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A Librarian-Centered Study of Perceptions of Subject Terms and Controlled Vocabulary

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ABSTRACT

Controlled vocabulary and subject headings in OPAC records have proven to be useful in improving search results. The authors used a survey to gather information about librarian opinions and professional use of controlled vocabulary. Data from a range of backgrounds and expertise were examined, including academic and public libraries, and technical services as well as public services professionals. Responses overall demonstrated positive opinions of the value of controlled vocabulary, including in reference interactions as well as during bibliographic instruction sessions. Results are also examined based upon factors such as age and type of librarian.

Introduction

The use of subject headings and controlled vocabulary can sometimes be considered almost passé, particularly in circles outside of technical services, catalogers, or metadata librarians. Librarian reactions to their use may also depend on what terminology is used to describe or discuss controlled vocabulary. If one utters the word "metadata" when associating it with Library of Congress subject headings, those headings can suddenly take on the aura of being fresh and cutting edge, particularly to the uninitiated. In fact, the value and power of controlled vocabulary in information discovery has been proven through a variety of studies that are included in the literature review of this article. One might also assume that cataloging and metadata librarians are particularly partial to these tools by the nature of their work. The authors of this article wanted to explore how librarians in general currently feel about the value of subject headings and controlled vocabulary. Is there a difference between the opinions of public librarians and academic librarians? Is there a difference between the opinions of technical services librarians and public services librarians? Even more specifically, are librarians actually using controlled vocabulary, and if so, in what situations? Do reference librarians

use or teach students about clickable subject heading links? Finally, is the value and proper use of subject headings or controlled vocabulary being taught in library instruction sessions? The authors conducted a survey in the fall of 2015 which attempted to uncover answers to some of these questions.

Literature review

In his 2008 article, "Search Engine User Behaviour: How Can Users Be Guided to Quality Content?", Dirk Lewandoski suggested that the major problem in web searching was the same as it was ten years prior: search result relevance to information that is being sought.[1] Today, it is not hard to argue that relevance is still a major problem. This is the case in broad-based web searching as well as with library catalogs and databases. Often, libraries are seduced by the siren song of the "one search box" that Google presents. However, libraries are not Google, nor should they strive to be. Lewandoski stresses that it is not only about libraries *offering* great collections, but being able to point users to them.[2] Controlled vocabulary is one of the means that we have to point users to our high-quality content.

Of course there are nuances and potential problems that controlled vocabularies such as Library of Congress subject headings can pose. Sevim McCutcheon points out that on the one hand, sub-headings attached to primary topics that a person has already searched may provide options that he or she may not have been aware of until that point.[3] In contrast, controlled vocabulary requires time to develop, so items described by more obscure terms or older terms, or conversely, items about cutting-edge developments, might be found most effectively with keywords that may not be contained within headings. McCutcheon reminds us that, "The goal of both indexers and catalogers is to facilitate easy findability by imposing consistency on search terms, disambiguating synonyms and homonyms, and by ensuring accuracy."[4]

In 2005, Tina Gross and Arlene Taylor conducted a study that investigated the appearance of keywords in subject searches of catalog records and found that in many cases at least one third of successful results from keyword searches would be lost if not for the existence of keywords *within* a subject heading.[5] This illustrates that in addition to headings functioning strictly as subject headings, they clearly serve a purpose in keyword searching as well, in that they produce real results. A similar but improved study was conducted by Gross, Taylor, and Joudrey ten years later. Included in this new study—designed to reflect developments in catalog records—were records that had been enhanced with table of contents and summaries. As the presence of tables of contents and summaries could theoretically de-emphasize the importance of subject headings, this is a significant shift. One of the results from the study found that even with tables of contents and summary notes, 24.8% of keyword search hits still would have been lost without the presence of subject headings in the catalog records (compared to 35.9% in 2005 without them).[6]

In their 2014 article "Teaching the Use of Library of Congress Subject Headings as a Research Strategy for Undergraduate Students," Debra Spidal and Lara Ursin

