

Financing Academic Libraries: Making the Transition from Enrollment Growth to Quality Enhancement

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Recent studies addressing virtually every aspect of the quality of higher education have raised expectations for improving colleges and universities. Translating expectations into actions requires resources, and providing adequate funds for maintaining and improving the quality of academic libraries will require changes in the structure and use of funding formulas. Many library formulas are enrollment driven, making library funding vulnerable to stable or declining enrollment. Some states have used cost studies and ACRL library standards to design formulas that rely less on enrollment. Redesigning funding methods to recognize fixed costs changes the underlying premise from one that funds should flow from enrollment growth to one linking funding with programmatic changes. The next challenge is to add factors that reward successful management and enhance the quality of libraries.



Recent studies addressing virtually every component of a college education have raised expectations for improving the quality of higher education. Translating expectations into action requires resources, and providing adequate funds for maintaining and improving the quality of academic libraries will require changes in the structure and use of funding formulas. Most formulas currently used by state-level coordinating and governing boards to calculate library funding requirements are enrollment driven. Those formulas were developed fifteen to twenty years ago in response to expectations of rapid enrollment growth, and as long as enrollment increased, more funds were recommended for libraries. Projections of stable or declining enrollments and the focus on quality bring into question the assumption that enrollment

should be the primary determinant of library funding. Whether academic libraries will have the resources to respond to expectations for higher quality will depend in large part on redesigning funding formulas.

Approximately half of the state coordinating or governing boards use a formula approach to developing appropriation recommendations presented to governors and state legislatures.¹ Although formulas are also used by some university systems in allocating funds among constituent campuses, this paper examines state-level formulas, which are used in developing requests to governors and legislatures for state funding. While state formulas do not govern campus-level budget allocations to libraries, they can exert a strong influence as an expression of state priorities. Furthermore, the structure and logic of formulas can affect how state decision

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makers perceive the funding needs of colleges and universities. Clearly, university administrators, including library directors, have an important stake in understanding and influencing funding formulas.

Although one frequently hears of "the formula," a formula budgeting process consists of several different formulas. To the casual observer these funding formulas appear to be objective, quantitative methods of predicting the funds necessary for operating costs of colleges and universities. Actually, formulas express policy judgments about the mission, quality, governance, and organization of higher education.² The twin policy questions examined in this paper are What alternative approaches can be used to replace enrollment as the dominant formula variable? and How can formulas be redesigned to reward quality improvements in libraries?

ENROLLMENT-DRIVEN FORMULAS

Although concern is being expressed about the strong relationship between enrollment and funding, which is built into virtually all formulas, change is occurring slowly. A 1982 survey found that thirty-one state higher education finance officers perceived a breaking down in the relationship between enrollment and state funding.³ However, two years later the NIE Study Group on Conditions of Excellence concluded that approximately 75 percent of the education and general revenues in all public institutions were still dependent on enrollments.⁴

A survey of library formulas used for fiscal year 1985-86 conducted in preparation of this paper found that the enrollment/funding relationship is still built into many library formulas in one of two ways. Library funding is calculated either using a cost rate per student or as a percentage of funding calculated for instruction. The library formula used by the Alabama Commission on Higher Education is an example of the cost rate per-student method. Developed in 1973 and modeled after the Texas formula, student semester credit hours are multiplied by the following cost factors:

Undergraduate	\$ 5.46
Grad. I (Master's)	\$10.97
Grad. II (Doctoral)	\$46.97
Law	\$28.98

An example of the second method is the South Carolina Commission on Higher Education's formula, which calculates library funding as 10 percent of instructional costs. Since instructional formulas are driven by enrollment, library funding is vulnerable to enrollment declines in both methods. Table 1 classifies several states according to the type of enrollment-driven library formula used for fiscal year 1985-86. Formula states that have moved away from enrollment as the dominant variable are not shown in table 1 and are discussed in a later section on redesigning formulas.

