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Quality of Academic Law Library Online Catalogs and Its Effect on Information Retrieval

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The Quality of Academic Law Library Online Catalogs and Its Effect on Information Retrieval

Georgia Briscoe

Quality in online catalogs is generally presumed to be high. Ms. Briscoe examined a number of online catalog entries and documented the accuracy of selected bibliographic records. After finding a high level of errors, she surveyed reference librarians to determine if they believed that these errors would affect their ability to answer reference questions.

Introduction

1 The heart of any library is often considered to be the online catalog, because the catalog provides life to the library in the form of bibliographic access to a library’s holdings. Law libraries spend a great deal of money to provide access to their collections, whether they are print, microform, audiovisual, or electronic resources. Typically, libraries pay for the automation hardware and software on which the catalog runs, for loading their machine-readable records into that software, and for regular maintenance of the software. Beyond that, a significant cost is incurred for the labor of staff to keep the data accurate and current. Questions about how much of a library budget should be spent for this access are not usually considered; the costs are simply accepted as a necessary expense of doing library business. Because so much time and money are spent creating and maintaining it, we naturally expect the quality of the information in the online catalog to be high.

2 Historically, when libraries created their card catalogs from scratch, it was understood that the maintenance of quality was important both to internal record keeping and to following the objectives of library science. Libraries have changed

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1. In addition to the costs of the integrated automated library system, many libraries now also have subscriptions to other services to improve the discovery and usability of their online catalogs. Examples of some of the additional subscriptions that add to the cost of online access to library holdings are bibliographic utilities such as OCLC, federated search products, cover art and table of contents databases, and discovery platforms.

2. As an example, at the University of Colorado Law Library, 5% of the 2009–2010 total library budget (7.5% of the bibliographic materials budget) was spent for access to the collection. This included payments to OCLC, Innovative Interfaces Inc. (integrated library system and online catalog), Serials Solutions (federated search engine), AquaBrowser (catalog discovery tool), Syndetics (cover art, formatted tables of contents, reviews, and summaries), and Backstage (authority control provider).
dramatically in the last thirty years, with the number of publications increasing exponentially and technology incorporated into many of the traditional library tasks. However, expectations of how the catalog should provide quality access to the library’s holdings have altered little.

§3 A close study of academic law library catalogs, though, showed that there are major problems with the quality of data. This article first discusses the concept of catalog quality and then describes the study and its results. It then discusses the results of a survey about whether these problems found in library catalogs would have an impact on library patrons’ being able to find the information they seek.

Catalog Quality

§4 The definition of quality in catalog data goes back to Charles Cutter’s 1876 statement of the objectives of a library catalog:

(1) To enable a person to find a book of which either ... the author ... the title [or] ... the subject is known. (2) To show what the library has ... by a given author ... on a given subject [or] ... in a given kind of literature [; and] (3) To assist in the choice of a book ... as to its edition (bibliographically) [or] ... as to its character (literary or topical).

These objectives were reiterated as recently as 2009: “[L]ibrary catalogs are founded on predictable and consistent record and heading structures, which facilitate serendipitous discovery, efficient known-item retrieval and many ways to browse. Library catalogs typically contain good metadata, in the sense that they use authority control, classification and content standards to describe and collocate related materials ...”

§5 The quality of metadata determines the ability of the online catalog to perform the bibliographic functions of access with discovery, currency, authenticity, consistency, and completeness. The functional requirements for bibliographic records are defined in relation to the tasks of finding, identifying, selecting, and obtaining the item the library user needs. Obviously, if any of the metadata factors are absent, incorrect, out-of-date, or incomplete, library users will be hindered in their ability to locate what they need as quickly and efficiently as possible.

