Discovering data discrepancies during deselection: a study of GreenGlass, Aleph, and due date slips circulation data

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Abstract

Amid a weeding project, librarians at a state college suspected GreenGlass's circulation data was inaccurate. This study compared GreenGlass's and Aleph's circulation statistics for a random sample of books. It also determined if GreenGlass's list of books with zero uses included curriculum related works using keyword searching. The study compared GreenGlass's and due date slips' circulation data for curriculum related titles. Some GreenGlass circulation data was erroneous. Additionally, curriculum related books that circulated were on GreenGlass's zero use list. The study's results helped retain pertinent titles and highlighted the inadequacy of relying exclusively on circulation data to weed monographs.

Keywords: Aleph, academic libraries, decision-support tool, GreenGlass, integrated library system, weeding

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Introduction

Should librarians automatically weed books that a commercial weeding decision-support tool identified as having "zero recorded uses" from academic library collections? The results of a study at the State University of New York (SUNY) Oneonta comparing the circulation data of GreenGlass, a commercial weeding decision-support tool, Ex Libris' Aleph, the library's integrated library system (ILS), and books' due date slips suggest that weeding books based solely on lack of use may lead to very poor deselection decisions. This study was initiated for two reasons. First, the college administration urged librarians to abandon their typical weeding strategy of considering several criteria when withdrawing books from the library's collection. Instead, the administration encouraged librarians to discard books that GreenGlass classified as having zero recorded uses. Second, librarians began to suspect that GreenGlass's circulation data did not match Aleph's nor book due date slip's circulation data. The investigation served several important purposes. For example, the study was designed to determine the percentage of books that GreenGlass identified as having no recorded uses that circulated according to Aleph and book due date slips. In addition, the study aimed to ascertain if items GreenGlass identified as having no recorded uses were titles of significance to the college curriculum. Furthermore, the study results were shared with college administrators so that they would have accurate data to make informed recommendations regarding the future of the library's print collection.

In past weeding projects, the college's librarians did an item-by-item review of titles to identify candidates for weeding which was a time-consuming task. Additionally, the decision to withdraw or retain a title was based on several criteria. These criteria included a mix of objective criteria such as number of times a book circulated and the age of the book; and subjective criteria

such as relevance to the college curriculum, value as a primary source, historical significance, and local importance. Librarians did not apply these criteria consistently when weeding. Consequently, for the most recent weeding project, the librarians resolved to use an automated, rules-based approach to generate weeding lists. A rules-based approach is one "in which a computer algorithm assesses multiple factors about thousands of titles and produces a list of withdrawal candidates based on criteria thresholds developed by the librarians" (Ward, 2015, p. 53). The librarians chose a rules-based approach for two reasons. The first reason was to save library staff time. The second reason was to develop and apply a consistent set of objective criteria such as number of uses, publication date, and holdings at other libraries to identify candidates for removal from the collection. Therefore, the library contracted with Sustainable Collection Services (SCS) and used the company's GreenGlass web-based application to complete the rules-based component of the weeding project. The library administration heard positive feedback about GreenGlass from another library in the SUNY system, which had used the web application in its weeding project. The library in the study used GreenGlass to detect no use and older monographs in the collection. Librarians and faculty would then review those titles to determine, despite their lack of use or datedness, if they were still of value to library users and thus needed to remain in the collection.

Benefits of a combined weeding strategy

The state college librarians felt that using a combination of an automated, objective, rules-based method to identify no use and dated books, and a subjective, professional review of these titles was a sound strategy to achieve the objectives of the weeding project. The objectives of the weeding project were to retain important titles while removing unused and older material thus making the collection more relevant and accessible to users. These were sensible goals and

