

## **Defining an Undergraduate Core Journal Collection**

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The authors outline a multiple methodology process to develop locally relevant core journal lists for undergraduate research. Criteria were inclusion in major aggregator databases, in expert lists, and comparison with similar collections. They conclude with a list of almost 2100 journals that support undergraduate education at their institution and outline other considerations when adding or canceling these titles.

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Core journal lists help librarians evaluate the adequacy of their institution's collections and make decisions about which journals to retain and which to cancel. They also are a useful resource when prioritizing requests for new subscriptions or in evaluating the content of full text aggregated databases. Core lists have been developed for many subject fields, library types, and user groups.<sup>1</sup> Sorely lacking, however, are sufficient core lists of journals for undergraduate collections.

Such lists are needed to ensure adequate library support for undergraduate education, a primary mission for many colleges and universities in the United States. Despite the importance of undergraduate education, there often is no effective advocate for this audience's library needs. Faculty and subject librarians at these institutions may tend to focus on their own disciplines and research interests when requesting new journal subscriptions or protecting existing subscriptions during times of budget shortfalls. As an unintended consequence, these more specialized journals may be overrepresented in the library's collection, to the detriment of the general interest and interdisciplinary periodicals that are essential to undergraduate teaching and learning. An undergraduate core journal list can provide librarians with the information they need to protect existing subscriptions and identify needed titles. It can also help them effectively compare and evaluate the adequacy of the content offered by the growing number of full-text aggregator products aimed at the undergraduate academic market.

The current economic climate requires that libraries use all available means to ensure that acquisitions budgets are well-spent. Between 1993 and 1997, periodical prices escalated at an average annual rate of 9.48 percent for United States titles and 12.14 percent for foreign titles.<sup>2</sup> A college that paid \$1,000,000 for periodicals published in the United States in 1992 was paying \$1,572,000 for the same titles in 1997. Since many academic libraries are facing steady or even declining budgets, journal cancellations are often a necessity. This challenging fiscal situation is expected to continue for the foreseeable future. Thus, there is a great need for an objective, efficient, and cost-effective way to make decisions concerning journal subscriptions. To date, most collection developers have relied on subject specific core lists and faculty participation to make these decisions. A core list of undergraduate journals

would help ensure equal representation in the decision-making process for the institution's undergraduate students.

Compiling a definitive undergraduate core list that would be appropriate for all colleges and universities offering undergraduate education is a difficult task. Differences in course offerings, local conditions, costs, and the desire to avoid obtrusive methods for surveying users are often cited as the most difficult problems to overcome. A methodology that takes into account the relevant criteria for developing core lists **and** can be customized for individual libraries would be like finding the "holy grail" referred to by some authors on this topic.<sup>3</sup> The following methodology is one that not only takes these criteria into account but also is not labor intensive or obtrusive to users.

In response to a proposed serials cancellation project at the library where they formerly worked, the authors began to research the viability of developing an undergraduate core list that could be spared from cancellation without regard to subject specificity. The project was, in part, an effort to cancel subscriptions to expensive, low-use research journals and provide articles from them on-demand to faculty and graduate students through a document delivery provider. Undergraduates would not be eligible for free document delivery services, thus making it crucial that they were insured on-site access, via print, microfilm, the web, etc., to an appropriate universe of core journals.

The first question was how to define this universe of core journals. Options included using core lists from accrediting agencies, combining multiple subject specific core lists, surveying the faculty and/or students, comparing the library's journal holdings to other institutions, analyzing bibliographies from student papers, using citation indexes, analyzing citations students pulled from Searchbank and other full-text databases, using focus groups, analyzing journals listed in the library reports prepared for new undergraduate courses, and conducting use studies. The coverage of specific titles in full-text aggregator databases and in indexing products and their inclusion in standard reference sources were also considered as possible selection criteria. Due to the limited time available before cancellation decisions had to be made, it was clear that only a few criteria could be used, that data would have to be readily obtainable, and that it would have to be as objective as possible to stave off possible charges of favoritism toward particular constituencies. A literature review assessed the state of research on the

subject of core journal lists for undergraduate collections and helped determine the most useful criteria to use.

