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Information Literacy Opportunities within the Discovery Tool Environment

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ABSTRACT:

Discovery tools such as Primo, EBSCO Discovery Service, Summon, and WorldCAT Local aim to make scholarly research more intuitive for students in part because of their single interface for searching across multiple platforms, including the library, fee-based databases, and unique digital collections. Discovery tools are in sync with the way many undergraduates look for information because they offer a more "Google-like" experience in contrast with previous methods of research that required first knowing which database to use, then searching each one differently according to its specifications. However, broad searches across multiple formats with different systems of controlled vocabulary force instructors to rethink the way they teach students to find information. This article will establish best practices to assist librarians in developing instructional classes for students to conduct research using a discovery tool.

AUTHOR KEYWORDS: information literacy, discovery tools, libraries, teaching methods, instruction, digital natives

The Ethnographic Research in Illinois Academic Libraries (ERIAL) study recently found that digital natives are ill-informed about how to search for information both online and inside the library (Asher and Duke 2011). They rely on Google and similar Internet search tools for their

academic work, but they still lack basic research skills. (Asher and Duke 2011, 84). Discovery tools such as Primo, EBSCO Discovery Service, Summon, and WorldCAT Local aim to make scholarly research more intuitive for students in part because of their single "Google-like" interface for searching across multiple platforms, including the library catalog, fee-based databases, and unique digital collections. There is a clear path between the visual display of these discovery tools and the 21st century methods of searching for information that students embrace.

Discovery tools are in sync with the way many undergraduates look for information because they offer a more streamlined experience in contrast with previous methods of research that required first knowing which database to use, then searching each one differently according to its specifications. These tools work best when users begin a search with broad keywords, as is the common approach to Internet search engines. Easily identifiable visual cues allow students to recognize different source types and navigate options to further narrow results.

However, the introduction of a resource discovery tool brings new challenges to librarians. Broad searches across multiple formats with different systems of controlled vocabulary force instructors to rethink the way they teach students to find information. Professional listservs have debated the pros and cons of these tools, with some librarians finding them only satisfactory for introductory and interdisciplinary searches. Many complain of multiple systems of controlled vocabulary. Still others find that these tools work well for freshman but that upper-level students should start with more specialized resources in order to locate more

targeted results. Overall, most librarians and instructors praise the simplicity and visual display of discovery tools that students can intuitively navigate.

This article seeks to establish best practices to assist librarians in developing instructional classes that introduce discovery tools to undergraduates and can be applied to both one-shot and course-embedded instruction. We will address the concerns of appropriateness to upper-level students by providing a scaffold approach to research that links discovery tools with customized resource guides for higher-level or capstone courses. These teaching methods will also allow undergraduate students to conduct independent follow-up research and migrate from the discovery tool to a specific database when their research level requires it. We will also suggest ways to modify supporting course guides and tutorials to reflect the unique characteristics of discovery tools for a more inclusive approach to research.

Discovery Tools

Due to the newness of resource discovery tools, very little has been written about them to date. Much of what has been published is overviews geared towards libraries in the process of choosing a product. Experts urge potential discovery tool purchasers to consider the depth and scope of indexed content, the mechanizations of the search, the ease of implementation, and the cost before making a decision (Luther and Kelly 2011, 67). "The challenge for academic libraries…is to offer an experience that has the simplicity of Google - which users expect - while searching the library's rich digital and print collections - which users need" (Luther and Kelly 2011, 66). Search characteristics such as the interface, relevancy rankings, and navigational

tools, plus the extent a library is able to customize these tools, are important aspects as well (Luther and Kelly 2011, 67).

Breeding focuses on the "key qualities" of these new tools, which "include better visual design, relevancy-ranked results, facets for drill-down through search results, presentation of cover art, enhancements of records with summaries and reviews, and the ability for users to rank items or submit reviews" (Breeding 2010, 32). Some discovery tools are also incorporating social media aspects that allow users to add tags to and share comments on resources.

With these new tools, librarians no longer have to explain that users need to search the library catalog for books and journal titles, but must go elsewhere to find full text journal articles. This is transforming the search for information as librarians have historically taught it. "Librarians have observed how they have gone from explaining the mechanics of search to focusing on evaluating search results" (Luther and Kelly 2011, 70). Discovery tools have forced students "to think critically about what they have found rather than how to find it" (Luther and Kelly 2011, 70). Researchers must now shift their initial focus from deciding which item type to locate, to first identifying major concepts or search topics suitable for a trans-disciplinary search tool.