Cummings conducted a survey to determine if subject headings or controlled vocabularies are still being taught as a part of library instruction. Although similar to our inquiry, their approach was more targeted, focusing on library instruction. Of the 389 responses they received, 33% said they never or rarely mentioned subject headings when they taught, 29.2% said sometimes, 21.9% answered often, and 14.5% responded they always did.[7] In using online tutorials, either alone or in conjunction with face-to-face instruction, 87% acknowledged having a section on keyword searching, and 40.4% with a component on LCSH. Spidal and Cummings also found that many librarians who responded felt that one-shot sessions (usually about 50 minutes) were too short to include controlled vocabulary. Other respondents began teaching with keyword searches, and then pointed out clickable links. Other responses spoke to the perceived importance of subject headings or controlled vocabulary, including a statement from one respondent that "keyword searching isn't adequate for serious research."[8]

Methodology

In the Fall 2015, the authors of this article constructed a 16-question survey using Qualtrics as the dissemination tool. The survey was sent out to a number of national and regional electronic discussion lists. The authors strove to get participation from both public services and technical services librarians as well as academic and public librarians. One question ("Are you currently in library school?") was contingent on the respondent answering "no" to the preceding question that asked whether the respondent had a master's in library science. This was automated by Qualtrics. Because the authors are a part of the Illinois library community (Eastern Illinois University and the Skokie (Il) Public Library), the survey was sent out to the Consortium of Academic and Research Libraries in Illinois (CARLI) Public services discussion list, the CARLI instruction discussion list, CARLI technical services discussion list, the Illinois Library Association (ILA) Reference Services Forum, and the Reaching Across Illinois Library System (RAILS) discussion list. RAILS is one of two multi-type regional library systems in Illinois, whose membership includes academic, public, school, and special libraries. On the national level, the survey was sent to Autocat, an electronic discussion list geared towards technical services librarians, particularly catalogers and metadata librarians. Although the survey did reach a variety of librarians, the authors recognize that the responses do constitute a convenience sample due to the ease and voluntary nature of the survey.

Findings

The 170 respondents to the 16-question survey represented a mix of public and academic librarians (about 34% and 55%, respectively), as well as public services and technical services librarians in very similar proportions (33% and 53%, respectively). Fifty-three percent of the respondents also reported either being engaged in library instruction or working at a public services desk between 0 and 6 hours per

week, and another 22% serving between 7 and 12 hours per week. Fourteen percent reported spending between 13 and 30 hours per week, and 11% reported 24 or more a week with instruction or on a service desk. Basic awareness that respondents had of subject analysis and headings, and related recent developments was gauged by responses to a pair of statements. One was "I am aware that changes have occurred in recent years to make some headings more user-friendly; examples include changing "cookery" to "cooking," and "violoncellists" to "cellists." (Yes/No) and "My grasp of the concept of subject analysis could be described as one of the following:" (Excellent, Very good, Good, Fair, Poor). Respondents in general reported a notable awareness that changes have occurred, with 86.5% answering "yes" to this statement. In a related expression of familiarity, 63% of responding librarians reported having at least a "very good" grasp of the concept of subject analysis.

One phenomenon we observed was the relationship between work with the public, and how prevalent the use of subject headings and controlled vocabulary is in these circumstances. Of those who reported working with the public in their positions, a 61.5% majority reported using subject headings at least often. The remainder reported 27% for sometimes, and only 3% reported never using them (see Figure 1). Within the venue of actual library instruction sessions, more than three quarters of the respondents (76.1%) reported teaching about subject headings at least sometimes (see Figure 2).

Tangentially, it is worth noting that there were a fair number of technical services librarians who reported working with the public or engaged in library instruction. For example, in filtering for respondents who reported technical services as being his or her "primary job duties, or primary professional interest" who also were engaged in public services, 22.4% reported spending at least 7 hours, and up to 24 hours per week either at a public service desk or engaged in library instruction.

