Hopes, Impressions, and Reality: Is a Discovery Layer the Answer?

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Note: With Thanks to the UIUC Library Web-Scale Discovery System Implementation Team

ABSTRACT: Web-scale discovery systems are increasingly more prominent on library webpages and their use as an undergraduate research tool has been widely promoted. When the University of Illinois at Urbana-Champaign undertook implementing a discovery layer, a team within the library was appointed to closely examine the potential of such a tool and in doing so documented some surprising results. This session will share the results of our testing using student research topics and captured search logs and pose questions for others to consider when implementing discovery systems and determining their role in library instruction, particularly as it relates to undergraduate student research. Are they appropriate tools for undergraduates? Can they replace the multitude of subject-specific databases? What sources should be included in a discovery layer? In this session we seek to delve more deeply into such questions and ultimately examine a critically important question: Is discovery the answer?

Participants will:
- Be able to identify strengths and weaknesses in discovery system searching in order to help users determine the best resource for their searches
- Be able to develop and apply testing strategies related to user search behavior and expected student learning outcomes in order to evaluate the role of a web-scale discovery layer in library instruction

What Do You Think?

Is a discovery layer the answer?

If not, why not?

If yes, to which question?

Web scale discovery *can be considered a service capable of searching across a vast range of preharvested and indexed content quickly and seamlessly.*

Jason Vaughan in Web Scale Discovery Services. *Library Technology Reports*, *47*(2011), 5-29.

The ***Primo*** discovery platform harvests and indexes local library collections, such as bibliographic records, digital collection materials, and items within institutional repositories, and provides a common interface for discovery of these materials ... Primo can be configured to search remote repository indexes and blend the library's local collections with the remote index results ... Primo Central extends the base Primo discovery experience by also searching a large preharvested central index of article-level content from a variety of publishers and aggregators.

Jason Vaughan in Web Scale Discovery Services. *Library Technology Reports*, *47*(2011), 5-29.

Primo at UIUC

- Searches Voyager OPAC records, Local Digital Content (e.g., IDEALS), and Selected Primo Central Content
- Availability:
  - Library Staff: October 2012
  - Users: November 2012
- Access:
  - Integrated into Easy Search Federated Search System
  - Beta Availability as Separate Single Search Box
  - Separate OPAC + Local Digital Content Scope

Web-Scale Discovery System Implementation Team

"… a working group of the Library's Content, Access, Policy, and Technology Committee (CAPT). Overall, the working group is responsible for the planning, implementation, and assessment of the Primo web-scale discovery system in the University Library on the Urbana campus"

Current Membership

- **Lisa Hinchliffe,** Coordinator for Information Literacy Services & Instruction (**Public Services Lead, Co-Chair)**
- Michael Norman, Head of Content Access Management (Technical Lead, Co-Chair)
- **Susan Avery**, UGL Instruction Librarian
- Jay Heldreth, Visiting Access and Mobile Services Research Programmer
- **Jenny Johnson**, map librarian, special collections
- Bill Mischo, search & discovery integration w/Easy Search, usability
- **Sue Searing**, public service perspective, interface design & usability
- Wendy Shelburne, collections: e-resource title acquisitions
- Robert Slater, usability, communication, interop w/ Library Gateway
- William Weathers, Web-scale metadata position
- **Sarah Williams**, public services, life sciences subject librarian; past experience with implementation of web scale discovery system
- **Beth Woodard**, staff training; liaison to RRSS; Reference Services Committee

Known Issues with Implementation

- Does not consistently de-duplicate records
- For a comprehensive author search, must include multiple forms of the author name to eliminate false combinations
- Indexing of title metadata not as extensive as in Voyager or vuFind
- EBSCO results are not included in Everything search results
- Sorting re oldest date only works properly in the UIUC Online Catalog search scope – does not work with PCI records
- Holding details for serials with hundreds of print holdings cannot be loaded/displayed in the expand holdings feature

Librarian Responsibilities

Professional Competencies for Reference and User Services Librarians

http://www.ala.org/rusa/resources/guidelines/professional

Critical Thinking and Analysis

Goal: A librarian provides high quality services by carefully analyzing both information sources and services.

Strategies:

- Uses electronic and printed media to connect users with highly recommended, carefully selected sources for topics of greatest interest to primary users.
- Synthesizes a variety of information sources in order to provide the most relevant information to each patron.
- Evaluates information use patterns based on data collected as a result of information service operations and uses the results to enhance services to users.
- Applies knowledge about the process of information seeking to structure information services for users.

Professional Competencies for Reference and User Services Librarians
http://www.ala.org/rusa/resources/guidelines/professional

Information Resources

Goal: A librarian assesses and evaluates resources in all formats in terms of objective standards and how well it meets the library's user needs.

Strategies:

- Assesses the content of resources in the print and virtual collections for accuracy and currency.
- Determines the authority of these resources.
- Identifies any bias or point of view in an information resource.
- Evaluates new information sources appropriate for the primary users.
- Reads reviews of new information resources to complement the librarian's own judgment.
- Writes and publishes reviews of new information resources.

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Information Interfaces

Goal: A librarian evaluates the format, access, and presentation aspects of resources as part of the overall assessment of the value of tools.

Strategies:

- Identifies any factors that impede the use of the resource.
- Determines if there are alternative information resources that have better user interfaces.
- Communicates with the information resource designers concerns about usability.