Discovery tools move away from forcing librarians to constantly mention "brand names of publishers and providers" to encouraging a more user-friendly, streamlined process by which students may uncover material they otherwise might have skipped over (Breeding 2010, 34). "A great discovery interface should operate in a mostly self-explanatory way, allowing users to concentrate on selecting and evaluating the resources returned rather than struggling through the search tools that the library provides" (Breeding 2010, 34). Furthermore, he warns, "if

libraries fail to offer more modern tools for discovery, our users will gravitate even more toward the commercial destinations" (2010, 32).

Fagan voices concerns in her editorial, "Discover Tools and Information Literacy," that the convenience of a discovery tool masks the complexities of the search process and makes it seem much simpler than it actually is. "Discovery tools are about getting in and getting out," and work against users gaining an understanding of the differences in resources (2011, 174). However, she admits that these tools may be better at getting non-database users to begin to employ library resources, especially considering that post-graduation, students will most likely not be using library databases to search for information: "…College students will face a more Google-like world after graduation; do our information literacy programs prepare them for that world? How might a discovery tool play a role in new approaches to information literacy?" (2011, 177).

Usability studies

Two usability studies shed light on the way students use discovery tools and serve to guide best practices. In their usability study of Ebsco Discovery Service, Williams and Foster found the depth of material being searched resulted in large retrieval sets; however, no participant looked past the first page of results (2011, 184). Participants used limiters before beginning a search without prompting from the authors and were able to understand basic distinctions between books, academic journals, and periodicals (2011, 185). Post-search limiters, such as source type and subject, were used by all but one participant; however, those that were displayed in a prominent position were used the most (2011, 190). The authors determined that with so many details to consider, instruction is needed (2011, 195).

In his examination of usage statistics at Grand Valley State University Libraries after they introduced the Summon discovery tool, Way concluded that the use of full-text resources increased as a direct result of the implementation (2010, 219). "…While the myriad of databases available at most academic libraries provide users with more options than ever, they also have the effect of overwhelming users who have grown up using Google" (2010, 214). In addition, he found that there was a drop in the use of core subject databases, but an increase in the use of scholarly journals, suggesting that students were able to identify and access academic content using the discovery tool. A link resolver led to the increase of accessing newspaper articles as well (2010, 219).

Digital Natives

The ERIAL study investigated how students search for and evaluate information for their research assignments and made headlines when it found that students lack the methodological understanding to conduct a search for resources. "Google's simplicity and single search box seems to have created the expectation among students of a specific search experience within the library: in particular, a single search box that quickly accessed many resources and an overreliance on simple keyword search" (Asher and Duke 2011, 72).

This study is further supported by Bauerlein, who cited a 2006 Educational Testing Service (ETS) study of high school and college students, which found that students were "comfortable with the tools, but indiscriminate in their applications" (2009, 113). Applications included web site evaluation, understanding page-ranking criteria, and practicing efficient information organization methods. Furthermore, ETS scientist Irvan Katz states that (as quoted by

Bauerlein), “While college-age students can use technology, they don’t necessarily know what to do with the content the technology provides” (Bauerlein, 2009, 115-116). This “false sense of confidence” is echoed in a 2011 study conducted by the University Leadership Council (2011, 12).

Digital natives thrive in an environment steeped in multitasking, collaboration, and active engagement. In her detailed review of learning theories and motivations relative to Generation Y students, Weiler found that these primarily visual learners, however, lack critical thinking and evaluation skills needed to navigate today’s information universe (2005, 47). Baurlein concurs that computers deliver the information, but there is little evidence that this helps sustain learning (2009, 119). Furthermore, Asher and Duke state, “Making search easier for students can … be a double-edged sword: while it enables students to get to information faster and easier, it can also reinforce unreflective research habits…” (2011, 76). There is a “snatch and grab philosophy” in the online environment where students demand immediate results and expect a few searches on one website will complete their task (Sutherland-Smith, 2002, 664). Students can find the information, but teaching them how to critically evaluate what they retrieve is the key. “Integrating critical inquiry with techno-literacy leads to increased learner autonomy and cooperation, which can stimulate the desire and motivation to learn for the sake of learning” (Ahrin and Cormier 2007, 564).

Best Practices

These best practices were developed to take advantage of digital natives' ability to intuitively navigate a "Google-like" search interface, while focusing on the need to teach them the critical thinking skills that will serve them in their university years and beyond.