### **Literature Review**

The concept of a core list of undergraduate periodicals has escaped most scholarly inquiry to date. Most core list literature in the recent past has attempted to define core journal collections for specialized disciplines, user populations, and institution types.<sup>4</sup> Almost all studies have used ISI Impact factors and citation analysis, two techniques that are not relevant for undergraduate students. Aside from two studies, general undergraduate collections have largely been ignored.

Rea reported on Eastern Washington University (EWU) Libraries' strategy for providing a journal collection appropriate for undergraduates. The EWU Libraries defined a core collection by linking journal holdings to a set of nine core indexes (Applied Science & Technology Index, Art Index, Biological & Agricultural Index, Business Periodicals Index, Education Index, General Science Index, Humanities Index, Readers' Guide Abstracts, and Social Science Index). Budget considerations dictated that the EWU Libraries set a target of subscribing to only 60% of the journal titles included in the core indexes. Despite this fairly low correspondence between the total number of titles included in the indexes and those on the core list, Rea did not detail the criteria used to determine which titles would be on the core list. EWU Libraries planned to highlight the core indexes during library instruction sessions and to de-emphasize other subscription databases such as ArticlesFirst that did not have as good a match with its journal holdings, even though experience indicated that students were finding relevant citations in the latter databases.<sup>5</sup>

Joswick & Stierman studied the sources cited in freshmen composition term papers at Western Illinois University. They discovered that students found much of their journal literature through just one index, InfoTrac's Expanded Academic Index. Joswick & Stierman suggest that using popular indexes as tools for journal selection will build collections that will satisfy the needs of most undergraduate researchers.

At the time of Joswick & Stierman's study, WIU subscribed to the CD-ROM index-only version of Expanded Academic Index. By the time their results were published in 1997, numerous general-interest

full text databases aimed at the undergraduate market were available. Despite their belief that a core journal collection could be based on titles included in popular indexes (and by inference, on the full text databases that later appeared on the market), Joswick & Stierman noted that undergraduate students place self-imposed limitations on their research when they choose resources based on convenience. They admonished collection managers "to proceed with caution when contemplating the acquisition of general-interest full-text databases."<sup>6</sup>

In light of this pattern of journal use by undergraduates (choosing convenience over quality), decisions for journal addition and retention by collection developers impact undergraduate collections more heavily than research collections where users typically exhaust all avenues to acquire relevant journal literature. Other researchers have also noted the important role convenience plays in determining students' use of specific resources. Adele F. Bane concluded that "content clearly becomes secondary to convenience" when students have electronic access to complete articles.<sup>7</sup> Recently, Carol Tenopir asked academic librarians to rate the importance of a number of factors on database use. The most important factor was the availability of full text. This was particularly true for undergraduate students. Convenience, in terms of being able to access the database via remote login, at sufficient numbers of workstations in the library, and at the desired times, also ranked very high.<sup>8</sup>

The literature review reiterated the need for collection developers to balance convenience, quality, depth of coverage, format, availability, and other factors in selecting new materials, evaluating collections, and making recommendations for new subscriptions. It also supported the need for research concerning the usefulness and practicality of a multiple criteria approach to identifying a core undergraduate collection, an approach that would not be tied to one product or vendor.

## **Methodology**

### ***Multiple Criteria Methodology***

The authors decided to use a combination of three selection criteria to identify a core list of journals. This method would limit the effect that any one criterion could have on the outcome and, it was hoped, result in a list that was free of bias and could be viewed as non-subject-specific,

interdisciplinary, and useful for a general audience, i.e. meeting the specifications that define an undergraduate periodical.

### ***Criteria considerations***

The first criterion selected was inclusion of the title in an "expert" list used for collection evaluation. The list used needed to be a source that would be present in most library reference collections, easy to understand, and a simple source from which to compile data. The authors identified Magazines for Libraries by Bill Katz as the most comprehensive, authoritative title available. This title is used as a selection tool in over 6,000 libraries.<sup>9</sup> It is recognized as "the source for magazine information" and is considered unique as a national evaluation guide.<sup>10</sup>