compatible with solid weeding practice. According to Trueswell (1965) and Ward (2015), ultimately, the goal of weeding is to enhance the library patron's experience by making it simpler and faster for the user to find relevant information. Additionally, Ward (2015) advocated for the retention of pertinent print materials in her important work on "rightsizing" academic library collections. Ward argued that rightsizing a print collection "is not just about space management; it is also about honing a collection to make it more relevant and accessible for users" (Ward, 2015, p. 51-52). Ward favored a rules-based approach as one method to achieve this goal. Likewise, in his seminal work, Slote (1997) promoted a rules-based approach to deselection and was apt "to reject the purely professional and subjective approach to weeding" (p. 20). Slote believed that effective weeding is possible using a single objective criterion, a book's shelf-time period. He further believed that past use is "a reliable, valid predictor of future use" (Slote, 1997, p. 84). In contrast, Ward suggested using multiple criteria to assess book titles for deselection. These criteria included the book's circulation history, publication date, holdings at other libraries, and availability in digital format. Similarly, Kohn (2015) suggested that in addition to circulation statistics, librarians should employ core lists, interlibrary loan data, and benchmarking against peers to assess collections. Both Kohn (2015) and White (2017) maintained that in addition to its circulation data, librarians should also consider a book's citation counts when making weeding decisions.

In addition to using multiple deselection criteria, librarian review of deselection lists generated by objective criteria such as circulation is good practice. For example, while Slote (1997) and Ward (2015) concurred that an objective approach to weeding is quicker and more accurate than a title-by-title review by librarians each using their own subjective criteria, they were also proponents of some degree of librarian review of weeding lists. For example, Ward

(2015) asserted, “even the most carefully crafted query cannot filter for some elements, such as flagging publications by the university president or local Noble laureate” (p. 54). In addition, Slote stated that it is important that librarians review books identified for weeding and retain books by local authors, gift books, books on local subject matters, and new books. Furthermore, Williams (1986) discussed a successful weeding project using Slote’s method at the library at Humberside College of Higher Education in the United Kingdom. The method resulted in the very fast removal of books from the shelves that had not circulated; however, the college’s faculty and librarians reviewed the books identified for weeding. Faculty and librarians used subjective criteria to identify books for retention in the collection. Williams added that “Slote and all careful weeders use methods primarily to identify items which have the potential to be weeded, not to relegate anything and everything mechanistically” (Williams, 1986, p. 154). Likewise, Johnson (2014) argued that “Most weeding processes combine mechanical, objective approaches (such as analysis of circulation data and citation frequency) with more judgmental, subjective considerations (such as local program needs and knowledge of the subject literature)” (p. 197). Johnson contended that past use and predicted future use are “seldom used as the sole criteria for withdrawing items” (p. 199). She disagreed with Slote’s notion that previous circulation history is a dependable gage of future use. For example, she noted, “programs, interests, and priorities change. The 1970s energy crisis produced interest in peat and wind as sources of energy and sent researchers after publications that had not been requested in sixty years” (Johnson, 2014, p. 199). Johnson (2014) was unequivocal in her position on computer-generated weeding lists insisting that when using this method, “librarians should review the software-generated reports for final withdrawal decisions” (p. 201). Finally, dependence solely on circulation statistics to make weeding determinations hinders academic libraries efforts at

presenting diverse viewpoints in collections. In a discussion of the future of print collections in academic libraries, librarians at Arizona State University asserted that the print materials of "historically marginalized communities…are often particularly fragile, easily lost, or even relegated to off-site storage due to low circulation rates" (Arizona State University, 2017, p. 8). They further argued that using "records of historic use runs the risk of enshrining traditional perspectives and risks losing more diverse cultural perspectives" (Arizona State University, 2017, p. 8).

Detecting the data discrepancy in GreenGlass

The state college librarians observed that GreenGlass is a very powerful weeding decision-support tool. For example, GreenGlass analyzed and supplied key metrics on the library's collection. The metrics provided an informative overview of the collection including the number of books in the collection and the proportion of books that did not circulate. Additionally, librarians used the web application to experiment with different withdrawal criteria. Furthermore, GreenGlass quickly generated potential titles for removal from the collection based on the librarians' various deselection scenarios. Finally, librarians were able to download the titles into Excel spreadsheets and share them with faculty. Despite the tool's many benefits, GreenGlass co-founder Rick Lugg (2012) warned about a shortcoming of using a data-driven approach to weed library collections. He astutely cautioned, "Data-driven deselection can only be as good as the underlying data. Accuracy depends on how recently and how well inventories and reclamation projects have been done. The quality of bibliographic, item and circulation data determine the effectiveness of matching with external sources" (Lugg, 2012, p. 203). Unfortunately, it appears college administrators misunderstood GreenGlass's purpose and overestimated its reliability. They were confident that the library could accomplish effective

weeding by simply removing books that GreenGlass identified as having no recorded without any librarian or faculty review.

