Evidence Based Library and Information Practice

Research Article

Feel Good Incorporated: Using Positively Framed Feedback in Library Instruction Course Evaluations Using a Survivorship-Bias Lens

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Received: 25 Sept. 2024 **Accepted**: 2 June 2025

DOI: 10.18438/eblip30633

Abstract

Objective – This research project makes use of a large dataset of directly solicited positively framed student feedback on virtual library instruction in order to 1. Identify potential improvements to instructional instrument, and 2. Create method for using positively framed student feedback for instructional improvement.

Methods – Research team used content analysis to tag student responses using a rubric based on learning objectives and structure of instructional instrument. Tags were analyzed to identify patterns and categorize student-identified research skills.

Results – An interpretive lens based on concepts from survivorship bias was used to highlight frequency differences between student identified skills and learning objectives. Gaps were identified between expected range of outcomes and actual range of outcomes, highlighting potential areas of instructional instrument that could be improved or given greater emphasis to ensure retention.

Conclusion – A survivorship bias lens combined with a large dataset and a structured set of learning outcomes can make directly solicited positively framed feedback into a tool for instructional improvement.

Introduction

Some tasks seem so straightforward that one rarely reflects on whether one is performing them correctly. Tasks where a basic approach seems obvious enough to make conceptualizing improvement hard to imagine. But approaching any process without reflection can lead to complacency, create missed opportunities, and foster stagnation.

An example of this in library practice is instructional evaluation, especially evaluations with positive feedback. When conducting a library instruction session or workshop, positive responses to session evaluation questions (e.g. "I liked the brainstorm activity" or "keywords seem super helpful") may seem straightforward and simple, inspiring the librarian to continue doing what was well-received. But what if librarians are approaching such feedback backwards? What if positive feedback could be a mechanism for change, an opportunity to identify gaps by looking at negative space? And what if positively biased questions could be used to both highlight strengths and weaknesses? This article explores this perspective using a conceptual framework based on survivorship bias (the concept that research needs to directly account for promoted effects in data analysis), allowing for effective use of directly solicited positively framed feedback questions in instructional improvement.

Background

In 2020, due to COVID-19 lockdowns, The University of Illinois Chicago (UIC) pivoted to online library instruction. All UIC classes were taught remotely, and library instruction for first year writing courses converted to virtual sessions. As part of this, an asynchronous version of the first-year writing library instruction was created by UIC faculty (Aldred, 2020). This asynchronous class session used a Google form with a series of embedded video tutorials for library skill development and was used with 102 class sections during the 2020-21 and 2021-22 school years. At the end of the form-based instruction session was a reflection question, all students were asked 'What is the most useful thing you learned today?' This large dataset (average enrolment in each section was 25, which made for over 2500 possible respondents) provided a chance to see what students found useful from the set of tools and options laid out to them.

While this is a common question in library instruction, the feedback received may be treated with skepticism because it is framed in an explicitly positive way, in other words, the nature of the question only allows for positive or null responses. In survey design, biased questions are viewed with skepticism, because they will inherently elicit biased responses. A positively framed question presumes impact, and respondents will avoid criticism and try to find something good to say. Surveys often strive for neutral questions to get a wider range of responses from respondents. However, positive feedback from neutral questions is often unstructured to the point of being inapplicable.

To address some of these concerns, this research set out to apply a lens on the research that can make this common question useful. To do so, the researchers distinguish between types of positive feedback, Directly Solicited Positive Feedback, which uses biased questions to elicit structured positive responses and Open Ended Positive Feedback, which uses neutral questions and receives unstructured positive

responses. With this distinction and an interpretive framework based on survivorship bias, this paper proposes that Directly Solicited Positive Feedback can be useful for identifying flaws in need of improvement based on identifiable gaps easily achievable through visualizations.

Literature Review

The literature on feedback and improvement is straightforward, but also includes a surprising gap. At a basic level, many articles and books point to the usefulness of student feedback in the process of instruction. In multiple articles, the importance of student-focused assessment in the process of instructional improvement is highlighted, most meaningfully through discussion of the collection of actual data: "Assessment must collect hard data, and librarians must use that data to evaluate their programs and make changes necessary to improve those programs." (Carter, 2002, p. 41). Research points to a core tenet: regular assessment through student evaluations is part of the process that helps library instruction improve in quality. Numerous additional studies also point to this necessity (Barclay, 1993; Blair & Valdez Noel, 2014; Gratz & Olson, 2014; Kavanagh, 2011; Prosser & Trigwell, 1991; Wang, 2016; Ulker, 2021).