Various editions of this book have been used by many authors as a source for identifying core journal titles for specific subject areas.<sup>11</sup> Its authority is based in part on its use of more than 150 subject experts who choose titles for inclusion for their area of expertise. This subject arrangement is an important feature for customizing a core journal list to fit a specific institution, as it allows the librarian to exclude those subjects not taught at the institution. Each subject section includes a "Basic Periodicals" list, which contains the periodicals that the editor and contributors think are absolutely essential for a basic collection. This list also includes an indication of the audience or type of library for which a publication is suited. The two designations of interest for this project are "General Adult" and "Academic." The "General Adult" designation denotes titles suitable for public libraries and college and university library reading rooms. Publications designated "Academic" are appropriate for junior colleges, colleges, and universities.<sup>12</sup>

The authors reviewed each of the 156 subject sections within Magazines for Libraries and excluded those that were not relevant to the university's curriculum or otherwise encompassed by the library's mission. They then created a Microsoft Access database composed of periodical titles, ISSN's, and a code that indicated whether the title was listed as appropriate for an academic or a general adult audience. With a few exceptions based on the university's curriculum, only titles from the "Basic Periodicals" list were included. Individual titles in the database were then reviewed for relevance. Approximately fifty titles were deleted during this review. Examples of titles deleted include *ClueLass*

*HomePage*, *Ocean Science News*, and *American Sex Scene: Guide to Bordellos*. At the end of the review, 1155 titles had been identified. The authors' library had active subscriptions to 632 (55%) of these titles.

The second criterion established was coverage in full-text aggregator databases. Most universities subscribe to one or more journal aggregation databases. Often, these are the resources undergraduates use most heavily. Not only do they provide the convenience of offering items in full-text, but also are multi-disciplinary in nature, a benefit for the one-stop shopping attitude many students have toward research. Because aggregators actively target the undergraduate student population as a primary market for their products, the periodicals included within the databases are selected with this audience in mind. Some aggregators use well-known academic indices as a starting point for identifying relevant periodicals for inclusion in their databases. To the extent that aggregators are successful in building a product that is attractive to undergraduates in varying disciplines and satisfies the requirements and limitations faculty place on research sources, they are, in effect, creating components of a core undergraduate journal collection. However, the databases often include trade publications and other periodicals not essential to an undergraduate collection. Moreover, none of the major aggregators offer full text for every item contained in the database; for some items, only citation and indexing/abstracting information is available. As a result, undergraduates' reliance on these resources can often lead to disappointment when they are not able to find the desired periodical in their local library. Adding selected periodical titles that are indexed and/or abstracted in the institution's full-text aggregator databases and otherwise meet the criteria for inclusion in an undergraduate core journal collection will reduce user frustration and better integrate the institution's print and electronic resources. Deciding which of these titles belonged in a core collection thus became critical. To aid in making this determination, the authors decided to look at the combined source lists for four popular full text aggregator databases and to examine the overlap. The databases chosen were Wilson OmniFile Full Text Mega (<http://www.hwwilson.com/databases/omnifile.htm>), IAC Expanded Academic ASAP (<http://library.iacnet.com/html/eai.html>) (now part of the Gale Group), Ebsco Academic Search Elite (<http://www.epnet.com/database.html#af>), and Bell and Howell's Proquest Periodical Abstracts Research

I (<http://www.umi.com/cgi-bin/TitleForm?cfg=LibTitles.cf>). At the time the source lists were downloaded, the products had the following number of titles: Wilson, 2975; IAC, 1885; EBSCO 2937; and UMI, 1125. There were a total of 4467 unique ISSN's. The four databases had 816 titles in common. A review of these titles indicated that they were indeed appropriate for a core undergraduate collection, including periodicals like *Adolescence*, *Advertising Age*, *Anthropological Quarterly*, *Brookings Review*, *Columbia Journalism Review*, *Explicator*, *Journal of Leisure Research*, *Political Science Quarterly*, *PC World*, *Science*, *Social Theory and Practice*, *Time*, *Twentieth Century Literature*, and *Vital Speeches of the Day*. An additional 502 periodicals were included in three of the databases, while 1007 titles were covered in two of the databases and 2142 were in only one. The authors' library had current subscriptions to only 2021 (45%) of the 4467 titles contained in any of the four databases. It had much more comprehensive coverage of the titles that were common to all four of the aggregators (95%). Coverage fell to 66% of the titles common to three aggregators; 45% of the titles common to two; and 21% of the titles that were unique to a single aggregator database. The authors decided to include the titles that were contained in either three or four of the aggregator databases in the core journal list, a total of 1318 titles. A review of this list indicated that some periodicals were included under their current name, as well as under a previous name. Removing the entries for the older periodical titles reduced the total number of titles to 1290.