§6 Library science literature offers many definitions of quality in catalogs. One expression of information quality comes from Canada, and lists relevance, accuracy, timeliness, accessibility, interpretability, and coherence as the six dimensions of information quality. Others have put forward an Information Quality (IQ) framework consisting of twenty-two dimensions in three categories with criteria of accuracy/validity, cohesiveness, complexity, semantic consistency, structural con-

3. Charles A. Cutter, Rules for a Printed Dictionary Catalogue 10 (Gov’t Printing Office, 1876).
sistency, currency, informativeness/redundancy, naturalness, and precision/completeness. A 2009 survey of the literature on metadata quality reported that “accuracy, completeness, and consistency are the most commonly used criteria in measuring metadata quality . . . ”

In many ways, it seems that it should be far easier in 2010 than it was in Cutter’s time to keep the quality of the metadata in online catalogs accurate, complete, and consistent because library staff have so much technology to assist them in their tasks. Examples include OCLC MARC records, Library of Congress Subject Headings, automatic authority control in integrated automated library systems, “expected” dates in serials check-in databases, spell checking, and automated link checking. In addition, it is now easy to purchase batch loads of MARC records that have been professionally prepared and should have been processed using an authority control program before purchase.

Unfortunately, some of the same reasons that lead librarians to think it should be easier to maintain quality turn out to cause problems. For example, in the rush to put library holdings into machine-readable format, many libraries outsourced their retrospective conversion, as a “quick and dirty” solution. Some of the “dirtiness” consisted of incomplete or partial records, limiting which entry fields were traced or even allowing incorrect MARC records to be loaded into the library’s new online catalog.

Another reason for decreased quality is that MARC records are often purchased in batches from a variety of providers using a variety of quality control methods. A brief sample of possible providers of MARC records to a law library includes LexisNexis for its U.S. Congressional Digital Hearings database, Gale Cengage Learning for its Making of Modern Law database, Cassidy Cataloging for HeinOnline collections, and OCLC for major microform collections. It would seem impossible to review and control individual records when they are being loaded in batches of tens of thousands at a time.

At the same time that it is in some ways easier and in some ways harder to provide quality in online catalogs, the expectations of catalog users are increasingly driven by their experiences with Google and online bookstores, where the “buy it now, get it now” attitude prevails, and where errors are assumed to be low and quality is presumed to be high.

Now that almost all libraries make their online catalogs publicly accessible on the web, the quality or lack thereof in any library’s online catalog is available for all to view. For example, at the University of Colorado Law Library, when an expected item such as a law review issue, loose-leaf update, or expected supplement has not been received, another library’s online catalog is searched to see if it has been received there. If the other libraries have also not received the item, a claim for the item from its provider is not initiated, but instead the expected date in the check-in record is adjusted.

It was while performing this task that it became increasingly evident that library catalogs have many more errors in their catalogs than would be expected. Some of the errors were critical to retrieval of titles or issues, such as misspelled words. Other catalogs had dozens of late boxes, indicating that the library had not claimed late issues for years. There were also broken links and mismatched volumes and dates. Often errors included the lack of title changes or cessation of publication.

Possible Reasons for the Lack of Quality

The errors encountered while visiting other catalogs before claiming late serial items did not seem to be caused by messy retrospective conversion projects or bad batch loads. These appeared to be errors caused by the lack of attention to detail in basic technical services functions such as serials check-in, keeping current with title changes, itemizing continuations carefully, and performing basic tasks like serials claiming. For example, if a law review changes title, it must be noticed and action taken to close the old MARC record and download and edit a new MARC record for the new title. Alternatively, an employee could use the Serials Titles column in Technical Services Law Librarian as notification of which changes to make.9 If a serial title ceases or changes frequency of publication, a library employee must again notice the change and edit the bibliographic and check-in records. If an authorized subject heading or name heading changes, someone must take time to look for the changes and correct them, unless the library subscribes to a service that will handle this authority work automatically.

Much of this detailed and time-consuming work is assigned to library assistants or library technicians. Traditionally, all work that involved technical services functions, such as cataloging, serials check-in, and itemizing, was edited or “revised” by a second person, usually a supervisor. From experience looking at other law library catalogs, it seemed as though the revising work typically done in technical services departments was no longer regularly performed in many of these catalogs.

This apparent lack of revision may be due to budget cuts, which have decreased the number of employees in technical services departments. Doing more with fewer people is the norm these days. It is also likely that staff time is being consumed by the many new activities expected of library employees, such as updating web sites and enhancing the functionality and content of online catalogs.