However, a significant gap in the literature exists regarding how to productively use positive responses in instructional evaluation. No research touched on Directly Solicited Positive Feedback and limited research touched on Open Ended Positive Feedback. In open-ended evaluations, participants are often provided space for adding comments, but the literature offers unclear guidance as to how to use positive comments gathered within this context. Zierer (2018) puts it fairly simply: "Essential functions of student feedback are: encouragement and motivation (from positive feedback)" (p. 38). Phillips & Phillips' (2016) main use for positive results comes in justifying extending existing programs (p. 16). Borch, Sandvoll & Risør (2022) say of the process "Written evaluation methods were on the other hand used mostly for quality assurance and less for quality improvement" (p. 6). In these articles, Open Ended Positive Feedback is primarily a tool for encouragement, assurance and/or expansion, a mandate to stay the course, pun intended. Blair & Valdez Noel (2014) are somewhat dismissive of the potential, though they do offer some hope:

> A 'poor' lecturer would not be expected to become 'excellent' even if they did implement aspects of feedback. Likewise, there is no room for improvement if a lecturer was originally graded as 'excellent'. However, in both these examples, analysis of students' qualitative comments may be able to identify subtle nuances in a lecturer's practice. (p. 885)

Part of the literature focuses on the difficulties in directly soliciting positive feedback or in trusting positive feedback when received. In many evaluation forms, positive feedback is either unrequested or subject to a chilling effect. Tricker (2005) indicates, "Another concern regarding traditional student experience questionnaires is their tendency to invite only criticism." (p. 187). Dreger (1997) describes how positive comments can verge into the overly effusive: "On the other hand, a number of comments were so very positive that they, too, violated [accepted canons of what is appropriate to say to a teacher]." (pp. 573-574). Altogether, the literature on Open Ended Positive Feedback is limited to assurance and encouragement, rather than as an opportunity for change.

Conversely, within the literature, negative comments are seen as contributing to instructor morale issues and tend to be unequally distributed, with women and minoritized instructors receiving more negative open-ended feedback (Carmack & LeFebvre, 2019; Hefferman, 2023; LeFebvre et al., 2020). Negative feedback itself cannot be considered objective, as it is not equally distributed, and with its additional

deleterious effects, may prove more harmful than helpful.

Since the dataset in question was gathered from asynchronous instruction during the COVID-19 National Emergency, a literature review was conducted to determine if asynchronous or recorded library sessions received significantly different reactions from live ones. The literature indicated that student assessments of virtual library instruction sessions seemed to be roughly comparable to those of live sessions: "While there is no clear preference on modality or live versus recorded virtual library instruction sessions, there is a clear appreciation of library help" (Bennet, 2021, p. 231). Morris and McDermott (2022) found that ratings were slightly higher in a flipped learning methodology for pandemic instruction: "While the exact extent to which the flipped learning strategy contributed to the increased engagement cannot be isolated, given the wider impact of the pandemic on the student experience and learner behaviour, there was sufficient positive evidence to justify its retention and expansion" (p. 179).

Overall, a review of the literature supported the approach of this project. Feedback is important to the assessment of teaching, but Open Ended Positive Feedback is primarily seen as support for continuity rather than change, and online asynchronous instruction sessions receive comparable reactions to other forms of library instruction.

Methods

The methodology of this study is similar to the study by Jacklin and Robinson (2013) in that it focuses on a set of potential learning objectives and uses content analysis of student comments used to visualize the results, dividing responses into categories based on identifiable patterns within open ended responses.

Feedback for this process analysis was collected as part of regular asynchronous library instruction, redesigned initially for use during fully remote instruction but continued during a period of hybrid instruction. The asynchronous instruction session consisted of a multi-page Google form with embedded videos related to information literacy tasks. On each page students were required to complete tasks related to conducting a literature search using multiple library article databases, based on skills demonstrated in an accompanying video. At the end of the form was an optional question, "What is the most useful thing you learned today?" and this Directly Solicited Positive Feedback was the basis of the analysis.

