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Jeff Bailey and Linda Creibaum, "Developing a Weighted Collection Development Allocation Formula" (2015). *Proceedings of the Charleston Library Conference*.
<http://dx.doi.org/10.5703/1288284316301>

Developing a Weighted Collection Development Allocation Formula

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Abstract

In this preconference workshop Bailey and Creibaum gave attendees detailed instruction on how to create a spreadsheet-based library collection development allocation formula, one option to manage a library's collection development budget. The presenters demonstrated and led participants through the process of creating customizable Excel-based formulas that can be modified to utilize the criteria relevant to a specific library and institution. The primary element in the success of such a formula is the use of weights applied to each factor contained in the spreadsheet. Potential factors include the number of students majoring in a degree program, total faculty per department, departmental credit hour production, the number of courses offered, and the average costs of books and journals in a discipline. By carefully assigning weights to each factor, the output of the formula results in an equitable allocation of funds to each subject area.

Introduction

Jeff Bailey and Linda Creibaum began by briefly relaying the history, development, and use of a spreadsheet-based allocation formula at the main campus of Arkansas State University. This was followed by a short discussion of how the basic formula may be individualized in a variety of library settings and types.

Attendees were introduced to the skills and resources necessary to enable each to build an allocation formula to help optimize the distribution of their library's financial resources. Discussion included the methods by which the formula can be modified as conditions warrant and as campus circumstances change.

Throughout the workshop the presenters stressed the importance of maintaining comprehensive documentation for every decision and procedure in order to ensure the consistent use of data from one year to the next.

Developing a Library Allocation Formula

Background

In 1997 Arkansas State University's Dean B. Ellis Library used no formula of any kind to provide balanced allocations to the various academic departments for selection of library materials.

Collection development budgets had been flat for several years and departmental allocations had grown unbalanced to the point that one department accounted for almost 20% of all library collection expenditures. Funds had not been reallocated or redistributed in many years, and allocations had grown only through inflation. This situation had been allowed to continue for several years and as a result the library had no means to purchase materials in support of new programs, or even to correct the balance or compensate for the inflationary increases in then-current subscription prices.

New library leadership organized a task force that started the process of looking for a more equitable way to allocate funds and manage financial resources. Librarians searched professional literature for methods of making library fund allocations, including the use of a formula, and ultimately decided to develop a formula for the Arkansas State University Library that was based on one used in the 1970s by Colorado State University and described in SPEC Kit #36.

Gathering Data

Before selecting formula factors, it is necessary to gather the relevant data needed to make informed decisions. The presenters led a brainstorming session in which workshop

participants suggested possible factors for inclusion in an allocation formula. Suggestions included:

- Cost of materials
- Circulation of materials by subject area
- Number of students in each major
- Number of majors
- Number of faculty (FTE or head count?)
- Credit hours per discipline
- Prices of books and journals
- Degree levels
- Use of online resources by student majors
- Graduation numbers
- Research income
- Number of campuses
- Preexisting budgeting model
- Longitudinal data over time—change in time periods
- Influential or powerful professors
- Administration’s “flavor of the day”
- Publications in disciplines
- Selector behavior—participation
- New programs
- Unique collections
- Consortial purchasing patterns
- Mandate to support nonacademic community
- Faculty assignments/requirements
- Number of BI sessions given
- Remediation—collection needs
- Endowment or donation levels in some disciplines (cash)
- Space concerns
- Electronica
- Gifts (in-kind)

- Ill requests
- Accreditation requirements
- Unbalanced collection
- Freely available resources

Bailey and Creibaum then led an exercise in evaluating and refining the list of suggestions from the brainstorming session to arrive at a list of the most viable factors for an individual campus. It was noted that some factors might be viable at one institution but not at another, and that some brainstorming suggestions might not be appropriate to the formula at all. Duplicates, such as “cost of materials” and “prices of books and journals,” were consolidated and suggestions that were not viable for a formula, such as the presence of influential faculty, were eliminated. Workshop participants were reminded that some data may be obtainable at some institutions but not at others. When it is time to begin creating a formula, it is important to gather samples of available data.