As the above illustrates, the authors were also interested in separating out the attitudes of librarians with respect to certain factors such as age or type of librarian with regard to title or responsibilities (e.g., public services, technical services). In the case of using controlled vocabulary in library instruction, there was a particular interest in comparing public service librarians to technical services librarians who engaged in library instruction. The study found that 76.6% and 63.4% of librarians (technical services and public services, respectively) taught about subject headings during instruction sessions. Although this finding represents behavior that librarians engage in, it does not necessarily translate into representation of attitude. In seeking to get a sense of corresponding attitudes about the value of subject heading searches, a breakdown by public services and technical services librarian responses to survey item 10 (The ability to perform subject searches is a necessary function of my Online Public Access Catalog (OPAC) or discovery layer) was also examined. These results reveal that of 53 self-identified public services librarians (75%) at least agree with the statement, and of 86 self-identified technical services
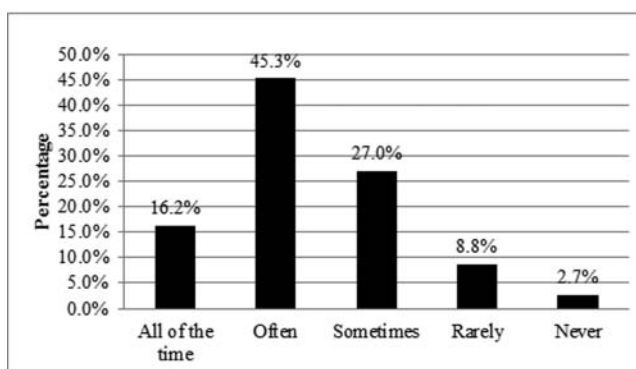
**Figure 1.** Use of subject headings when assisting patrons.
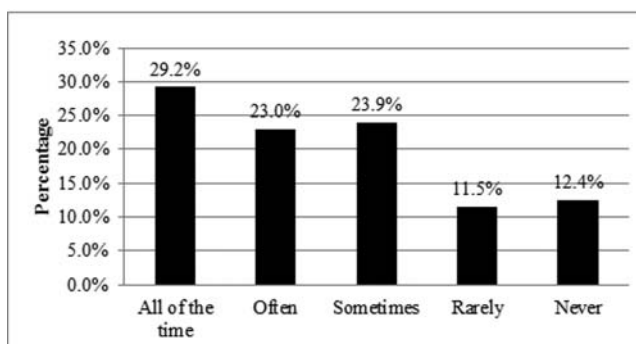
Figure 2. Teach the use of subject headings when engaged in instruction.

librarians (94.2%) at least agree. In contrast to this when examining responses of the entire sample of survey responses (despite the type of librarian) only 4.3% disagree that the ability to perform subject searches is a necessary function, and no respondents strongly disagreed with the statement.

The authors were also interested in finding if attitudes varied across other distinctions besides public services and technical services librarians. These
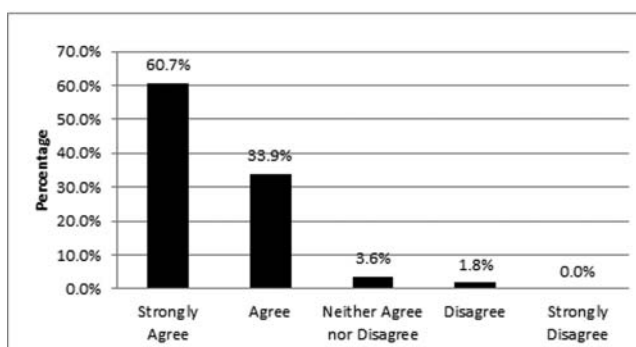
Figure 3. Agreement that the ability to perform subject searches is a necessary OPAC function (academic librarians).
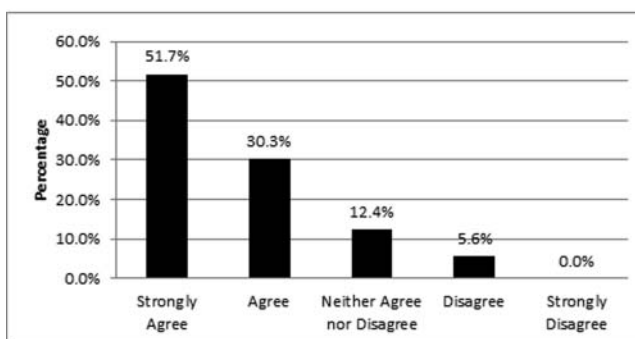
Figure 4. Agreement that the ability to perform subject searches is a necessary OPAC function (public librarians).

distinctions included generational gaps and academic librarians contrasted with public librarians. High-perceived value and importance of subject headings and controlled vocabulary among older and younger librarians was evident for each, despite what professional area or type of library they worked in. Both groups largely either agreed or strongly agreed that subject headings are valuable resources. Among respondents who reported being 46 years old or older, 94.8% agreed or strongly agreed that subject headings are valuable discovery tools, and an even larger majority (97.3%) of respondents 18–35 years old either agreed or strongly agreed with that statement.

