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Hashtags & Filter Bubbles: Guiding Students on Their Research Quest

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ACRL Information Literacy Frame: Searching as Strategic Exploration

Discipline: Arts & Humanities

Subject: English Composition and Rhetoric

Instructional Strategies: Metacognition; Reflective Learning; Learning Transfer

Special Populations: Undergraduate Students; First-Year Students

Everyone loves a good story. The best research projects have all the same elements: characters, conflict, action, and resolution. Whenever instructors and librarians meet with introductory composition courses, we are challenging students to tell their own research story. At our university, instructors and librarians collaborate. Working together, we like to make the challenge specific by asking them to pitch their initial ideas using just five simple, three-word sentences (noun-verb-noun). We borrowed the idea from Pulitzer-award-winning journalist Jon Franklin, who uses a similar technique to structure nonfiction prose.[1] Unlike conventional outlines, the noun-verb-

noun format forces writers to focus on essential actions. Unlike conventional outlines, students seem to like the challenge of the oddly specific rules: only five sentences total, only active verbs, only three words per sentence. It is brief. It is simple. It is also surprisingly hard because it requires research writers to define their purpose and trace their process clearly.

ACRL Information Literacy Frame: Searching as Strategic Exploration

As a way of practicing what we teach, let us give you an example of how we approach the ACRL frame, Searching as Strategic Exploration.[2] At the heart of this specific frame is a standard plot structure: the search or quest! In narratives, a search usually requires the protagonist to leave behind their everyday life and (often in the company of others) to confront some challenges before finding the object of the quest. Think about Dorothy seeking the wizard in *The Wizard of Oz*. Or Bilbo Baggins seeking the ring in *The Hobbit*. Or Indiana Jones searching for that lost ark. You get the idea. As a result of the search, the protagonist usually gains new insights and wisdom. Is that not what we hope our students will find as a result of their own strategic research explorations?

The protagonist in our story is, not surprisingly, the student researcher. The researcher is accompanied by other characters who sometimes help and sometimes complicate the quest. These characters include Google, library databases, librarians and composition teachers, and a special appearance by Eli Pariser, thanks to the magic of TED Talks. Here is the plot outline:

1. The Quest: Students seek information.
2. Google limits alternatives.
3. Students lose perspective.
4. Databases reveal alternatives.
5. The Resolution: Students gain perspective.

That is just a snapshot but it quickly identifies the central challenges: How do we motivate students to go beyond Google in their research quests? How do we help them gauge when a shortcut can help or when it might be wise to detour? How do researchers learn to recognize obstacles as well as allies and alternatives?

As we think about the specific ACRL frame of Searching as Strategic Exploration,[3] extending a search or quest metaphor can help students

transfer knowledge from one familiar context (such as Google searches) to a new setting (such as academic databases). Perkins and Salomon distinguish between close transfer, where we use similar skills in similar contexts, and far transfer, which requires a cognitive leap for us to see connections in very different contexts.[4] That is, if we would like students to use their knowledge of Google to think about academic research explorations, why not start them down the search path with Google to forge a connection and spark new questions? Since transfer rarely occurs spontaneously, librarians and instructors guide students on their research quest by identifying general principles, what Meyer and Land call "threshold concepts"—the central ideas that allow learners to fully participate in a discipline.[5] As learners cross these thresholds, they start to question previous ways of understanding and gradually learn to see themselves and their knowledge in new ways.

The student researcher, our protagonist on an academic quest for information and insight, is likely to confront some challenges. Hofer, Townsend, and Brunetti encourage us to think about where students struggle and why they struggle by asking, "What is the underlying concept that students need to grasp in order to cross that learning threshold?"[6] They identify seven threshold concepts for information literacy. While Hofer et al.'s threshold concepts do not map exactly onto the ACRL frameworks, they are very similar. We want to focus on just one of them for the purposes of this lesson: "Research solves problems."[7] As Hofer, Townsend, and Brunetti explain: "That research has a purpose beyond the compilation of information seems obvious to librarians and academics, but beginning scholars struggle to see the point of the generic 'research' paper because it is removed from their real-world context of information retrieval and use. Understanding the role of research in academia helps students understand research as a nonlinear, integrative process of finding and using information."[8] We extend Hofer et al.'s work with a targeted activity to help learners question their previous ways of searching for information and gradually consider their relationship to knowledge in new ways.