The demographics of the class and of the institution are worth considering for understanding the data. The first-year writing course was required of all students, with a placement test allowing students to bypass earlier sections. UIC is an urban Research 1 institution. The student body includes a large number of first-generation students (46%) and Pell grant eligible students (54%), with a significant portion coming from local public schools (40%). UIC is a Minority-Serving Institution (MSI); a Hispanic-Serving Institution (HSI) and an Asian American and Native American Pacific Islander-Serving Institution (AANAPISI). Students in English 161 tend to be beginning researchers and lack experience with the research tools included in library instruction (UIC Office of Diversity, Equity and Engagement, 2024).

While 2500 students took the course in question during this period, 24 sections with 599 total participants were specifically analyzed, from which were 552 responses (n=552) to this question (a response rate of 92%). These responses were gathered in a single spreadsheet with identifying information removed. While the instructional material was broken into 9 separate videos, the responses were unstructured and so didn't exactly match either the video outlines or the learning objectives of the original instruction session (students were not prompted to match their feedback to specific library skills). Results were

coded based on a combination of expected skills and participant supplied terms, with word frequency analysis used to divide and combine several processes. Coding was done interpretively through an iterative process. An initial examination using word frequency analysis was used to create a rubric, then all responses were reviewed three times by the researcher with an open-ended interpretive approach, trying to account for possible interpretations and resolve any potential disagreements due to ambiguity. Individual responses were then analyzed for the presence of references to specific categorical terms that might match specific identifiable library skills.

The rubric sorted responses into the following categories based on specific identified library skills from the instruction session and the less structured terminology used by respondents. Student feedback responses identified 11 different skills that were used to construct the rubric. These are ordered based on initial appearance in the instruction session materials. General responses that indicated more than one library skill were counted as in each category separately (example user response: "Definitely the guide on Boolean search terms." was counted as identifying both AND and OR library skills).

Rubric Categories

- KW Search- References to the general process of keyword searching
- AND- Explicit references to Boolean AND plus general mention of Boolean terms.
- OR- Explicit references to Boolean OR plus general mention of Boolean terms. Use of the term "synonyms"
- ASC- Direct references to EbscoHost's Academic Search Complete plus general references to multiple search options/article databases.
- Filters- References to limiting results within a database or being more specific, also for access to 'credible', 'trustworthy' or 'current' articles.
- ILL/FindIt- References to Interlibrary Loan or to accessing full text. Direct reference to permalinks or stable links.
- ProQ- Direct references to ProQuest Databases. General references to multiple search options/article databases.
- Catalog- Direct references to the UIC Library Catalog. General references to multiple search options/article databases.
- Google- Direct references to Google Scholar. General references to multiple search options/article databases, except when library databases mentioned.
- Chat- References to Library Help, the Ask a Librarian feature, Library Chat, or other indication of getting help from library staff outside of instruction session.
- Refworks- References to ProQuest Refworks or tools for creating bibliographies.

Responses were coded as 1 or 0 for each of 11 specific library skills within the rubric, connected to moments from the instruction material that represented the core of the material. Negative comments related to a given tool (example: "That I can find anything not only on google.") were not counted as references within the rubric. Ambiguous responses were addressed on an individual basis (example: "how to find reputable sources" was interpreted as a reference to the use of database filters for scholarly sources, based on the instructional focus on scholarly sources/peer review as a way of identifying reputable sources). Individual responses could be counted in multiple library skills categories, with responses varying from 0 categories (example: "This was more of a review for me.") to 6 categories (example: "The most useful thing I learn were the keywords/AND because it helped find what I was looking for and help me be from being broad to being more specific in finding research. Also, the many ways were(sic) you can get legitimate research information."[references counted for KW search, AND,

filters, ASC, ProQ, Catalog, Google]). The mean number of feedback references counted per student comment across the rubric was 1.89, with a mode of 1, which produced a total of 1043 feedback references from 552 responses.

The number of total feedback references were then counted for each coding category and compared to an average of the total feedback references given for all submissions (n=1043). This set of responses could then be used for a broader analysis.

Results

Analysis of the frequency of these responses is based partially on the learning objectives set out in the instructional video series. The video series broke the instructional process into 9 separate videos, each with a separate step for students to complete.

