**Learning Objectives**

* Students are aware of the “algorithm bias” that is inherent in the technology of search engines (all search engines, from Google to library databases) and how this affects their search for information (and the concerns this bias has for social justice).
* Students understand ways to overcome this bias by 1) critically evaluating not just the individual resources found but also the search results in general , 2) using multiple resources for information retrieval, and 3) making use of experts and known, reliable sources

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| **Time****(mins)** | **Instructor Activities** | **Instructor Notes**  | **Learner Activities/Engagement** | **Resources Used** |
| 5-10 minutes | Break students into 4 groups; Each group will have 45 seconds to answer each and 10 seconds to switch. Do 5 rounds with each group revisiting where they started. Share back what was written. | Reinforce honesty; say what you think. “You can’t write anything critical that I haven’t heard before-- and I may even agree with the criticism.”The librarian can then take time to address some of the things written. “Technology” is always listed as a threat (sometimes “Google” specifically); this makes a good transition.  | Carousel activity Questions:SWOT analysis of libraries. Ask groups to lists the strengths, weakness, opportunities, and threats of and for libraries. | Poster board and white board |
| 15 minutes | Safiya Umoja Noble lecture--first two parts: * 8:55-11 over-reliance on algorithms\*
* 15:33-19:25 Google’s dominance and people’s faith in results\*\*

Then, discuss after about the three things we know about how Google’s algorithms work. Results get pushed to the top is1. Sites that generate money (commercial sites; sites with ads, especially those with “Google AdSense”
2. Sites that have a lot of traffic (popular sites)
3. Sites from companies that have power and clout and have made deals with Google
 | \*I stopped at 9:40 to share the popular “[don’t confuse your Google search with me BLANK degree](https://www.etsy.com/search?q=please+do+not+confuse+your+google+search)” meme. I mentioned it’s troublesomely elitist on one hand, but also talks back to the distinction between cursory info searches vs experts. After the clip, I stop when she mentions “students” are conditioned for the quick answer. I share we ALL are conditioned that way now. I shared a personal story of when I have over-relied on Google to diagnose a medical issue when a should have seen my doctor. Students recognize the “WebMD your symptoms” problem we’re all guilty of. \*\*With business students, I stop between the market share slide and the “trust” slide (at about 16:15) to ask “in the business world, what do we call a business with 83% market share?” (a monopoly) And “why can monopolies be a problem?” It helps bring it back to what they will be learning as business students. | Watch video clips | <https://www.youtube.com/watch?v=omko_7CqVTA>Watch 8:55-11:00; 15:30-18:50 |
| 10 minutes (5 to search; 5 to share) | Google Image Search exercise. Demonstrate an example by doing a GIS for “librarian.” Ask* What do you see?
* What don’t you see

After discussion, ask* “Do you think this is an ‘accurate,’ ‘fair,’ or ‘unbiased’ representation of a librarian?”
 | After student exercise, explain this is a good visual way to “see” the issues. The same can be done with a regular Google search and the text / video results retrieved.  | Triads search google for images; report back to the group what they found. Examples of business-themed things to look up include* Entrepreneur
* Business Leader
* Successful person
* Smart person
* Financial Analyst
* Rich person
* Poverty

Share back each example with the whole class. Ask the same questions as the “librarian” example. | Google Image Search  |
| 10 minutes  | Safiya Umoja Noble lecture-- last part* 38:55-46 Why this matters in actual searches

After the video, unpack some of the things that were included in the clip, specifically “cloaked” websites “sneaking” into results and looking for a specific, biased phrase will give you biased answers | Let students know this is the longest clip (7 minutes), and contains a sensitive discussion of violence and racism.* Example of cloaked website: search Google for Martin Luther King. martinlutherking.org came up on the first page between result number 2(!!) and number 6. We red the description below the link, but didn’t click on it to give them a page hit perpetuating the high ranking. I shared with the class that this is a site owned by Storm Front, one fo the most violent white supremacist hate groups in the US. And it came up really high on the results!
* Example of searching for something biased and getting a biased result: searched Google for “Dylann Roof” and autosuggest filled in “Dylann Roof democrat” and the top results there were to ultra-right wing websites “proving” the young mass murderer was a registered democrat. We searched “dylann roof republican” and we got results “proving” he was a republican.
 | Watch video | <https://www.youtube.com/watch?v=omko_7CqVTA>Watch 38:55-46:18 |
| 10 minutes | Discussion: “What are steps you can take to overcome ‘algorithm bias’?”Share thoughts on the board.Basic takeaways hoped to come out:1. Go past page 4 or 5 of results
2. Go directly to trusted sources
3. Use multiple search engines (i.e., Google, Yahoo!, library databases)
4. Be critical of the results you get and the sources they come from
5. Ask experts for opinions of information
 | If students can’t come up with things, might need to “seed” the board with the 5 takeaways. I also left with two “sound bites” to take with them:1. Search engines (whether Google or library databases) give you what you asked for, not what you need or what you necessarily want. If you asked a bad question, you'll get an answer that isn't great.
2. That joke about the old saying "I found it in the last place I looked" that answers "of course it was; if you find it, why would you keep looking?" --- yeah, keep looking after you "found it." Some really important stuff could be after you find what you were looking for.
 | Group discussion and share back |  |
| 5 minutes | Free-write / assessment:1. How did what you learned today impact the way you think about searching for information?
2. How do you see libraries / librarians helping you?
 |  | Individual free-write | Google form: [bit.ly/2dErr11](http://bit.ly/2dErr11) |

Overall observations of the 9 sessions of Fall 2016:

* The carousel activity was successful and the most lively of the activities. Only one of all of the classes raised her hand to say she’s even heard of a SWOT analysis.They’ll get much more in-depth instruction on that in their business classes (Prof Gomez suggests probably sophomore year is when they’ll really get that). As such, the students struggled with the “opportunities” part of a SWOT analysis. Partly because that’s hard to envision period, and partly because they didn’t see opportunities in libraries of the future from their experience as users. That’s an area we can better share, eh? (Results of the SWOT exercise were recorded and uploaded to Flickr: <https://flic.kr/s/aHskJNPWdh> ; some groups had more “fun” with it, especially the “threats.”)
* Interactive engagement was limited even when pushed, but most students at least paid attention. Most really watched the video clips. They may not have dynamically group-worked / crowdsourced their way to 5 take aways and I ended up having to tell them 5 takeways\*, but they were at least exposed to the content and seemed to take it in (even if passively). (\*a professor called me the next day and suggest that I do give them the takeaways whether they come up with them or not. He thought it was important to at least tell them the “answers” here to be aware of.)
* After video discussion, I didn’t like that I “lectured to them” as much as I did, but I felt they needed some help unpacking what they had just seen and connecting it to their lives. This is why I started to add some live Google searches to show she’s not “making this stuff up.”