Most aggregator databases seem to be comparatively weak in their coverage of mathematics and science. This may be due to a combination of factors, including the high price of these journals, the specificity of the subject matter, and the reluctance of publishers in these disciplines to sign agreements with the producers of aggregator databases. Whatever the cause, the underrepresentation of these disciplines in aggregator databases is one reason why a multiple criteria approach is important. From a broader perspective, using a multiple criteria approach can help correct for other limitations of aggregator databases, including their emphasis on English-language publications, inability to negotiate contracts with certain publishers, loss of content caused by publishers who sign exclusive contracts with one online content provider, etc.



A comparison of the titles identified in Magazines for Libraries and the aggregator databases illustrates this. Only 715 (62%) of the 1155 titles we identified from Magazines for Libraries were included in at least one of the four aggregator databases. Three hundred twenty-one were in all four, while 150 were contained in three. Examples of titles that were in Magazines for Libraries, but not in any of the aggregator databases include *Accounts of Chemical Research*, *Advances in Applied Probability*, *Applied Physics Letters*, *Optics & Photonics News*, and *UMAP Journal: the Journal of Undergraduate Mathematics and Its Applications*. If we define as "core" all the titles identified from Magazines for Libraries, plus the titles included in either three or four of the aggregators, we have a total of 1977 titles, not an unreasonable number for a core undergraduate collection.

The third criterion we decided to use was inclusion of the title in the Journal Access Core Collection (JACC) developed by the California State University (CSU) system. The primary criterion for inclusion in JACC is support of the common CSU curriculum. The CSU common curriculum consists of baccalaureate programs in the social sciences, arts and humanities, life and physical sciences, as well as professional programs in education, business, engineering, computer science, and nursing. The core collection is that part of the collection that is program-driven, used actively for instruction, and in high demand. To qualify for JACC, at least fifteen campuses in the CSU system must subscribe, or be willing to subscribe, to the resource. Four hundred thirty-three titles qualified for JACC.<sup>13</sup>

The CSU common curriculum matched well with the curriculum at our former institution. Thus, we felt that it was fair to compare the JACC titles to the list of basic periodical titles we compiled from Magazines for Libraries. While this list did not include every title listed as basic for academic and general libraries, it did include all basic titles that we identified as matching the institution's curriculum. Only 171 titles on the JACC list were on our Magazines for Libraries list. However, all but sixteen of the titles were in at least one of the aggregator databases we examined. Journals published by the American Mathematical Society accounted for eight of the excluded titles. The Society for Industrial and Applied Mathematics published four of the excluded titles, while Blackwell/Blackwell Science published three. Two hundred thirty-four (54%) of the 433 titles in the JACC were in all four of the aggregator databases; 88 (20%) were in three. The JACC list contained 89 titles that were neither on the Magazines for

Libraries list nor in at least three of the aggregators. Adding all the unique JACC titles to our core undergraduate journal list increased it to 2066. These titles can be reviewed at: (URL: <http://library.caltech.edu/john/ug.htm>).<sup>14</sup>

The compilation of this list is the final step of our now-theoretical project. If we were still at our former institution, our next step would include a review of the titles to determine on an individual basis their applicability and value to the undergraduate curriculum, identification of titles to which we wished to subscribe and the desired format. We might also analyze our existing collection by department or discipline and attempt to identify areas that were not being adequately served. Certainly, the final list would be used in future cancellation projects to safeguard the interests of our undergraduate students and ensure that they would have immediate access to journals necessary for their studies.

We acknowledge that our analysis is merely a starting point for the identification of a core undergraduate journal list. For example, the final list would have been different had we followed the same methodology, but used different, and perhaps equally appropriate, aggregator databases (i.e. Ebsco's new Academic Search Premier, rather than Academic Search Elite; Bell & Howell's PA Research II instead of PA Research I, etc.), or had we used combinations of databases from specific vendors. Nevertheless, we hope that our results will be useful to other librarians as they analyze and evaluate their print and electronic serials collections and compare full-text aggregator databases. We also hope that our study will challenge others to tackle the problem of defining core undergraduate journal collections.