Instructional Strategy: Reflective Learning

We introduce the idea that research solves problems (and the ACRL practice of Research as Strategic Exploration) by showing students a video of Eli Pariser's TED Talk, "Beware of Online 'Filter Bubbles'"[9] In nine min-

utes, Pariser makes a compelling case that the same online search tools that make our lives so convenient have "a dangerous, unintended consequence."[10] Pariser contends that the results are so tailored to our personal tastes that "we get trapped in a 'filter bubble' and don't get exposed to information that could challenge or broaden our worldview."[11] As students watch the video, we ask them to jot down facts that interest or surprise them. After the video is over, they write a brief paragraph about their overall reaction to the video. By asking students to write as they watch, we encourage metacognition—a reflective process that draws attention to one's own ability to know and process information. Metacognition is one of the "habits of mind" identified in "The Framework for Success in Postsecondary Writing."[12] In our activity, the act of writing lets students reflect on their own thoughts and questions while also letting them reflect on how a common search engine may shape their knowledge.

Instructional Strategy: Metacognition

Metacognition is a crucial step in knowledge transfer. We want students to consider *how* and *why* they might draw on and adapt processes that they have used in the past. As instructors and librarians who guide the research quest, we encourage reflection and transfer with a series of focused questions that shift the activity from writing to discussion. When were the last two times they needed to find information? What did they need to find and how did they find it? Did they evaluate the information? Were they (are they) aware of filters? Are filters ever useful? Who decides when to apply filters? Who controls the filters? This sequence of writing, reflective questions, and discussion helps students understand the ways in which research involves strategic exploration—as well as the ways that research reveals and solves problems, which is a key threshold concept for information literacy.[13]

Instructional Strategy: Learning Transfer

Once students grasp the concept of research as strategic problem solving, they are prepared to transfer their familiarity with social media's discourse conventions to explore new resources and create effective search strategies. We ask students to consider how Instagram, Twitter, and Facebook hashtags function as a means of categorizing and cataloging social media

content. We then ask them to explore hashtags as a way to search and retrieve metadata and keywords in an academic database. When students not only create tags for an article but also compare their tags to those that their classmates generate, they burst the filter bubble that traps many novice researchers. They learn to explore and vary their terms. Librarians make the bridge for this learning transfer by explaining how databases also use indexing and search terms for articles; in much the way that the students can see some similarities and differences among their hashtags for one article, they begin to understand that articles can be indexed by different terms in a database. If the students are on a quest to find a variety of articles, they should prepare a variety of terms as one of their search tools. As students seek and explore new search options, they fulfill their quest and develop a stronger set of tools to carry with them on future research journeys.

The following activity asks students to reflect critically on their choice and variety of search terms.

Lesson Plan

Learner Analysis
Typical Student
- While originally designed for advanced first-year students, this lesson works well with most first-year and sophomore students. The activity asks students to use a common social media skill—tagging—and transfer that knowledge to understand how indexing and metadata work in databases and how they can use that knowledge to strategize their searches.

Orienting Context and Prerequisites
Pre-Instruction Student Tasks
- Students should have research questions in mind or drafted before the session.

Instructional Context
Classroom Setup
- This session should be held in a room that contains movable seating so that students may work comfortably in groups.

- The room should have a whiteboard, chalkboard, or another method for students to write their article tags on so that the whole class can see them.
- If the librarian is wrapping up the class with a brief database overview, a computer podium that projects onto a screen is necessary.