Just as compelling a reason for the lack of time to keep online catalogs current with the highest quality is the increasing desire of library users to gather information with the least amount of effort. Libraries have purchased many new products to supplement their basic online catalogs, in order to make their catalogs more inclusive, faster, and more accurate. It takes staff time to configure and keep

9. The column Serials Titles appears in each issue of the Technical Services Law Librarian, the newsletter of the Technical Services Special Interest Section of AALL, and lists title changes, title mergers, cessations, etc. See, e.g., Barbara Bohl, Serials Titles, TECH. SERVS. LAW LIBRARIAN, June 2010, at 20.
active such features as federated search engines, discovery platforms, and seamless linking to full text. If a librarian has to decide whether to revise a book truck of just-processed codes and reporters or to add databases to the federated search engine, it is likely the truck will go to the stacks unrevised.

However, concerns about a quality problem in law library catalogs based on anecdotal evidence need to be systematically tested. I therefore applied to AALL for a research grant to measure the number of errors for given searches, which would be an indication of quality in online catalogs. My initial goal was to find titles that should have been recently edited in order to be current, and sample law library catalogs to see if the edits had been made appropriately using AACR2, LCSH, and other approved tools.

Methodology

An initial literature search determined that there is little published research on quality control of online catalogs. This gap in the literature was corroborated by the recent Report of the Library of Congress Working Group on the Future of Bibliographic Control, where Recommendation 5.1.2 is to support ongoing research in bibliographic control, and by the resolution declaring 2010 the “Year of Cataloging Research” at the 2010 American Library Association Midwinter Meeting in Boston.

The original title of my grant proposal was “Is Quality Control in Academic Law Library Online Catalogs Decreasing?” But it quickly became clear that there were no studies with which to compare current bibliographic control in online catalogs with bibliographic records of an earlier time, other than from my own memory and experiences. The research would therefore have to document only whether errors were present or absent in current catalogs.

The following are the research stops included in the grant proposal, along with descriptions of the methodology used:

1. Consult statistics research resources to determine the number for a statistically significant sample and set the parameters of the sample. If a relationship between variables is strong, then it can be found to be significant even in a small sample. It was therefore determined to sample twenty of the academic law libraries at the one hundred ranked law schools in the 2010 U.S. News and World Report rankings. Five libraries were selected in each quart-

10. My LexisNexis research grant was awarded by the AALL Research and Publications Committee on Apr. 23, 2009, for the period July 1, 2009, through July 1, 2010.
tile. Because this would be an anonymous study, the only identification of the libraries would be by the quartile in which its law school ranked. The sample was therefore evenly stratified, since the law schools selected held the same ranking within each quartile.\(^{15}\)

2. **Determine what titles and types of records to sample and what will be considered an error.** Titles selected were those that were commonly owned by most law libraries and in which changes had occurred several months prior, so libraries would have had plenty of time to make the changes or corrections.

3. **Sample the online catalogs of the selected libraries for the titles selected.** The original intention was to hire student library workers to do this sampling, but it quickly became apparent that there were so many details and intricacies involved that someone with more training and experience than a student would be needed for gathering the data.

4. **Analyze and compile the results.** The results were recorded anonymously on an Excel spreadsheet.

5. **If quality was found to be lacking, design a survey to distribute to ALL-SIS librarians to determine if they consider quality control in online catalogs important.**

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**Research Results**

\(\S 21\) For each of the twenty selected academic law libraries, a catalog search was conducted for a given title on the same day. The issues researched included:

**Sample 1: Spelling Error**

\(\S 22\) On August 5, 2009, a search was conducted for the misspelled word, "information." Of the twenty catalogs, only one returned a hit with this misspelling. Assuming that the twenty libraries are representative of the whole universe of one hundred libraries, this was a five percent rate of error on a given day across all libraries. The catalog that had the spelling error was from a law school in the third quartile of *U.S. News and World Report* rankings.\(^{16}\)

**Sample 2: Title Change of Serial**

\(\S 23\) On August 20, 2009, a search was conducted for *Southwestern Journal of Law and Trade in the Americas*. The last issue of this title was vol. 15, no. 1, 2008. Most libraries received the final issue in March 2009. The title changed to *Southwestern Journal of International Law* with vol. 15, no. 2, 2009, which most libraries received the second week of June 2009. On the date of the search, libraries

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\(^{15}\) A possible example of a stratified quartile sample is that the first, fifth, tenth, fifteenth, and twentieth library in each quartile might be selected. For this information, I consulted with Thomas Jagger, a statistician at the Florida State University Research Faculty.