Notwithstanding GreenGlass's many assets, librarians began to suspect a problem with the application's circulation data. Suspicion arose during a casual physical inspection of the books recorded on one of the GreenGlass generated weeding lists. Two books on the weeding list that GreenGlass identified as having no recorded uses between 1994 and June 2014 contained dates stamped on their due dates slips within the 20-year period. The most recent year stamped in one book's due date slip was 2001. The most current year printed in the other book was 1999. A quick scan of the entire GreenGlass spreadsheet itemizing the books with no recorded uses revealed that works by Toni Morrison, Jane Austen, and other significant authors were on the list. It seemed very unlikely that the Austen and Morrison books would not have any recorded uses for two reasons. First, they are popular authors. Second, the college's English department offers courses on these two novelists. A visual inspection of the due date slip in Morrison's book, *Tar Baby* and Austen's title, *Pride and Prejudice*, indicated that the books circulated recently and regularly. A check of the books' circulation history in Aleph confirmed the information on the date slips. Another perusal of the GreenGlass spreadsheet denoted that there was a "last charge date" for each of the four titles in question. The library supplied SCS with last charge date information from Aleph. Last charge date records were available from 2003 to 2014. According to GreenGlass, *Tar Baby*'s last charge date was 12/16/2013.

Technical services librarians and staff offered to probe these four examples in an attempt to discover the root of the data problem. They investigated the GreenGlass and Aleph circulating records but were unable to explain the contradiction between the GreenGlass circulation data of no recorded uses and the library's data, which clearly indicated use. Moreover, library staff did

not know if the data incongruities were limited to a few examples or widespread. In addition, library staff theorized that the last charge date indicated in GreenGlass was the most current date that a patron borrowed a book; however, an inspection of the due date slip of further books that GreenGlass classified as having no recorded uses and a last charge date showed that they did not circulate between 1994 and June 2014. Consequently, an investigation of the data inconsistency was undertaken. This investigation had two objectives. First, it intended to determine the degree of the discrepancy between the GreenGlass and library circulation data. Second, it aimed to ascertain if the GreenGlass spreadsheet of items having no recorded uses and a last charge date contained titles of significance to the college curriculum.

GreenGlass's analysis of the collection

The scope of the GreenGlass analysis of the library's collection included the circulating print monographs on the second and third floors of the library. The analysis excluded print journals, U.S. and state government documents, e-books, microforms, reference books, special collections, and juvenile materials. In addition, GreenGlass identified the library's books reviewed in *Choice* and classified as *Choice* Outstanding Academic Titles (OAT). The GreenGlass application also matched the library's titles to the holdings of OCLC WorldCat, HathiTrust Digital Library, library peers, and consortium partners. The library supplied SCS with circulation and in-house use statistics from Aleph. The statistics included circulation data from 1994 to June 2014 and in-house use data from 2008 to June 2014. The results of the collection analysis indicated that there 330,871 items in the collection. The analysis revealed that 162,829 items, or 49% of the collection, had zero recorded uses. The analysis also showed that 50,008 items, or 15% of the collection, had three or more recorded uses.

Literature review

A search of the literature did not reveal other accounts of libraries experiencing problems with inconsistencies between ILS and GreenGlass circulation data. On the other hand, there are articles that outlined descriptions and advantages of SCS weeding decision-support tools from the company's perspective. These articles are helpful in presenting to librarians the company's weeding decision-support tools, but their primary purpose is to promote these products. For example, in their interview with Gilson and Strauch (2012), SCS's founders, Rick Lugg and Ruth Fischer, promoted their weeding decision-support product and described its capabilities and benefits. They noted that their product was created in response to libraries' need to reduce spaces for physcial collections in favor of spaces for information commons, writing centers, and group study rooms. Lugg (2012) elaborated further on SCS's weeding decision-support tool and his philosophy toward deselecting items from library collections that underlies the tool's capabilities. Lugg's position is that the goals of weeding a collection is to reduce low-use titles held in open stacks while ensuring that withdrawn items are available at other libraries in digital form, through interlibrary loan, or in e-book format. Consequently, library data such as circulation history and publication date alone are insufficient criteria for making deselection decisions. Lugg also acknowledged the shortcomings as well as the benefits of the weeding decision-support tool. The advantages of the tool include saving staff time and enhancing reliable weeding decisions. On the other hand, libraries that contract with SCS will incur a substantial fee for the company's services.