Professional Competencies for Reference and User Services Librarians
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Bringing Critical Thinking and Analysis to the Tasks of Assessing Primo as Information Resource and Information Interface

USER EXPERIENCE

- Usability Testing (December2012)
- 14 Users
- General Findings:
  - Screens Too Detailed and Confusing
  - Complaints re So Many Clicks to Full Text
  - Undergraduates Found Most Useful
  - Faculty Found Least Useful
    - Prefer Subject Databases
    - Prefer Easy Search
- Results Used to Streamline Facets and Revise Custom Tile/Search Tips

User Behavior

- Unique "Primo in Easy Search" Environment = Local Information Ecosystem with Search Logs
- Reveals Patterns of User Choices Relative to Options
- Extracted 150 Searches Where User Accessed Primo at Some Point
- Analysis Included:
  – User Ended in Primo – Yes/No
  – Successful Primo Results?

Findings of Log Analysis

- 150 Searches
  - 87 (58%) ended in Primo
    - 42 (48%) successful results
    - 35 (40%) unsuccessful results
    - 10 (12%) could not categorize
  - 63 (42%) ended elsewhere
    - 9 (14%) successful results
    - 51 (81%) unsuccessful results)
    - 3 (5%) could not categorize

- Results:
  - Many More Questions
  - Documented Difficulty of Understanding User Behavior Without Access to Primo Search Logs

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Does Primo Have a Role in First-Year Instruction?

Factors:

- Student Experience
- Faculty Expectations
- Instruction Philosophy
- End Results

Student Research ⟺ Librarian Responsibility

Critical Thinking and Analysis

- connect users with highly recommended and carefully selected sources

Information Resources

- evaluates resources in all formats in terms of objective standards and how well it meets user needs

Information Interfaces

- Identifies any factors that impede the use of the resource

Who is the first-year student?

- Dean Martin, Mickey Mantle, and Jerry Garcia have always been dead.

- Eminem and LL Cool J could show up at parents' weekend.

- "Dude" has never had a negative tone.

- Having a chat has seldom involved talking.

- A Wiki has always been a cooperative web application rather than a shuttle bus in Hawaii.

Beloit College Mindset List 2017

Who is the first-year student?

- 26% who took ACT met all four benchmarks for college readiness

- 43% met or exceeded SAT benchmark of 1550

Chronicle of Higher Education

- 64% feel they are adequately prepared to use technology

ECAR Study of Undergraduate Students and Information Technology, 2013

First-year Research Practices

PIL found:

- 74% struggled to find keywords and create search strategies

- 57% stymied by irrelevant results

- 43% have trouble make sense of/tying together their information

Learning the Ropes: *How Freshmen Conduct Course Research Once They Enter College,* Project Information Literacy (2013)

First-Year Faculty Expectations (UIUC)

- Locate at least three scholarly secondary sources.

- You must use at least six secondary sources. These sources must be credible and of the highest caliber in relation to your topic.

- Locate at least three peer-reviewed secondary sources that specifically address your research question.

First-year Instruction Learning Outcomes (UIUC)

Students will distinguish types of information resources (free online, such as Google, and subscription library databases) and their roles in academic research in order to select the most appropriate sources for their research.

- The curriculum includes discussion of the resources students commonly use focusing on advantages/disadvantages of various information sources or class review of a variety of resources about a similar topic.

Students will select and search databases in order to locate relevant resources for their research projects.

- The curriculum utilizes Academic Search Premier (EBSCO) as the primary teaching tool. The focus is on understanding the necessary concepts to successfully search library databases and become familiar with aspects of database functionality including broadening and focusing a search, locating full-text, saving and e-mailing articles, and using database thesauri. The concepts taught can be transferred to searching other databases.

Criteria for Evaluating Results

Important factors in evaluation of results:

- Relevancy

- Credibility and Timeliness

- Number of Results

- Faculty Expectations

Does Primo Fit?

Inquiry Question:

For first-year composition, is Primo a better information literacy learning environment than Academic Search Premier?

Method:

- Identify student research topics from first-year writing classes
- Follow procedures taught in library instruction

Compare and Contrast

Keywords	Primo: Advanced Search; Articles and More	Primo EBSCO	Academic Search Premier
global warming, media, perception	5258	6011	32
sororities, university, hazing	180	713	102
higher education, for-profit, impact	1,329	35,357	126
sleep, college students, academics	2,673	12,814	369

Looking Deeper into Primo Results

exercise "mental health" "college students"

– Limit to peer-reviewed journals

– One result among the first ten is relevant

– Some focus on college students

– Many irrelevant:
"older Asian Indian immigrants"
"therapeutic lifestyle changes"

Looking Deeper into Primo Results

procrastination "college students" "time management"

- – Limit to peer-reviewed journals
- – First result: 1994,focused on time management in the workplace
- – Other results: 2000, 2003, 2004, 2011(2), 2012 (2), 2013 (2)
- – Two of the first ten results have nothing to do with college students
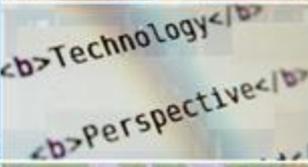
Study Conclusion

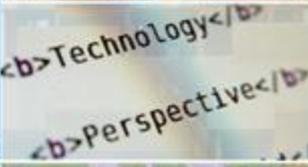Affirmed Practice of Using Academic Search Premier (EBSCO)in First-Year Information Literacy Instruction Program

Summary:

Usability, Search Log Analysis, and Assignment-Based Assessment

UIUC Methods for Applying Critical Thinking and Analysis to the Tasks of Assessing Primo as Information Resource and Information Interface

How has your thinking changed as a result of this session?

Questions?
Comments?
Discussion?

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