\(^{16}\) It was generally expected that libraries in the higher *U.S. News and World Report* ranking would have more resources and thus contain fewer errors because they can hire more employees and pay higher salaries to attract more experienced staff. They should therefore have better quality control over their work product. This is, of course, speculative, but it was thought to be worthwhile to include this factor in the study results.
had had two months to correct the bibliographic records by closing the entry and inserting the new title. Expected results were:

3. “Continued by” added: 785]tSouthwestern journal of international law [w(OCoLC) 401314979
4. Check-in boxes deleted or at least no new issues marked as “expected”

Of the twenty libraries, ten had not made these changes two months after they should have received the new title. Two of the twenty libraries canceled this title shortly before the title change occurred; in such a case most libraries would want the title change to display in their bibliographic record. One of the libraries that closed the record used the wrong dates, and one of the libraries had the last issue as v.12 instead of v.15. Most interesting is that the two libraries who canceled the print issues were at law schools ranked in the first quartile and two other libraries from that quartile also had errors. Libraries at law schools ranked in every quartile had errors, but the first quartile showed the most errors. With only ten of twenty libraries making the changes necessary to recognize the new title, the rate of error was fifty percent.

Sample 3: Spelling Error

On September 10, 2009, a search was conducted for the misspelled word “ammendment.” Eight of the twenty libraries had this word misspelled in their catalogs. Two of the libraries with errors were at law schools ranked in the top quartile, three libraries at schools in the third quartile, and three libraries at schools in the fourth quartile. One of the libraries had the misspelling in five separate records. In some of these records, the misspelled word was the only occurrence of the word, meaning users would not find the record unless their system had a spell checker that would catch this misspelling. The error rate for this particular spelling error was forty percent.

Sample 4: Title Change of Serial

On September 16, 2009, a search was conducted for Wisconsin Women’s Law Journal, which ceased with vol. 22, no. 2, fall 2007, and then changed title to Wisconsin Journal of Law, Gender & Society in October 2008. Expected results were:

3. “Continued by” added: 785]tWisconsin journal of law, gender & society[w(OCoLC) 230815277
4. Check-in boxes deleted or at least no new issues marked as “expected”

Of the twenty libraries, only two libraries missed the changes, one at a law school ranked in the third quartile and one in the fourth quartile, for an error rate of ten percent.
Sample 5: Title Ceased

¶27 On September 25, 2009, a search was conducted for *Law Reporter / The Association of Trial Lawyers of America*, which stopped publishing with vol. 52, no. 4, May 2009. Expected results were:

3. Check-in boxes deleted or at least no new issues marked as “expected”

Eleven of sixteen of the libraries that owned this title did not have these three changes in their bibliographic records. Two of the libraries were at law schools ranked in the first quartile and one of those displayed twenty-nine boxes with the status “late.” The error rate for this title was sixty-nine percent.

Sample 6: Title Ceased

¶28 On October 2, 2009, a search was conducted for *Poverty Law Reporter*, a loose-leaf that was discontinued by Commerce Clearing House on January 8, 1981. Expected results were:

2. No check-in boxes
3. Possibly a note such as “Discontinued by publisher, Jan. 8, 1981”

¶29 This title was so old that it was expected that all libraries would have it either correctly closed in their system or have removed it from their shelves and catalog. Eleven of twenty libraries still owned the title; six of the eleven had not made the changes. The error rate for this title was fifty-four percent.