TABLE 1
CLASSIFICATION OF
LIBRARY FORMULA METHODS

Rate per Student	Percentage of Instruction
Alabama	Louisiana
Connecticut	South Carolina
Tennessee	Georgia
Missouri	West Virginia
Ohio	Mississippi
Kentucky	
Texas	

During the 1960s and early 1970s, when most formulas were developed, libraries benefited from the assumption that operating costs varied according to enrollment. The assumption incorporated into Alabama's formula, and others like it, is that the cost of providing library services to each additional student is the same for an institution with two thousand students and one with twenty thousand students. In addition, the underlying assumptions are that library costs increase or decrease proportionately to increases or decreases in enrollment, and, at the margin, the cost of serving one more or one less student is equal to the average cost of delivering library services to all students. Table 2 shows the results of simulating the impact of a 5 percent enrollment decline for a doctoral institution having a total enrollment of fifteen thousand full-time students. Variations in total funding recommenda-

TABLE 2
SIMULATION OF 5 PERCENT ENROLLMENT
REDUCTION ON LIBRARY FORMULAS

State	15,000 Enrollment	Avg. Funds per Student	5 Percent Enrollment Decline	Funds Loss per Student
Alabama	\$3,028,134	\$202	(\$151,408)	\$202
Connecticut	\$3,615,802	\$241	(\$181,050)	\$241
Texas	\$2,947,701	\$196	(\$147,385)	\$196
Kentucky	\$4,288,427	\$286	(\$205,883)	\$275
Arkansas	\$3,333,873	\$222	(\$103,500)	\$138

tions (column 1) illustrate the diversity of assumptions and costing methods used in developing cost rates. Another important difference is the marginal impact (column 4) on funding of a decline in enrollment. Comparing the average library funding provided per student (column 2) for fifteen thousand students with the reduction in funding per student shows that some states (Kentucky and Arkansas) have developed formulas which moderate the impact of enrollment declines on funding calculations.

While some reduction in overall institutional funding may be appropriate if a declining enrollment trend is occurring, unintentional and severe consequences occur to libraries when a formula subtracts the average cost per student when a substantial portion of library costs are fixed or are not influenced by enrollment changes. Case studies of budget reallocations or reductions found that while support areas are often first targets for reductions, a short-term solution to funding reductions often becomes a long-term problem.⁵ Reductions in a library's collection, hours of operations, and range of services have an adverse ripple effect on instruction, research, and an institution's ability to attract and retain faculty and students. Changing library formulas to more accurately reflect cost behavior is one of several approaches for redesigning formulas.

REDESIGNING LIBRARY FORMULAS

Studies of the major influences on library costs have found a substantial portion of library costs to be fixed or influenced by factors other than enrollment. Any producer of goods and service, whether public or private, incurs certain

fixed costs regardless of size. Enrollment is just one of several variables reflected in standards developed by the Association of College and Research Libraries (ACRL). The formula for calculating the number of volumes is influenced much more by the number and type of academic offerings than by enrollment. It takes a change of four hundred full-time students to have the same impact as adding a single master's field (when no higher degree is offered).⁶ Consequently, funding formulas utilizing ACRL standards as a basis for calculating cost would be less sensitive to enrollment declines.

Fixed costs associated with many academic functions are extremely hard to quantify, but ACRL standards can provide a basis for redesigning funding formulas to reflect fixed costs. In 1979 the University of Wisconsin System initiated a study of fixed and variable costs because of a concern that the state funding formula did not adequately reflect actual cost behavior.⁷ One purpose was to better understand the resources required for academic libraries if they were to continue providing adequate support during a period of declining enrollment. The Wisconsin study found that fixed costs represented 67.1 percent of total library costs for four nondoctoral institutions.

ACRL standards provide the basis of a "core funding" formula developed in 1982 by the Arkansas Department of Higher Education. A fixed amount of funding is recommended for a core library program supporting existing academic programs and a base enrollment level. Fixed core amounts vary for four types of institutions and base enrollment levels as shown in table 3. The average funds per student in the core program ranges from a

TABLE 3
ARKANSAS CORE FUNDING FORMULA, 1985-86

Institutional Group	Enrollment Base	Fixed Cost Base	Marginal Rate per Student Above Base
Doctoral	10,000	\$2,643,873	\$138
Master's	5,000	\$1,141,414	\$138
Other Four-year	2,000	\$ 468,636	\$138
Two-year	500	\$105,627	\$138

high of \$264 for doctoral to a low of \$211 for two-year, considerably higher than the marginal rate of \$138. The lower marginal rate is derived from ACRL standards allowing fifteen volumes per FTE student.

Other states have also successfully incorporated the use of ACRL or other appropriate standard into library formulas. A special task force revised the library formula used by the Maryland State Board for Higher Education. Changes came in response to concerns of university librarians that funding guidelines based solely on enrollment were too simplistic and unrepresentative of the scope and nature of library services. The revised library guideline consists of five parts: a fixed cost component, a component for normal book purchases based on 5 percent of the American Library Association standards for each library, a component to reflect faculty needs, a component for research needs, and a component for enrollment.⁸ The Virginia Council of Higher Education has added a basic staffing requirement regardless of enrollment with the use of Association of Research Libraries or other appropriate standard in calculating expenditure requirements for maintenance of current collections.⁹ The revisions made by these states rest on the assumption that a library must support a relatively fixed array of academic courses, mix of faculty, and research programs.