In a subsequent interview with Strauch and Gilson (2015), Lugg and Fischer discussed SCS's web applications GreenGlass and GreenGlass for Groups (GGG). They reiterated GreenGlass's capabilities and benefits to libraries, including its ability to determine a book's

circulation history, holdings in other libraries, and availability in HathiTrust. They also discussed the capabilities of GGG, which allows groups of libraries to examine their combined collections and test various criteria for removing books from collections.

There are ample examples in the literature that supported the company's assertions that its weeding decision-support tools are effective. These articles described libraries' successful partnerships with SCS and the importance of the company's applications in collection management projects. Some articles provided detailed insight into the use of GreenGlass in library consortia's projects. For example, Osterman, O'Gara, and Armstrong (2016) reported on the Virtual Library of Virginia collection analysis project in which librarians used GreenGlass to conduct an analysis of close to six million volumes. The authors stated that GreenGlass was "an essential component" of the project and the particpating libraries "highly valued" the weeding decision-support tool (Osterman, et al., 2016, p.172). Nevertheless, the authors indentified some minor problems with the application stating that it had some limitations in terms of functionality and flexibility. In another library consortium example, Levenson (2015) concluded that SCS's GGG was an important tool in the creation of the shared print monograph collection among eleven Michigan public university libraries in the Michigan Shared Print Intiative (MI-SPI). The MI-SPI shared data set included over two million items. GGG permited the participating libraries to achieve the goals of reducing the print collection responsibly, releasing library space for other uses and more relevant resources, retaining access to titles held broadly among participating libraries, and keeping rare or unique titles in each libraries' collection.

In addition to library consortia, individual academic libraries have experienced success using SCS's services. For example, Held (2016) combined a quantitative analysis and qualitative review to weed the political science collection at University Library, California State

University Stanislaus. The library used GreenGlass to identify books with the Library of Congress call number J, published before 1981, and not borrowed since 1990. The use of this set of criteria resulted in a list of over 3,000 books meeting the specified conditions. The author noted that GreenGlass data revealed that other libraries in the California State University system and the United States held many of the books on the GreenGlass generated weeding list. This information helped to frame Held's weeding priorities. Since these titles were available and accessible at other libraries, the weeding project "could preference serving local users over preservation" (Held, 2016, p. 140). In another instance, Snyder (2014) specifically used SCS's weeding decision-support tool at Rollins College's Olin Library in Florida because of its ability to generate lists of potentials discards using multiple weeding criteria. The librarians' initial strategy was to identify books for removal that had not been borrowed nor used in-house since October, 17, 1995; however, the author noted that "making retention decisions based merely on date of last use and publication date, for example, can result in bad public relations or the loss of significant works" (Snyder, 2014, p. 19). Therefore, the librarians identified six criteria that a book had to meet in order to be included on the list of withdrawal candidates. These criteria included acquired before 1996, did not circulate nor used in-house prior to 1996, held in more than 100 libraries in the United States, held at either the University of Florida or Florida State University, not listed in *Resources for College Libraries* or *Choice* Reviews, and not about Florida. The author concluded that using several criteria for weeding "improved the process of weeding" at Olin Library (Snyder, 2014, p. 28). Furthermore, the SCS weeding decision-support tool helped to reduce the general collection by over 20,000 books in two years and saved the library staff "time and effort" (Snyder, 2014, p. 29).