Sample 7: Active Hyperlink for Title

¶30 On November 11, 2009, a search was conducted for the title *Where to Write for Vital Records*, and the expected results were:

1. Link provided: 856[1]uhttp://purl.access.gpo.gov/GPO/LPS2642|xhttp://www.cdc.gov/nchs/howto/w2w/w2welcom.htm. It was expected this link would go to the Centers for Disease Control web site.
2. Other edits to indicate that the last print publication was in 1999, and that the title is currently only available from GPO electronically.

¶31 As law libraries frequently have patrons who ask where to get birth, death, marriage, and divorce records, it was expected most libraries would have this title in their catalogs with an active link. Only twelve of the twenty libraries had the title, and of those twelve, only five had an active link. This was an error rate of forty-two percent for having no link.

Sample 8: Items with Correct Volume and Date and in Correct Order

¶32 On December 9, 2009, a search was conducted for the series *Crime and Justice*. It was expected that the catalog would list each volume the library owned,
in correct order, with the year of the volume also listed. Of the twenty libraries, fifteen owned this title in print and displayed print volumes. Of those fifteen, ten did not meet all three conditions: five met only two conditions (either the volume or the date alone). Three libraries were inconsistent in their item listing—sometimes displaying both the volume and date, and sometimes displaying only the volume. Two libraries had the volumes out of order. This meant an error rate of sixty-six percent.

Sample 9: Items with Correct Volume and Date and in Correct Order

\(\text{§33}\) On December 9, 2009, a search was conducted for *Yearbook / United Nations Commission on International Trade Law*. It was expected to find the items listed in proper order with both the volume and the date displayed. Of the twenty libraries, sixteen did not meet all three criteria, for an error rate of eighty percent.

Sample 10: Hyperlink

\(\text{§34}\) On January 5, 2010, a search was conducted for a LexisNexis Congressional hearing electronic record that had an active link. The title was *Animal Welfare Act: Hearing Before the Subcommittee on Administrative Law and Governmental Relations*. The MARC records for this database were made available in November 2009, so libraries had two months to load the MARC records. It was expected that most libraries at law schools in the top two quartiles would have purchased both the database and the MARC records. Of the twenty libraries searched, only one had a record with the link in its online catalog. That law library is in a law school ranked in the top quartile.

\(\text{§35}\) It was not considered an error to not have this record, but rather an indication of a library valuing loading records into their catalog as soon as possible, so its patrons have access to the resources it has spent so much money to acquire.

Survey and Results

\(\text{§36}\) Because this research showed a relatively high error rate in many of the sample titles tested, a survey was developed for academic law librarians who answer reference questions. The survey was written on Zoomerang, using the issues raised by the errors found in the library catalogs. It was distributed to the Academic Law Libraries Special Interest Section (ALL-SIS) listserv on February 17, 2010. Within one week the survey received 178 visits with 127 replies. The survey and the results for these entries can be found in the appendix.

\(\text{§37}\) The survey showed that the academic law library reference librarians who filled out the survey believe the accuracy of the catalog is important to their ability to answer questions. Specifically:

1. Ninety-six percent indicated that a misspelling in the title, author, or subject heading will have some or a significant effect on their ability to answer reference questions.
2. Eighty-one percent indicated incorrect publisher information will affect their ability to answer reference questions.
3. Ninety-nine percent indicated that if a title has ceased and this is not recorded in the bibliographic record, their ability to answer reference questions will be affected.

4. Ninety-eight percent indicated that if a title changed to a completely different title and this is not indicated in the catalog, their ability to answer reference questions will be affected (seventy-nine percent believed the effect will be significant).

5. Ninety-nine percent indicated that if the check-in record issue boxes are out of order, inconsistent, or incomplete, their ability to answer reference questions will be affected (fifty percent believed the effect will be significant).

6. Eighty-four percent indicated that numerous issue boxes with LATE status will have some or significant effect on their ability to answer questions.

7. Ninety-seven percent indicated that the lack of item records will affect their ability to answer reference questions (fifty-six percent significantly).

8. Eighty-three percent indicated if the itemized volumes are out of order that their ability to answer questions will be somewhat or significantly affected.