Redesigning funding methods to recognize fixed costs changes the underlying premise from one that funding should flow from enrollment growth to one linking funding with programmatic decisions. If significant enrollment decline is forecast or is occurring, decisions to cut back library funding should result from a review of the scope of academic programs and desired library services. For example, cancellation

of health care periodical subscriptions should come from a decision to phase out a graduate program in public health rather than from a forced reduction caused by an enrollment-driven formula.

Incorporating into funding formulas an analysis of library volumes required by ACRL or other appropriate standard draws attention to the gap between existing and required volumes. Several states have recommended funding, in addition to formula amounts, to allow institutions to progress toward meeting library standards. During the last three biennia \$6.4 million has been appropriated from capital improvement funds to Arkansas colleges and universities to address arrearages in library collections. Capital funding has been in addition to regular state operating funds. Funding for each institution was recommended to either close the gap between existing volumes and ACRL standards by 10 percent or add 2 percent to total volumes required by ACRL standards, whichever was greater.¹⁰ The North Dakota State Board of Higher Education approved a task force plan to attain, over the next three biennia, library collections and services comparable with other academic libraries in the region.¹¹ A total of \$317,155 was recommended for the 1985-87 biennium. A final example of over-formula funding is contained in the Virginia formula described earlier. Institutions showing a major deficiency in library holdings may request additional funds for reducing the deficiency.

State action to address library deficiencies is certainly laudable, but is it sufficient? What if institutions choose not to spend additional funds for library volumes? Extra funds to reduce deficiencies could supplant funds normally budgeted for collection replacement without in-

creasing the total library budget. If additional funds are provided in proportion to the deficiency, what incentive or reward is provided for institutions which have struggled to improve library collections? Why should institutions that starve library budgets be rewarded with larger funding recommendations? An important task in redesigning formulas is to encourage effective library management and planning by rewarding performance. However, efforts to redesign library formulas have not responded to the challenge of creating formulas which reward successful results.

THE NEXT CHALLENGE— ENHANCING QUALITY

Many of those responsible for making state funding decisions are seeking ways to link quality with funding. Funding formulas that strive to treat similar institutions alike can have a "leveling" effect on institutional quality.¹² For example, using a statewide average cost rate for a group of similar libraries benefits the ones below average and inadequately supports more diverse or specialized libraries. None of the library formulas reviewed for this paper attempt to hinge a portion of funding to excellence in the delivery of library services. Some formulas may even retard improvements by yielding larger funding recommendations for those libraries with the weakest collections compared with ACRL standards. If an institution embarks on a program to improve its library collection and services by raising private funds, by budget reallocations, or other strategy, the institution assumes all the risk and anxieties. The addition of selective funding incentives could encourage institutions to take risks that could enhance quality.

Every formula has a reward or incentive system, and since 1979, Tennessee has been experimenting with performance-related funding. The Tennessee policy al-

lows an institution to earn an additional amount, up to 2 percent of its budget, determined by performance on five variables.¹³ The variables assess overall performance such as the number of programs accredited or the performance of graduates on tests in their major fields. A recent study by the Education Commission of the States found that innovations various states have undertaken in the last several years encourage quality improvement.¹⁴ The most common approaches provide special funds for quality improvement for specific programs or general areas, deemphasize enrollment as a basis for appropriations, and provide special endowments or matching grants to attract top faculty.

Much of this paper discusses redesigning formulas to deemphasize enrollment as the driving force for funding. Going beyond that step to innovations which enhance quality is desirable, but not without problems. Where quality determines a portion of funding, there will be winners and losers. Were a portion of funding linked to attainment of ACRL standards, tremendous pressure probably would mount to dilute the standards so more institutions could qualify. Developing new measures of performance could be costly and might result in giving attention to the most easily measured efforts rather than the most important aspects of library services. It might be that after a few years of trying, states will abandon efforts to design funding strategies which enhance quality. However, if states persist in their efforts, those library administrators willing to contribute to the process may be among the winners. Given the contributions that technological advances can make toward improved library services and the critical importance of libraries to an institution's instructional programs, funding innovations which address quality could very likely result in improved funding for library services.

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