Other articles presented brief but positive reviews of SCS GreenGlass. For example, libraries in Maine formed the Shared Collections Strategy to preserve and manage "legacy print collections" (Revitt & Kieft, 2017, p. 73). The authors stated that the project was successful due to a variety of reasons including the use of SCS's GreenGlass. In another case, Kieft, Sterns and Perricci (2016) described the Eastern Academic Scholars' Trust (EAST) retention project. EAST selected GreenGlass to conduct the analysis of its forty-eight members' collections. The authors described GreenGlass as "powerful, highly interactive," "somewhat addictive," and offering "considerably more insight into their local circulating print collection than they had previously" (Kieft, et al., 2016, p. 88). In addition, they noted that many of the EAST libraries planned to use GreenGlass for local collection management projects. Koch and Kieft (2015) reported that the Central Iowa Collaborative Collections Initiative (CI-CCI) hired SCS to analyze its combined collections of approximately one million title records. They used GreenGlass to isolate titles for "one-copy retention in the shared collection" (Koch & Kieft, p. 76). SCS also allocated the retention copies amongst CI-CCI libraries. In their article, Marien and Mundt (2015) noted that the Washington Research Library Consortium contracted with SCS "to identify rarely held materials at each of the libraries, provide insight that would allow for strategic management of the library collections and ensure retention of materials across the consortium and across the library community" (p. 84). In addition to the analysis of the collection, the authors noted that SCS provided helpful remediation lists that allowed the cleanup of title and author records in their local database. Finally, although GreenGlass was not the focus of the article on developing weeding training programs for library staff, O'Neill (2016) remarked upon the benefits of GreenGlass tutorials to assist staff when they used the application in drawdown projects.

Other articles reviewed libraries' use of the ILS as a weeding decision-support tool. Ward (2015) affirmed the use of the ILS as a weeding decision-support tool because "It is possible to create sophisticated queries in an integrated library system" (p. 54). More specifically, libraries applied their ILS to generate weeding lists based on objective criteria such as circulation history, in-house use, publication date, acquisition date, and last check-in date (Arbeeny & Chittenden, 2014; Martin, Kamada & Feeney, 2013; McHale, Egger-Sider, Fluk, & Ovadia, 2017; Murphy, 2013; Smith, 2012; White, 2017). These authors did not identify any specific problems with their ILS-generated weeding lists; however, a common theme among the articles was that libraries did not rely on the ILS-generated lists exclusively to make weeding decisions. For example, librarians at John Paul II Library at the National University of Ireland Maynooth used thirteen additional criteria to evaluate lists of books generated by the ILS (Murphy, 2013). They also sent the list of potential discards to faculty for review. The author concluded, "Combining quantitative data with feedback from the academic community ensured a comprehensive and credible process" (Murphy, 2013, p. 269). Likewise, librarians at the University of Arizona Libraries used "evaluative criteria," such as relevance of library materials to campus users, to help them determine if they should retain, or withdraw, books on their ILS-generated weeding list (Martin, et al., 2013, p. 233). Additionally, librarians at LaGuardia Community College Library used subjective criteria such as significance to the discipline and value to the college curriculum to evaluate books on their ILS-generated weeding lists. The librarians applied subjective criteria in addition to circulation and publication data because they believed that relying solely on the latter data "can lead to inappropriate deselection decisions" (McHale, et al., 2017, p. 106). Finally, White (2017) recommended using citation counts in

conjunction with ILS-generated data such as circulation and publication information when withdrawing research monographs.

This study attempts to address a gap in the literature on libraries' experiences with GreenGlass. It appears to be the lone study to focus exclusively on a problem a library encountered when using GreenGlass's circulation data. The study is important for several reasons. For example, it attempts to demonstrate the need for librarians to confirm that circulation data transferred from an ILS to a weeding decision-support tool match. Furthermore, the study endeavors to share with other librarians the methods one library used to determine if GreenGlass's circulation records matched ILS circulation data. Additionally, the study reinforces the arguments stated in the literature that librarians not rely solely on objective criteria nor computer-generated weeding lists to make withdrawal decisions. It also suggests that library staff perform at least a perfunctory examination of books' due date slips prior to removing them from collections to confirm their circulation history. Finally, the author hopes that this study will facilitate ongoing dialog about the benefits and limitations of automated weeding decision-support tools.

Study questions

The study endeavored to answer four questions:

1. What is the percentage of books that GreenGlass identified as having no recorded uses and a last charge date that circulated according to Aleph?
2. What is the percentage of books that GreenGlass identified as having no recorded uses and no last charge date that circulated according to Aleph?
3. What is the prevalence of titles relevant to the college curriculum on the GreenGlass generated list of books with no recorded uses and a last charge date?