9. Eighty-eight percent indicated that the lack of a date with the volume will somewhat or significantly affect their ability to answer questions.

10. Ninety-eight percent indicated that a broken hyperlink in the bibliographic record will affect their ability to answer questions.

11. Ninety-eight percent indicated that the lack of an existing hyperlink in the bibliographic record will affect their ability to answer questions.

12. Ninety-eight percent indicated that lack of information on whether the hyperlink will work only in the library or from outside the library will affect their ability to answer questions.

Quality Is Important

§38 Besides the strong indication from academic law librarians who took the survey that current, correct information in their online catalogs affects their ability to answer reference questions, others have concluded the same.

§39 Information-seeking behavior was studied in detail by OCLC researchers in 2003. They identified self-service, satisfaction, and seamlessness as expectations of "information consumer[s]." Another report from OCLC acknowledges that "information quality and trustworthiness" along with "ease of use, convenience and availability" are important factors of information-seeking behavior. George Zipf, who is known for his "Principal of Least Effort," defines another information-seeking behavior: seekers will use the easiest and most convenient resources, even when better sources are available, but are not as easy to use or find.

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¶40 OCLC researchers produced a significant study in 2009 on what library users want from online catalogs. A key finding was that: "The end user's experience of the delivery of wanted items is as important, if not more important, than his or her discovery experience. Appropriate, accurate, and reliable data elements supporting the transitional experience from discovery through delivery are critical."  

¶41 This all boils down to the old phrase: "garbage in, garbage out," or as a technical services library colleague put it: "junk in and possible complete failure to find . . . is that 'service'?” The task for today's academic law library technical services librarians is to find the right balance between spending time revising the work of their departments (so the most essential data elements of metadata are correct, and also include the desired data quality enhancements)  

21 and keeping up with technology, research, administrative tasks, etc.

In a world of limited resources, library leaders must make choices, creatively deploy the resources they have, and balance competing data quality requirements. A data quality program that strikes a balance between what end users and librarians/staff want and need, but gives an edge to the desires of end users, seems more likely to assure the library will continue to thrive in the end-user communities it serves.  

¶42 It is hoped that the research reported here will spur libraries to make the best decisions in the continual cost-benefit analysis for keeping the library online catalog as accurate as possible. Likewise, this research makes a small contribution in reducing the "dearth of research to help libraries understand the impact of individual decisions on user-benefit and catalog usability."  

¶43 Academic law reference librarians were nearly unanimous in saying that errors in online catalogs have an effect on their ability to answer questions accurately and quickly. One respondent pointed out that significant reference work is performed virtually from home or away from the library to extend hours of service to their communities. This makes the "correctness" of the catalog immensely important.

¶44 In conclusion, quality control of the metadata in online law library catalogs was shown to be lacking. Errors ranged from five to eighty percent. Further, academic law reference librarians determined that the errors would affect their ability to answer reference questions accurately and efficiently. It should therefore be a high priority for any library that wishes its catalog to be as beneficial and accurate as possible to patrons to find ways to improve metadata quality for users of that catalog. The path to quality control includes active job management of library processes, well-defined performance expectations for library employees, active corrective and preventive action by library administrators, and regular review and revision of metadata. The quality of the outputs is at risk if any of these are deficient.

20. CALHOUN ET AL., supra note 4, at 11.

21. The most highly desired enhancements are usually considered to be links to online content, more subject information, summaries or abstracts, tables of contents, and cover art. See id. at 13 (listing all of these, with the exception of cover art).

22. Id. at 50.

Appendix

ALL-SIS Survey (with Responses): Quality Control in Bibliographic Records

PART 1—Assume you are a librarian on duty at reference. A patron asks if the serial she is using (it could be a journal, loose-leaf, volume with a pocket part, or a cumulative supplement) is up to date. You are not familiar with this title, and you use your library catalog to answer her question. If you encountered the following situations, please mark how they would affect your ability to provide an answer.