ENDNOTES:

1. For a good review of the history of core list development, please see: Larry Hardesty and Collette Mak, "Searching for the Holy Grail: A Core Collection for Undergraduate Libraries," *Journal of Academic Librarianship*, 19, no. 6 (Jan. 1994): 362-71.
2. Dave Bogart, ed., *The Bowker Annual Library and Book Trade Information*, 44<sup>th</sup> ed. (New Providence, N.J.: R.R. Bowker, 1999), 370.
3. Hardesty and Mak, "Searching for the Holy Grail," 370.
4. Louise S. Zipp, "Core Serial Titles in an Interdisciplinary Field: The Case of Environmental Geology," *Library Resources & Technical Services* 43, no. 1 (Jan. 1999): 28-36; Jeffrey D. Kushkowski, Kristin H. Gerhard, and Cynthia Dobson, "A Method for Building Core Journal Lists in Interdisciplinary Subject Areas," *Journal of Documentation* 54, no. 4 (Sept. 1998): 477-88; Elaine E. Teague, "The Development of a Core Journal List in the Computer Science Discipline" (master's thesis, University of North Carolina at Chapel Hill, 1996); Barbara M. Slater and Mark A. Slater, "Determining Core Journals in Behavioral Medicine," *Bulletin of the Medical Library Association* 82 (Jan. 1994): 70-2; Thura R. Mack, "A Model Methodology for Selecting Women's Studies Core Journals," *Library & Information Science Research* 13 (Apr./June 1991): 131-45; Katherine W. McCain, "Core Journal Networks and Cocitation Maps: New Bibliometric Tools for Serials Research and Management," *The Library Quarterly* 61 (July 1991): 311-36.
5. Jay Weston Rea, "A Core Collection Strategy for Protecting Undergraduate Education at a Comprehensive University," *Journal of Academic Librarianship* 24, no. 2 (Mar. 1998): 145-50.
6. Kathleen E. Joswick and Jeanne K. Stierman, "The Core List Mirage: A Comparison of the Journals Frequently Consulted by Faculty and Students," *College & Research Libraries* 58, no. 1 (Jan. 1997): 48-55.
7. Adele F. Bane, "Business Periodicals Ondisc: How Full-Text Availability Affects the Library," *Computers in Libraries* 15 (May 1995): 54-6.
8. Carol Tenopir, "Online Databases: Database Use in Academic Libraries," *Library Journal* 124, no. 8 (May 1, 1999): 36-8

9. "How to Get Libraries to Carry Your Magazine," *Folio: The Magazine for Magazine Management* 23, no. 19 (1995): 168-69.
10. Mary Jane Vakili, review of *Magazines for Libraries*, by Bill Katz, *The Serials Librarian* 24:1 (1993): 109-11.
11. Virgil L.P. Blake, "The Perceived Prestige of Professional Journals, 1995: A Replication of the Kohl-Davis Study," *Education for Information* 14 (Oct. 1996): 157; Thomas L. Kilpatrick, "A Critical Look at the Availability of Gay and Lesbian Periodical Literature in Libraries and Standard Indexing Services," *Serials Review* 22, no. 4 (Winter 1996): 71-81; Linda A. Krikos, "Women's Studies Periodical Indexes: An In-Depth Comparison," *Serials Review* 20, no. 2 (Summer 1994): 65-78; Norma J. Bruce, "Veterinary Medicine and Animal Health Journals - The New, the Redesigned, and the Retitled," *Serials Review* 16, no. 3 (Fall 1990): 39-46.
12. William A. Katz and Linda Sternberg Katz, *Magazines for Libraries*, 9th ed. (New Providence, N.J.: R. R. Bowker) p.xiv
13. A list of the titles is available at <http://www.csuchico.edu/lacq/JACC05242000.pdf>.
14. This website also contains charts listing the titles that met all three criteria used to define the undergraduate core journal collection, titles that satisfied two of the criteria, and titles that met one of the criterion.