Pre-Instruction Work

- Prepare a brief lecture about how databases use metadata/indexing terms for article retrieval. An example that we have found useful is asking students to raise their hands indicating who calls a can of Coke a "pop" and who calls a can of Coke a "soda"? A can of Coke is the same thing no matter what people call it; just as different people use different terms for the same thing, databases may use different words and phrases to index an article.
- Locate a suitable magazine/newspaper article for the tagging exercise and make enough copies for students in class. This article should be long enough to generate multiple terms but short enough that it can be read or scanned quickly to complete the activity in the time allotted.
- Select a good database with a broad scope of content if there is enough time in the class session for a brief demo: Academic Search Complete is a good choice.

Learning Outcomes and Activities

Learning Outcomes

1. Students will transfer their knowledge of and skill with social media tagging to a greater understanding of metadata and indexing.
2. Students will apply this knowledge to create more effective search strategies.

Learning Activities

Students will tag a short article with descriptive tags, individually and in groups, and compare the variety of tags that they generated. After a short lecture about the similarities of social media tags to database metadata, students will then generate search "tags" for their research topic.

Lesson Overview

1. Tagging Activity *(LO1, 30 minutes, essential)*
   - Students either bring a short essay that they have read previously or the librarian can pass out a short newspaper article that can be easily skimmed.
   - The librarian places students in groups of three or four.
   - The librarian asks students to "tag" the article as if they were sharing them on social media. Students have ten minutes to perform this task.
     - ▷ They must generate at least six tags: three tags can use terms found in the article and three must use terms not found in the article.
   - After ten minutes are up, the librarian stops the activity.
   - The librarian asks one student from each group to write the tags on the whiteboard. No duplications!
   - The librarian facilitates a discussion about similarities and differences among the tags.
   - The librarian explains how databases search metadata/indexing terms for articles. The librarian asks students to think about the different terms they generated for the same article. Therefore, it's better to use different terms to find a variety of articles.
2. Search Term Brainstorming and Database Demonstration / Workshop *(LO2, 30–45 minutes, essential)*
   - Students write their topic/research question down and generate at least six "tags" they can use to search.
   - Students then pass their research question and search terms to a partner. The partner generates six new "tags" for research question and returns it.
   - The librarian points out that students now have many search terms to use.
   - Next, the librarian briefly introduces an applicable database to class.
   - Students work on their own searching for resources while the librarian roams and facilitates.

Assessment
Assessment goals

Students will successfully transfer their skill and knowledge regarding social media tagging to a greater understanding regarding database indexing and metadata. Students will use this new knowledge to create better and more varied search terms for their research project and be more strategic in their choice of search terms.

Assessment Tools
Formative Assessment

Through observations, the librarian assesses student understanding of article tagging from student contributions on the whiteboard and from class discussion. The librarian provides constructive feedback during these activities to address any identified gaps in knowledge.

Summative Assessment

Summative assessment occurs as the students implement their learning to create multiple and varied search terms, not only for their research questions but also for their partners.

Authentic Assessment

Authentic assessment can be provided through the inclusion of evaluation criteria related to searching in the researched essay's evaluative rubric. Note that the rubric for the assignments assesses not only the students' strategic retrieval of outside information but also whether they found and addressed multiple perspectives surrounding their essay topics (see below Appendix).