1. Words in the title, author, or subject headings are misspelled.

<table>
<thead>
<tr>
<th></th>
<th>No Effect</th>
<th>Some Effect</th>
<th>Significant Effect</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5</td>
<td>46</td>
<td>41</td>
<td>127</td>
</tr>
<tr>
<td></td>
<td>4%</td>
<td>36%</td>
<td>32%</td>
<td>100%</td>
</tr>
</tbody>
</table>

2. The publisher information is incorrect.

<table>
<thead>
<tr>
<th></th>
<th>No Effect</th>
<th>Some Effect</th>
<th>Significant Effect</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>24</td>
<td>35</td>
<td>9</td>
<td>126</td>
</tr>
<tr>
<td></td>
<td>19%</td>
<td>28%</td>
<td>7%</td>
<td>100%</td>
</tr>
</tbody>
</table>

3. The title ceased publication but this is not indicated in the bibliographic record.

<table>
<thead>
<tr>
<th></th>
<th>No Effect</th>
<th>Some Effect</th>
<th>Significant Effect</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>18</td>
<td>71</td>
<td>126</td>
</tr>
<tr>
<td></td>
<td>1%</td>
<td>14%</td>
<td>56%</td>
<td>100%</td>
</tr>
</tbody>
</table>

4. The title changed completely to another title and this is not indicated in the bibliographic record.

<table>
<thead>
<tr>
<th></th>
<th>No Effect</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>2%</td>
<td>0%</td>
</tr>
</tbody>
</table>

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24. Zoomerang software allows five choices, but displays the results in only three areas: no effect, some effect, and significant effect, with choices two and four remaining unlabeled in the results.
Some Effect 8 6%
               16 13%
Significant Effect 100 79%
Total 126 100%

PART 2—You have located the title in your catalog and you want to tell the patron the most recent update or issue that your library has received.

5. There is a check-in record, but the issue boxes are out of order, inconsistent, or incomplete.

   No Effect 1 1%
               4 3%
   Some Effect 16 13%
               42 33%
   Significant Effect 64 50%
Total 127 100%

6. The check-in record displays many issue boxes with a LATE status.

   No Effect 8 6%
               13 10%
   Some Effect 38 30%
               29 23%
   Significant Effect 39 31%
Total 127 100%

7. There was no item information displaying which volumes the library owns, so you will have to go to the shelves to determine your library holdings or what might be checked out.

   No Effect 4 3%
               6 5%
   Some Effect 15 12%
               30 24%
   Significant Effect 71 56%
Total 126 100%

8. The itemized volumes are out of order.

   No Effect 3 2%
               19 15%
   Some Effect 49 39%
               35 28%
9. The itemized volumes display the volume but not the date.

<table>
<thead>
<tr>
<th>Effect</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Effect</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>Some Effect</td>
<td>41</td>
<td>32%</td>
</tr>
<tr>
<td>Significant Effect</td>
<td>24</td>
<td>19%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>127</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

10. There is a link to an electronic version of the title but it does not work.

<table>
<thead>
<tr>
<th>Effect</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
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<td>2%</td>
</tr>
<tr>
<td>Some Effect</td>
<td>4</td>
<td>3%</td>
</tr>
<tr>
<td>Significant Effect</td>
<td>23</td>
<td>18%</td>
</tr>
<tr>
<td></td>
<td>64</td>
<td>51%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>126</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

11. You know the title exists in electronic format but there is no link in the bibliographic record.

<table>
<thead>
<tr>
<th>Effect</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
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</tr>
<tr>
<td>Some Effect</td>
<td>10</td>
<td>8%</td>
</tr>
<tr>
<td>Significant Effect</td>
<td>33</td>
<td>26%</td>
</tr>
<tr>
<td></td>
<td>37</td>
<td>29%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>127</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

12. There is a link to an electronic version of the title but there is no way to know if it is available exclusively in the library, or may be available from home.

<table>
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<tr>
<th>Effect</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
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<td>2%</td>
</tr>
<tr>
<td>Some Effect</td>
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<td>7%</td>
</tr>
<tr>
<td>Significant Effect</td>
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<td>22%</td>
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<tr>
<td></td>
<td>40</td>
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</tr>
<tr>
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<td><strong>100%</strong></td>
</tr>
</tbody>
</table>