1. Outline: Students were given learning objectives and had to fill in their topic sentence.
2. Boolean AND: Students were taught about Boolean AND and had to extract two keywords from their topic sentence
3. Using Academic Search Complete: Students were introduced to Academic Search Complete and had to count the number of results from an initial search.
4. Boolean OR: Students were taught about Boolean OR and had to add synonyms for each keyword to expand their results.
5. Database Filters: Students were taught about the use of filters to reduce the number of search results.
6. Accessing Materials: Students were taught about how to access full text articles, use interlibrary loan, and obtain persistent URLs/permalinks.
7. Different Options: Students were introduced to other search tools (ProQuest Databases, Library Catalog, Google Scholar) and taught to search them.
8. Library Help: Students were shown different ways to get help from librarians.
9. Refworks: Framed as a bonus video, students were introduced to Refworks citation management software.

Each of these videos laid out one or more library skills that were important to the core assignment of the class, which required students to access a number of scholarly articles for use in a research paper. Since each part of the process is important to the final result, it was expected that each skill would be mentioned in a comparable number of student responses. Some variation was expected, given that certain tools connect more directly to student perceptions of difficult or time-consuming tasks (e.g. creating a bibliography).

Negative responses were not coded and were rare in the data. Ambiguous responses were coded as either a positive response or a null response if the ambiguity could not be resolved. Individual responses that could be counted as multiple library skills were counted as if they were separate positive mentions for each individual skill within the rubric.

Given the number of responses (1043) and number of discrete library skills (11), the rubric measured an average of 94.8 mentions per library skill. These mentions were not equally distributed, and while one might expect some degree of variation, the results were distributed very unequally. Several of the skills were mentioned with much greater frequency: Keyword Searching and Database Filters both received 1.4 times the average number of mentions, ProQuest Databases received 1.75 times the average and

Academic Search Complete received double the average, with over a third of respondents mentioning Academic Search Complete. Figure 1 is a chart of these results based on feedback mentions, highlighting the most frequently mentioned.

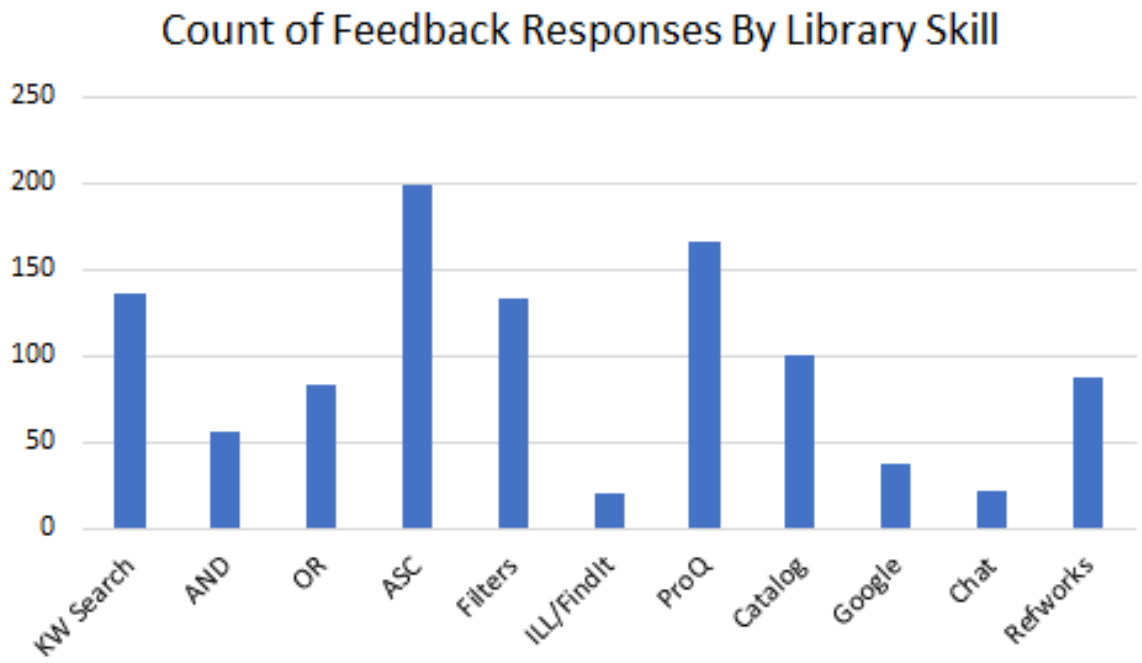

Figure 1
Count of feedback responses by library skill.