The authors were also interested in uncovering any distinctions between academic librarians and public librarians when they were asked about subject search capability being "a necessary function of my Online Public Access Catalog (OPAC) or discovery layer" (see Figures 3 and 4). In this analysis, an overwhelming majority of both groups of respondents either agreed or strongly agreed that they are a necessary function, although the public librarian opinion did not have quite the conviction of the academic librarians (94.6% of academics and 82% for public librarians). This sentiment was mirrored in overall responses to that statement, with more than 86.4% of all respondents agreeing that subject search capability is a necessary function.

Discussion

The survey results were notable for the respondents' across-the-board expression of respect for, and perception of the value of controlled vocabulary and subject headings. Furthermore, there were fewer differences than one might have expected between the opinions and attitudes of public services librarians and those of technical services librarians. It may go without saying that Catalogers or Metadata Librarians probably tend to have more familiarity with subject headings. For example, if a university student is seeking analyses of the writings of a particular novelist, knowing to implement the subheading "criticism and interpretation" is a

powerful tool that can be used to target such scholarship. This knowledge may be an advantage that librarians who are more technical services or metadata oriented tend to have.

As with any study of this type, we recognized over time some things that we might have liked to have done differently, to have added in, or stripped out. For example, in retrospect, we realized that although we ascertained the age of respondents through the survey, we neglected to ask respondents about their gender. Although this was not at the crux of the type of information we were seeking, including the element of gender into the study may have produced additional results of interest. Also, we recognize that although respondents answered a question about holding a degree in library science, being more specific with regard to exactly what type of degree may have been valuable.

Conclusions and suggestions for future research

What does all of this information tell us? On the one hand, the results of the survey demonstrate that librarians do indeed recognize the value and importance of what controlled vocabularies such as subject headings can do for patrons in terms of uncovering resources that are highly relevant to their searches. But how can patrons most effectively be exposed to these tools, and encouraged to regularly use them? Singer et al. mention that users "seldom use help pages…but automatic contextual help may be useful in supporting users in achieving their search goals."[9] Implementing contextual assistance may indeed be one way to help. Particularly in academic settings, it is easy to assume in this technological age, that students are savvy about using technology-related search tools; thus, teaching about them feels redundant or like a waste of time. In the experience of the authors of this article, demonstrating the use of controlled vocabulary in the context of constructing searches, in addition to teaching the simple act of locating and clicking on them, can certainly open up doors of discovery that may not have been recognized. The implications from the results of this survey are that despite what type of library or what types of librarianship backgrounds people come from, most librarians agree with that notion.

However, tangential factors may prohibit librarians from putting these tools and techniques into practice as much as they might like to. These may include the limitation of time to cover these more advanced search strategies (e.g., one-shot instruction sessions), a challenge that librarians reported in Spidal and Cummings' study mentioned earlier.[10] Perhaps librarians may also assume that patrons already have a familiarity with them or can figure it out for themselves. Further study that examines the knowledge, opinion, and use of controlled vocabulary tools by library patrons, and perhaps students in particular from the undergraduate as well as graduate levels would be valuable. Is there a difference between these two groups? Are there any trends that can be distinguished as a student progresses through their academic careers that demonstrate increased awareness and use of clickable

subject strings or controlled vocabulary? Are there any significant differences distinguishable by academic major? Having more of this type of information could help librarians consider how aggressively these tools should be taught, and what teaching strategies might contribute to a higher prevalence of use in patron research habits.

The themes from this survey reveal generally positive information about how librarians from a variety of professional backgrounds feel about subject headings and controlled vocabulary. As a whole, librarians who responded to this survey recognize the value of them and have a high level of agreement on several particular sentiments, including that subject searches are a necessary function of library OPACS (for example). Along with the information gathered here about librarian attitudes, there is also important evidence through other research that controlled vocabulary and bibliographic features like clickable subject headings can increase discoverability.

This research is useful to librarians in demonstrating that even in a world that seems to be dominated by Google and Google-like searches, one can argue that there is an increased need for targeted searching that takes advantage of the power of controlled vocabulary. Implications are that this may be particularly pertinent as interest in linked data increases. This phenomenon will bring more and more information and unknown directions into the fold that will benefit from being anchored to elements of stability like controlled vocabulary.