Appendix 19A.
Evaluative Rubric For Essay 2

EVALUATIVE RUBRIC FOR ESSAY 2	
PURPOSE. Clearly conveys a central focus; accurately, clearly, and credibly synthesizes and evaluates information from differing perspectives.	
Emerging ⟷	⟷ Mastering
• → Does not identify a clear focus or structure, which results in a disorganized evaluation¶ • → Does not provides sufficient or appropriate supporting details to persuade or educate readers¶ • → Does not represent the differing perspectives accurately	• → Clearly and accurately conveys evaluation of the texts as well as subsidiary, embedded, or implicit aspects ¶ • → Maintains a balance of primary and secondary details and issues without rambling or losing focus. ¶ • → Recognizes nuances of rhetoric that convey authority, and credibility
AUDIENCE: Identifies and considers **others' perspectives and positions** that are important to evaluating the issue effectively	
Emerging ⟷	⟷ Mastering
• → Focuses primarily on a single perspective and fails to establish credibility and authority. ¶ • → Does not consider readers' knowledge, needs, or assumptions (e.g., fails to establish context for the reader or fails to provide supporting details)—or does so superficially.	• → Thoroughly addresses and evaluates multiple perspectives noted previously, and establishes additional credibility and accuracy from outside information. ¶ • → Identifies and addresses the readers' knowledge, needs, or assumptions in ways that fully engage the readers' interest.
CONVENTIONS: Conveys **conclusions, implications, or and consequences** (i.e., offers a clear and reasoned synthesis and evaluation of different perspectives)	
Emerging ⟷	⟷ Mastering
• → Does not follow the format/genre conventions for this situation. ¶ • → May have chosen an inappropriate style or mode of delivery (too formal or informal)¶ • → Has difficulty with the conventions of grammar, spelling, punctuation, and word usage for this situation ¶ • → Does not follow the conventions for citation or documentation in this situation¶ • → Fails to convey conclusions, implications, or consequences	• → Genre conventions are used effectively. The information is well-organized and formatted. ¶ • → The style is clear, accurate, and well-suited to the intended purpose and audience. ¶ • → Conventions of mechanics and grammar are correct¶ • → Any sources are accurately and ethically acknowledged. ¶ • → Identifies and discusses conclusions, implications, and consequences considering context, assumptions, data, and evidence. ¶ • → Objectively reflects upon his or her own assertions.
TROUBLE SPOTS: Anticipates obstacles that could get in the way of what the writer wants to achieve.	
Emerging ⟷ ¶	⟷ Mastering
• → Fails to anticipate obstacles in terms of audience, purpose, and/or conventions. The content may be inadequately developed, incomplete, or compromised by major errors that disrupt or distort meaning. Content may not be original or may not be accurately cited.	• → Anticipates obstacles and questions¶ • → Proofreads/rehearses to present a polished final project that is free of distractions or disruptions. ¶

Notes

1.   Jon Franklin, "Stalking the True Short Story," in *Writing for Story: Craft Secrets of Dramatic Non-Fiction by a Two-Time Pulitzer Prize Winner* (New York: Plume, 1994), 70–90.
2.   Association of College and Research Libraries Board, *Framework for Information Literacy for Higher Education*, Association of Research and College Libraries, http://www.ala.org/acrl/standards/ilframework.
3.   Ibid.

4.   David N. Perkins and Salomon Gavriel, "Teaching for Transfer," *Educational Leadership,* 46, no.1 (1988): 22–32.
5.   Jan H. F. Meyer and Ray Land, "Introduction," in *Overcoming Barriers to Student Understanding: Threshold Concepts and Troublesome Knowledge,* eds. Jan H. F. Meyer and Ray Land (London: Routledge, 2006), 3–18.
6.   Amy R. Hofner, Lori Townsend, and Korey Brunetti. "Troublesome Concepts and Information Literacy: Investigating Threshold Concepts for IL Instruction," *portal: Libraries and the Academy* 12, no. 4 (2012): 388.
7.   Ibid., 403.
8.   Ibid., 403.
9.   Eli Pariser, "Beware of Online 'Filter Bubbles,'" TED: Ideas Worth Spreading, https://www.ted.com/talks/eli_pariser_beware_online_filter_bubbles?language=en.
10.   Ibid.
11.   Ibid.
12.   Framework Task Force (Peggy O'Neill, Chair), "Framework for Success in Postsecondary Writing," *College English* 74, no.6 (2012): 525–33.
13.   Hofer et al., "Troublesome Concepts."

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