These results can be interpreted as a sign that these tools are resonating with students. There was not a significant increase in mentions for earlier or later parts of the instruction process, which would gesture to either first impression bias or recency bias. On a basic level, the general distribution of mentions says that students find specific tools useful in context, and it can point to support for retaining these tools in the exercise. And the interpretation of positive feedback outlined in the literature review would end there, simply a reassurance that certain things were working well. Students were not asked which tools did NOT resonate with them, so could this positive feedback be interpreted to identify that information?

Discussion

Survivorship Bias Lens

Creating a lens to identify opportunities for improvement based on the existing feedback proved challenging. Based on a limited approach to positive feedback seen in the literature review, the items mentioned rated above the average mention rate were ones that did not need additional support, as their usefulness to students had obviously been proven. And while it would be easy to simply accept the directly solicited positive feedback as supporting some level of retention of information among the students, another approach suggested itself as a way of using this information for the purposes of improvement, that of survivorship bias. Survivorship bias is frequently used as a component of research design, seen as both a way of exploring the limitations of studies and identifying limitations in data.

Survivorship bias is used to formulate research approaches in fields such as finance (Linnainmaa, 2013), economics (Slaper, 2019) and medical research (Elston, 2021). In this case, it was chosen to help design an interpretive framework to better use feedback.

One of the best-known anecdotes on survivorship bias comes from World War 2. While the historicity of the story is disputed, its folkloric value in the notion of survivorship bias is clear. According to the story, Allied air forces gathered engineers to suggest modifications to improve survival of bombers. As part of this, they put together a diagram with the places where the planes that had returned from bomber missions had been hit by anti-aircraft fire. According to the story, engineers were initially discussing adding additional armor plating to the hit locations to reinforce the plane, but Abraham Wald suggested that instead the armor be added to places that didn't have bullet holes, because the diagram actually showed places where a plane could be hit and survive, while the other locations were places where a hit would impede survival.

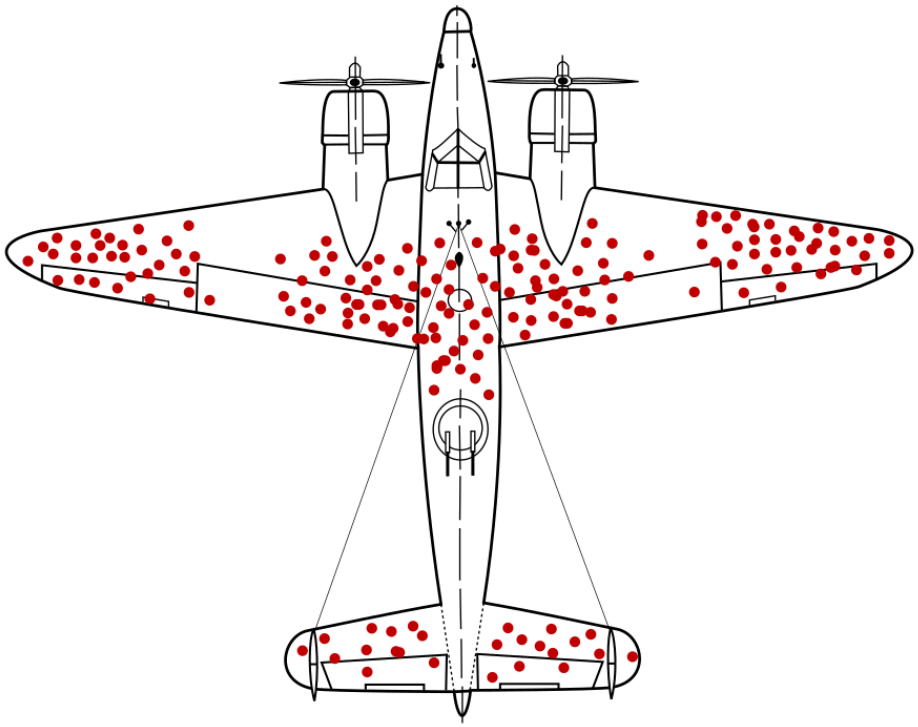

Figure 2
Conceptual image of bomber hit diagram (Grandjean & McGeddon, 2021).