Focus on developing search terms

Discovery tools work best when users begin a search with broad keywords, as is the common approach when using Internet search engines. Having students complete a research worksheet or concept map where they are required to develop a broad search term, then narrower terms and synonyms will prepare them for using the discovery tool. Explaining how to combine search terms using Boolean logic will help them narrow their search if needed. As discovery tools incorporate the classification terms of each individual database it searches, keyword searching can provide broader results across many different resources. Limiting to a subject or thesaurus term searches only the resources that utilize those terms. For example, limiting to a subject thesaurus term in EBSCO's Discovery Service will only retrieve items that have those terms in the each database authority file the tool searches. In this instance, the search eliminates items that use Library of Congress subject headings. A better use of these different sets of controlled vocabularies is in developing more concise terminology for a keyword search. Explaining intricacies of the discovery tools' search algorithms is not always necessary, especially for freshman, but students should be reminded that discovery tools still require old-fashioned trial and error (and, in some cases, creativity) when coming up with search terms.

Teach limiters or facets

The vast amount of content that discovery tools search at one time can bring overwhelmingly large sets of retrievals. Keyword searching works best with these tools, but can also retrieve unrelated content. The wide range of limiters that can be used, both before and after a search, gives students the opportunity to plan a detailed search, and evaluate the results. Students with specific source requirements can limit by item type such as book or peer-reviewed article before a search. Students can immediately focus on search strategies using key concepts and appropriate commands thus eliminating less relevant material. For example, students with an assignment requiring three peer-reviewed articles published after the year 2000 can set publishing date and item type limiters before or after their initial search. Then, they can evaluate options available to further narrow results based on a more targeted set of retrievals.

Emphasize critical thinking

Now that librarians no longer need to spend valuable class time on explaining the intricacies of different search engines, instruction can focus on evaluating the search results. With their broad range of content, discovery tools weave together search results that include various item types and multi-disciplinary content. Thus, it is vital that students are taught to recognize the difference between formats in order to make informed decisions as to whether the results are relevant to their topic. Visual cues allow students to recognize different source types, but students still need to be taught the differences between magazines, scholarly journals and trade publications, how they fit into the information cycle and their appropriate uses in various course assignments.

Other opportunities for critical thinking exist when teaching with a discovery tool. Selecting appropriate limiters, pre- and post-search, requires students to critically evaluate their search retrievals to determine what facets, if any, will retrieve a more focused set of items.

Use the discovery tool as a scaffold for subject specific databases

Depending on the type of assignment and your institutional holdings, remember that discovery tools might serve as more of a supplement than the crown jewel. Discovery tools offer a new and comprehensive search capability, but they are a starting point, and in many instances, should not be the only search engine that students use in their research. They can bring content from obscure or little-used to databases to the forefront, but the sheer size of retrievals may also bury other relevant content. Cross-disciplinary searches may stand to benefit the most from discovery tools, but highlight subject-specific databases as appropriate, and never assume that all electronic holdings are represented to the fullest extent in a discovery tool.

Develop supplemental subject guides

One of the best things about discovery tools is their trans-disciplinary approach to holistic research, which connects multiple platforms with a common starting point. Librarians can maximize on this by creating supplemental subject or course guides for students who wish to either incorporate a variety of non-traditional resources or simply explore other facets of a topic that might not be accessible via the discovery tool or library resources alone. These guides are another way to direct users to subject-specific databases for more-targeted information that may be buried in a discovery tool search.

Emphasize interlibrary loan

Discovery tools' vast retrievals bring to the forefront materials that a library may not own and give librarians the opportunity to highlight their institutions' interlibrary loan (ILL) services. Discovery tools can easily direct students to request materials, either electronically or in print, from other institutions. Information on ILL services is not always included in freshman one-shot instruction sessions and librarians will need to decide if the students' research topic and the library's in-house resources make this necessary. For more in-depth instructional courses and upper-level classes, ILL services, with clear directions for patrons wishing to submit a request, should be a part of the dialogue.

Conclusion

"When content is abundant, finding the right content becomes the challenge" (Luther and Kelly 2011, 67). However, the "Google Generation" of present-day undergraduates enters university without the research, evaluative, or organizational skills necessary to conduct appropriate intellectual inquiries as expected. With discovery tools, librarians have a new opportunity to teach information literacy to students by using a resource with a search interface that is familiar to digital natives. These best practices serve as a guide for librarians who need to adapt their instruction plan to this new resource.

In the future, as discovery tools continue to develop and more companies add their versions to the market, best practices will evolve and new ones will emerge. The social media aspects of these tools will become more prevalent and will give librarians another way to creatively engage students in information literacy instruction. Further usability studies could

shed more light on how students use and interact with these tools and aid in shaping their approach to research.

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