4. What is the percentage of titles relevant to the college curriculum that GreenGlass identified as having no recorded uses and a last charge date that circulated according to the due date slips for these titles?

Methodology

The author performed two queries in the GreenGlass Interactive Query Builder to generate lists of books for examination. The criteria for each query included books with zero recorded uses and a last charge date (query 1); and books with zero recorded uses and no last charge date (query 2). The results of each query were exported to an Excel spreadsheet. One hundred titles were selected randomly from the results of query 1. The library's circulation clerk checked Aleph for each book's circulation history between 1994 and June 2014. One hundred titles were selected randomly from the query 2 results. The library's circulation clerk checked Aleph for each book's circulation history between 1994 and June 2014.

The author conducted a keyword search in the query 1 Excel spreadsheet results to determine the prevalence of books relevant to the specific courses taught at the college. The Excel spreadsheet was searched using the following keywords: Isaac Newton, Hitler, Toni Morrison, World War, and Jane Austen. In addition, the following specific book titles were searched: *The Calculus Wars* and *Capital*. Furthermore, the last name of five of the state college's faculty members whose books are in the collection were searched to determine if their publications were on the query 1 list. The number of books that matched the keywords were counted. Twenty books were selected from the books that matched the keywords and their due date slips were checked to determine if they circulated between 1994 and June 2014. The number 20 was chosen because it was considered a manageable number of books to examine.

Results and discussion

Question 1 and question 2 results

Query 1 yielded 24,715 titles that GreenGlass classified as having no recorded uses and a last charge date. According to Aleph, 48% percent of the randomly selected books from the query 1 results circulated at least once between 1994 and June 2014 (Figure 1). Aleph circulation data ranged from zero to 16 uses. Query 2 returned 138,654 books that GreenGlass identified as having no recorded uses and no last charge date. According to Aleph, only 1% of the randomly selected books from the query 2 results circulated between 1994 and June 2014. The book that circulated had one recorded use.

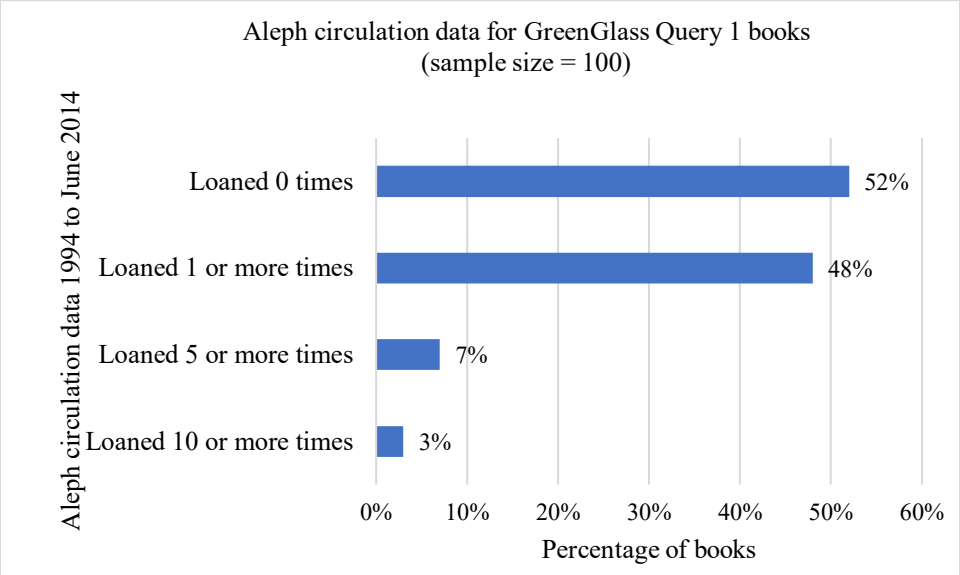

Figure 1. Aleph circulation data for GreenGlass Query 1 books

Question 3 and question 4 results

All but three of the keywords matched books in the query 1 results. Three college faculty surnames did not appear on the query 1 list; however, the publications of two faculty were on the list, including a work co-authored by the college president. The keyword search yielded 168

books that matched the keywords but the investigation of the due date slips was limited to 20 titles (Table 1). The review of the due date slips in the books of significance to the curriculum disclosed that 80% of the books circulated at least once between 1994 and June 2014 (Figure 2). Circulation data ranged from zero to 24 uses.