Factor Selection

Factor selection for a library’s formula should be finalized only after each possibility is carefully considered for completeness of data and relevance to the institution’s collection development goals. Presenters emphasized that documentation should be retained for all factors considered for inclusion in the formula, including the specific reason(s) for those not selected. There is a strong possibility that at least some of this information will be needed in the future when considering changes to the formula.

Participants were advised to not get personally attached to the use of any particular factor, as that factor may need to be dropped or modified in the future. To illustrate this point the presenters discussed a modification they made to their library’s allocation formula five years ago due to a new area of emphasis on their campus. However, they were forced to remove that factor from the formula in 2015 because they were no longer able to obtain data for that factor, and because it had decreased in relevance in the intervening years.

Weights

Weighting is the assigning of values to indicate the importance or impact of each factor in the formula relative to the other factors. In making an allocation formula there are several considerations to keep in mind when determining the weights. These considerations are particular to each individual institution, and may include input from a library committee, faculty senate, advisory group, or other constituencies.

A library may choose to subdivide factors before assigning weights. An example of this would be subdividing degrees awarded into undergraduate and graduate and assigning a different weighting factor to each. Attendees were advised to do several test runs, as minor changes in weights or factors can sometimes yield unexpected (and unbalanced) results! When developing a formula one should be prepared to make changes throughout the process until planners have agreed upon the final version of the formula and have made the first allocations.

During this time discussion arose regarding the level to which allocations had become outdated or inequitable at some institutions, and how difficult it may be in those libraries to restore balance and equity to their subject allotments. The presenters agreed that drastically changing allocations can be very difficult but they had been successful in doing so on their campus.

Options

Formulas may be utilized to allocate funds separately for print books, e-books, journals, online resources, or any other budgets a library may have, or as a pool for a combination of multiple formulas. Some librarians have indicated they have had difficulty moving funds from one formula to another when more than one is used; for example, moving funds from a print journals fund into an online journals fund managed with a separate formula. Libraries may choose to allocate all of their available funds or keep a percentage or flat amount back for in-house use in accordance with local campus culture and practices. The Arkansas State University Library retains a sizable portion of their funding and uses it to pay for comprehensive resources, backfile purchases, and

start-up funds for new degrees. The presenters recommended that other libraries use the same approach.

There are sometimes valid reasons for libraries to make adjustments to individual formula-indicated amounts, including not wanting to reduce any department's existing allocation, choosing to reduce or not increase a funded amount because a department has a history of not spending a satisfactory portion of previous allocations, or adding an amount to help fund the start-up costs of a new program. Additionally, there might be special entities or major campus initiatives that might indicate a department or program should be funded at a level higher than the amount indicated by the formula.

Running the Formula

Attendees were then led through an interactive demonstration of a scaled-down version of the actual allocation formula used at Arkansas State University. During this part of the workshop, Bailey and Creibaum explained various aspects of the formula, demonstrated the relationship of the weights for each factor to the final output, and showed how relatively small changes to weights can make significant changes to departmental funding outcomes. This was accomplished by selectively changing data in the formula and engaging attendees in a discussion of how each change affected the output differently because of the weight assigned to a given factor.

Following this demonstration the attendees were each given online access to the session's PowerPoint presentation and a link to a basic working copy of the formula that was identical to the one that had been used for demonstration purposes during the session.

Closing Comments

Bailey and Creibaum closed by restating that if a library makes the decision to develop and use a collection development allocation formula, it is vitally important to thoroughly document the entire process. This includes documenting why factors were and were not used and how the formula data was gathered. This information will

almost certainly be needed for future runs of the formula, whether a library is rerunning an unchanged formula with updated information or has decided to modify the factors or the assigned weights.

While changes to a formula should be kept to a minimum for the sake of consistency, it is important to think of the formula as a living document that will need to be modified from time to time as circumstances change at a library and/or institution.

References

Association of Research Libraries (ARL). (1977). The allocation of materials funds in academic libraries. SPEC Kit 36. Washington, DC: Association of Research Libraries.