This is a central conceptual anecdote for survivorship bias and was used to conceptualize the interpretive lens for interpreting the results from positive feedback in this paper. In short: what if the concepts mentioned were treated as bombers that returned, concepts that have sufficient support and don't need additional reinforcement. Based on this lens, the skills that were not mentioned were ones that were not presented in such a way that they got through to students.

With this lens in mind, we revisited the diagram of feedback to see if there were specific gaps. In our initial analysis, we assumed that there would be some inherent variation, and for further analysis, we chose to divide responses into categories based on relationship to the expected mean. Responses within

50% of the mean were considered normal levels of variation (n=6). Responses between 50.1% and 75% deviation from the mean were considered significant levels of variation (n=2). Responses above 75% deviation from the mean were considered highly significant levels of variations (n=3). The chart below shows the distribution of the 11 different discrete library skills compared to expected average responses.

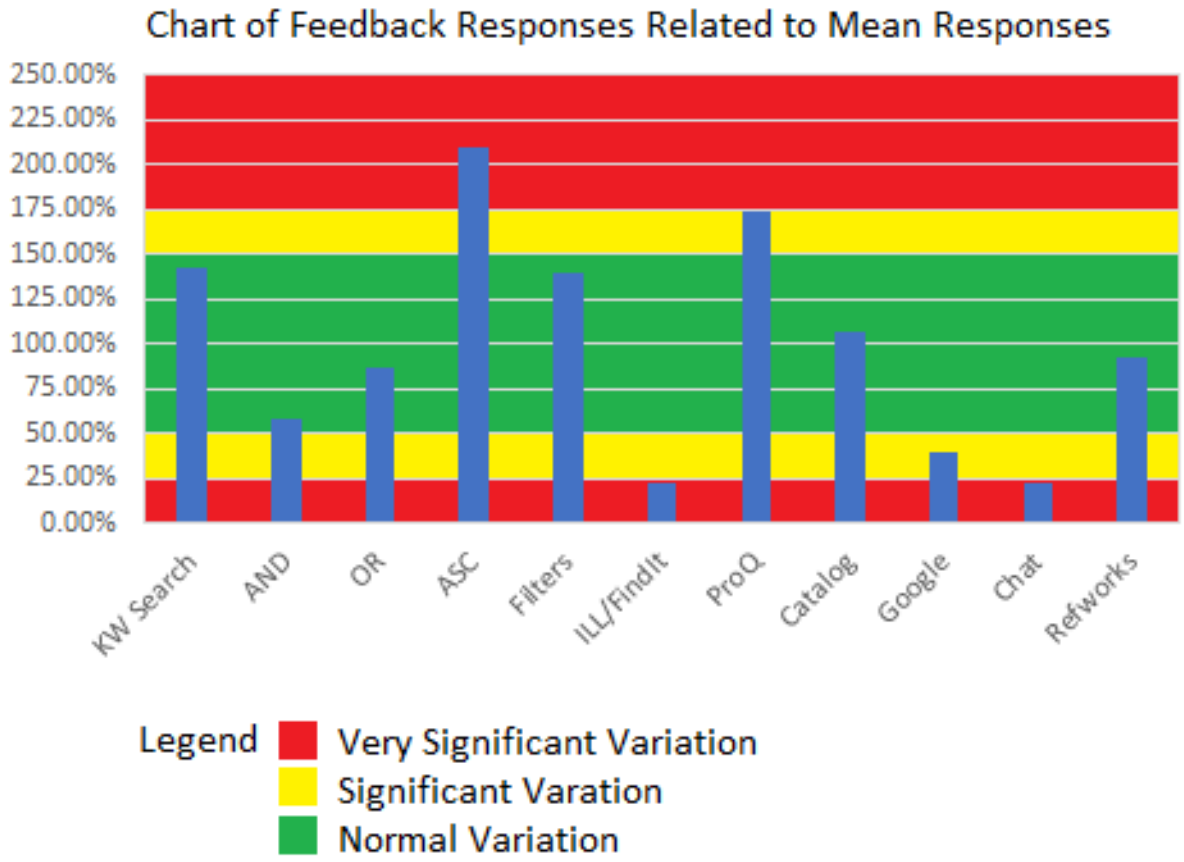

Figure 3
Comparison chart with significant relationship to the mean.