Keywords	Book Title	Number of times loaned 1994 to 6/2014
Isaac Newton	*The Principia: mathematical principles of natural philosophy*	9
Isaac Newton	*An account of Sir Isaac Newton's philosophical discoveries*	5
Isaac Newton	*Unpublished scientific papers of Isaac Newton*	0
Faculty Surname	*Cities, change, and conflict*	9
Faculty Surname	*The literacy leadership handbook: best practices for developing professional literacy communities*	1
Hitler	*Hitler's pope:the secret history of Pius XII*	19
World War	*The censored war: American visual experience during World War Two*	16
Toni Morrison	*Jazz* (copy 1)	10
Toni Morrison	*The Cambridge companion to Toni Morrison*	5
Toni Morrison	*Jazz* (copy 2)	13
Toni Morrison	*Beloved*	24
Toni Morrison	*The fiction of Toni Morrison: reading and writing on race, culture, and identity*	4
Toni Morrison	*Toni Morrison: critical and theoretical approaches*	6
Toni Morrison	*Toni Morrison*	3
Jane Austen	*Northanger Abbey*	8
Capital	*Capital*	12
The Calculus Wars	*The Calculus Wars*	13
World War	*Cambridge History of the First World War* v. 1	0
World War	*Cambridge History of the First World War* v. 2	0
World War	*Cambridge History of the First World War* v. 3	0

Table 1. Books of significance to curriculum and due date slips circulation data

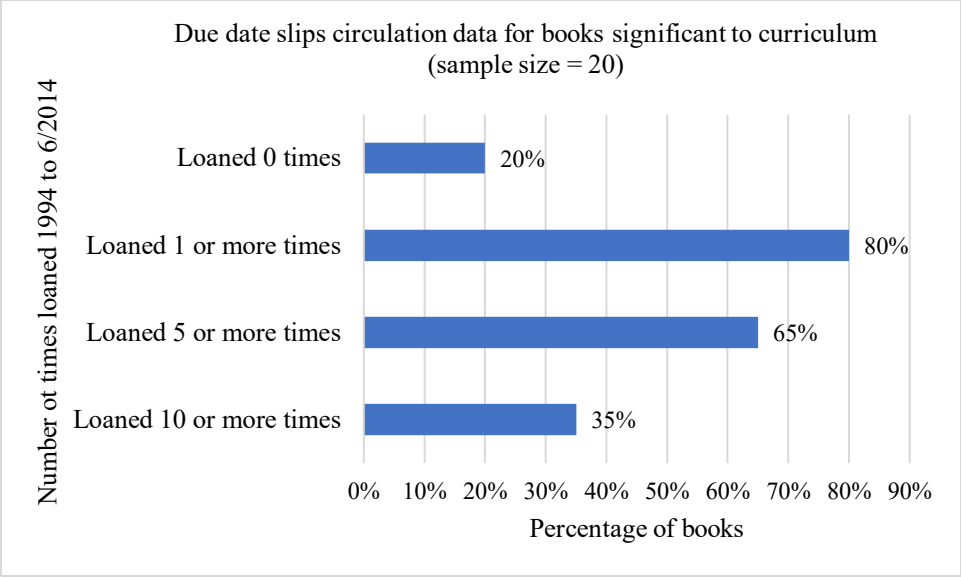

Figure 2. Due date slips circulation data for books significant to curriculum

The results of the circulation data analysis were illuminating. For example, the results showed that nearly one-half of the books in the query 1 sample circulated. The findings verified that there was an inconsistency between GreenGlass's and Aleph's circulation data, and the inconsistency was extensive. It is plausible that the circulation statistics of almost one-half of the books in the query 1 results were not in agreement with Aleph's data. On the other hand, the results also showed that most of these books were not heavily used titles. According to the Aleph circulation data, 93% of the books were loaned less than five times. It is unlikely that the impact on the collection and users would have been catastrophic if these books were discarded. Nonetheless, a further review of the titles in query 1 indicated that 12% of the books were added to the collection in 2009 or later and 11% were published after 2008. The removal of newer books would have represented a more significant loss for two reasons. For instance, recent scholarship would not have been available to library patrons. Moreover, the library's financial investment in recent acquisitions would have been squandered. The titles in query 1 also included works on historically marginalized groups (Indigenous peoples, African Americans)

and non-Western perspectives (Chinese philosophy and Islamic law). The removal of these books would have been consequential because of the loss of diverse perspectives in the collection.

