature should devote attention to how features of discovery systems and subject databases at hand may facilitate this or, conversely, make it look too easy to identify "similar" scholarship.

Faculty are models of research behavior to their students. Professors should reflect on their assumptions about the fitness of discovery and search tools to their own research needs, just as they need to reflect on their assumptions about what students know. Even seemingly minor cues in an interface should be examined before an assignment and some may be worthwhile objects of scrutiny in class, both for the power and efficiency they give compared to Google and for the ways they may mean different things to naïve, intermediate, and accomplished researchers.

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<sup>1</sup> Brians, Craig Leonard, Lars Willnat, Jarol Manheim, and Richard Rich. 2011. *Empirical Political Analysis*. New York: Longman.