Based on this analysis, assuming that all skills in the instruction session serve an important purpose in the search process, two skills stand out as very significantly below the mean. ILL/FindIt and Library Help both sit well below average, gaps in the hit diagram that represent fundamental parts of the search process. The framework provides an interpretive lens to cut through normal levels of variation, highlighting variances that deserve extra attention and reinforcement. The lens allowed for narrower focus of the areas of improvement as well, rather than spreading changes over all parts that scored below the mean.

While a limited approach suggested for Open Ended Positive Feedback would indicate that these parts should be eliminated or skipped over, the survivorship bias lens focused on Directly Solicited Positive Feedback offers the opposite interpretation, a lack of mentions for these parts of the process indicates that these skills need reinforcement. If students cannot access the full text of journal articles or if they do not know how to follow up with librarians for assistance, then they will struggle to make full use of library resources.

With this interpretation in mind, the following changes were planned for future instruction sessions. One commonality observed in analysis between these two library skills is that neither has an explicit task in the asynchronous form. While students are required to answer direct questions about their use of specific databases, their selection of keywords and their opinion of different databases among other things, there are no specific questions related to accessing articles in full text form or getting library help. The following tasks were added to the revised version of the assignment.

1. FindIt@UIC task [Video 6]
    a. Added Content: Demonstrate use of findit@UIC tool and how to get a permalink from the library catalog.
    b. Added Question: Post a catalog permalink for an article not available in Academic Search Complete.
2. Library Help task [Video 8]
    a. Added Content: Show how to find LibGuides and Subject Librarians
    b. Added Question 1: What is the subject of another class you are taking (or have taken)?
    c. Added Question 2: What is the name of the Subject Librarian for that class?

These changes reinforce those neglected library skills by adding an active learning component. Students will need to have direct experience with these skills to complete their assignments. The hope is that these improvements will help students have a more complete understanding of the entire skill set necessary for library research at the college level. Further research would hopefully help these resonate with more students.

Conclusion

In general, this process of improvement points to several potential paths forward. One known issue in surveys and questionnaires is that negatively framed questions tend to elicit negative responses. Ask someone what was wrong with an experience and they will find something to criticize even if they had a positive experience overall. This can artificially inflate the scale of problems identified within the assessment process. However, Directly Solicited Positive Feedback has not been useful as a replacement for problem finding as it has tended to focus on identifying what went well and potentially glossing over problems. Fundamentally, the ability to ask a large group of patrons 'what did you find useful?' and take away multiple ways to improve a library instruction session provides opportunities for library instruction everywhere. While it requires planning and reflection, it can be invaluable.

The survivorship bias lens creates a way of making Directly Solicited Positive Feedback into a method for identifying pain points or problem areas by establishing a framework of expectations around the feedback that can establish gaps. When Swoger and Hoffman explored analyzing student responses to "what did you learn today?" at the reference desk, they found the absence of pre-defined learning objectives prevented deeper assessment. Designing a survivorship bias lens requires having a robust sense of learning objectives and expectations in class design, but with that in place, it can give a good view of the material that lacked what it needed to survive in the minds of patrons. Additionally, it requires a large dataset of feedback, as it is hard to accurately identify patterns with few data points. Consequently, this lens is best suited for use in structured library instruction programs such as first year writing programs or standardized instruction methodologies.

A future direction for this research could take a more experimental approach and evaluate the results of the changes in the instructional video to include additional tasks. Does the addition of Find It@ UIC and

library help tasks to the assignment change the distribution of mentions in student comments? With the limited number of changes prompted by the specific focus of the survivorship bias lens, follow-up assessment can more easily assess the effects of those changes.

Finally, there's an additional benefit. Anyone who has had to deal with course evaluations or public comments knows that negative feedback can be deeply disheartening. While assessment is an important part of the improvement process in education, finding ways to mitigate the psychological toll of the process can help prevent assessment from contributing to burnout. Having a way of incorporating positive feedback into an improvement process can help librarians understand the ways they are getting through to patrons and remind them of why they work so hard on these classes in the first place.

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