The results of query 2 indicated that GreenGlass's and Aleph's circulation data did not match in 1% of the books. These results confirmed that the data inconsistency was less of a concern among the books that GreenGlass identified as having no recorded uses and no last charge date. Consequently, librarians felt more confident in the accuracy of the GreenGlass circulation statistics for books generated by query 2 criteria.

The keyword search of the query 1 results confirmed books of significance to the curriculum were on the GreenGlass list of books meeting the criteria of no recorded uses and a last charge date. In addition, there was a large inconsistency between GreenGlass's and due date slip's circulation data. The results showed that the GreenGlass data and the due date slips did not match in 80% of the examples. The removal of these books from the collection would have had serious consequences. For example, students would no longer have had immediate access to these popular, curriculum-related titles in their own college library. Second, the library's reputation would have suffered greatly if students and faculty discovered that the library removed these books from the collection based on erroneous data.

Limitations and further research

This study has several limitations. For example, the results of the inquiry are limited to the library in the study. Furthermore, the random sample of books selected from the query 1 and query 2 results is quite small relative to the total number of records. Likewise, the sample of books selected using the keyword search of query 1 results is small and intentionally chosen. Therefore, the results may not be able to be generalized to all the books that GreenGlass

classified as having no recorded uses. In addition, circulation statistics of the books of significance to the college curriculum were not gleaned from Aleph. Although librarians were confident that the information on the due date slips was accurate, using the data from Aleph would have been consistent with the rest of the study's methods for checking the library's circulation data. The study did not include certain data due to time constraints. For example, in-house use was not counted. Therefore, the study may be underreporting the use of the books in the sample. In addition, the study did not analyze how recently the books in the sample circulated. Other data that may have helped to evaluate the value of the books were also excluded from the analysis. For example, the study did not incorporate the number of books in the samples that were designated as a *Choice* OAT. Nevertheless, the study produced evidence that showed there were inconsistencies between some of the GreenGlass and library circulation data. The study also demonstrated that books of relevance to the curriculum were on the GreenGlass list of books meeting the criteria of no recorded uses and a last charge date.

Further work with the GreenGlass list of books with no recorded uses is warranted for several reasons. For example, enlarging the sample for books from the query 1 and query 2 results may yield a more accurate picture of the inconsistency between the GreenGlass and Aleph data. Furthermore, it would be also helpful to identify books that are *Choice* OAT. Even though a book has no recorded uses, it could still be an important title and of value to the collection. *Choice* OAT data would be helpful to assess the importance of the books on the no recorded uses list. In addition, checking Aleph for the last date that a book was checked out to a patron would provide an idea of its current usefulness to the library's patrons. Finally, it would be helpful to check it the books on the no recorded uses list are unique to the library in the study and therefore still of value to the local user population.

Conclusion

The study to determine if the GreenGlass data were consistent with Aleph and due date slips was time consuming and labor intensive; however, the work proved to be a useful exercise. For example, the details from the investigation confirmed that some of the GreenGlass data was inaccurate and highlighted that computer-generated data is imperfect. Furthermore, the results provided the state college's librarians with evidence to support the retaining of important titles. In addition, the study's outcomes guided librarians to retain books with a last charge date thus avoiding the accidental removal of circulating and important titles and underscored that retention criteria are equally essential components of withdrawal projects. Additionally, the study results further reinforced the assertions in the literature that librarians making weeding decisions on both objective and subjective criteria is sound practice. Finally, the study provided evidence that the library would discard important and used titles if librarians weeded all the books that GreenGlass identified as having no recorded uses. The author shared the results of the circulation analysis with the college administration. The college administration subsequently reversed its position that librarians withdraw the books with zero recorded uses from the collection. This reversal saved important titles and avoided the task of justifying to students and faculty the removal of books by Jane Austen, Toni Morrison, the college president, and other titles germane to the college curriculum.

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