Notes

1. Dirk Lewandoski, "Search Engine User Behaviour: How Can Users Be Guided to Quality Content?" *Information Services & Use* 28, no. 3/4 (2008): 262.
2. Lewandoski, "Search Engine User Behaviour," 267.
3. Sevim McCutcheon, "Keyword vs Controlled Vocabulary Searching: The One with the Most Tools Wins," *The Indexer* 27, no. 2 (2009): 63.
4. McCutcheon, "Keyword vs Controlled Vocabulary Searching," 62.
5. Tina Gross and Arlene G. Taylor, "What Have We Got To Lose? The Effect of Controlled Vocabulary On Keyword Searching Results," *College & Research Libraries* 66, no. 3 (2005): 220.
6. Tina Gross, Arlene G. Taylor, and Daniel N. Joudrey, "Still a lot to Lose? The role of Controlled Vocabulary in Keyword Searching," *Cataloging & Classification Quarterly* 53, no. 1 (2015): 30.
7. Debra Spidal and Lara Ursin Cummings, "Teaching the Use of Library of Congress Subject Headings as a Research Strategy for Undergraduate Students," *College & Undergraduate Libraries* 21, no. 2 (2014): 165.
8. Spidal and Cummings, "Teaching the Use of Library of Congress Subject Headings as a Research Strategy for Undergraduate Students," 167.
9. Georg Singer, Ulrich Norbisrath, and Dirk Lewandowski, "Ordinary Search Engine Users Carrying Out Complex Search Tasks," *Journal of Information Science* 39, no. 3 (2013): 354.
10. Spidal and Cummings, "Teaching the Use of Library of Congress Subject Headings as a Research Strategy for Undergraduate Students," 167.

Appendix: Survey questions

1. **If you work with the public, do you make use of subject headings in assisting patrons with questions?**
   (a) All of the time
   (b) Often
   (c) Sometimes
   (d) Rarely
   (e) Never

2. **If you engage in library instruction, do you use or teach about subject headings when doing library or bibliographic instruction?**
   (a) All of the time
   (b) Often
   (c) Sometimes
   (d) Rarely
   (e) Never

3. **Approximately how many hours per week do you spend either at a public service desk or engaged in library instruction?**
   (a) 0–6
   (b) 7–12
   (c) 13–20
   (d) 20 or more hours

4. **Subject headings are valuable tools that help to discover resources.**
   (a) Strongly agree
   (b) Agree
   (c) Neither agree or disagree
   (d) Disagree
   (e) Strongly disagree

5. **Controlled vocabulary/subject headings are useful for patrons in helping to group similar resources, particularly through clickable links.**
   (a) Strongly agree
   (b) Agree
   (c) Neither agree or disagree
   (d) Disagree
   (e) Strongly disagree

6. **Patrons at my library make use of subject headings (intentionally or unintentionally) by activities such as clicking on heading links, using headings from search results as keywords in more searches, etc.**
   (a) All of the time
   (b) Often
   (c) Sometimes
   (d) Rarely
   (e) Never

7. **I am aware that changes have occurred in recent years to make some headings more user-friendly; examples include changing "cookery" to "cooking," and "violoncellists" to "cellists."**
   (a) Yes
   (b) No

8. **My library uses local subject headings or statements to intellectually gather or connect specific collections of materials for the public.**
   (a) Frequently
   (b) Occasionally
   (c) Not at all

9. **My grasp of the concept of subject analysis could be described as one of the following:**
   (a) Excellent
   (b) Very good
   (c) Good
   (d) Fair
   (e) Poor

10. **The ability to perform subject searches is a necessary function of my Online Public Access Catalog (OPAC) or discovery layer.**
    (a) Strongly agree
    (b) Agree
    (c) Neither agree or disagree
    (d) Disagree
    (e) Strongly disagree

11. **What best describes your primary job duties, or your primary professional interest?**
    (a) Public services
    (b) Technical services
    (c) Other (please explain)

12. **What best describes the type of library you work at, or have interest in?**
    (a) Academic library
    (b) Public library
    (c) School library
    (d) Special library
    (e) Other (please explain)

13. **Do you have a Master's degree in library science?**
    (a) Yes
    (b) No

14. **Are you currently in library school?**
    (a) Yes
    (b) No

15. **How many years have you been a librarian, or worked in libraries?**
    (a) 0–5
    (b) 6–10
    (c) 11–20
    (d) 21–30
    (e) 31+

16. **What is your age range?**
    (a) 18–25
    (b) 26–35
    (c) 36–45
    (d) 46–55
    (e) 56+