Operating Costs of College and University Libraries

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THE COST OF OPERATING LIBRARIES of colleges and universities has been increasing for more than a quarter century. This fact is neither startling nor unique to libraries. Yet the increases have been of growing concern to librarians and to administrators of educational institutions. In 1933-34, total operating expenditures for libraries of institutions of higher learning in the United States were $13,387,000; 1 twenty-five years later the total had increased to $110,510,000,2 an eight-fold increase. During this period, the average cost per student to provide library service had increased from $15.31 in 1939-40, to $29.23 in 1951-52,3 and to an estimated $62.30 in 1957-58.4

These increases in costs of operation resulted from three factors: heavier enrollment, the changing nature of the students enrolled, and the inflation which characterized the entire period under study. Enrollment increased slowly before World War II, climbing from 1,150,000 in 1932 to 1,400,000 in 1941-42.5 During the war enrollments declined, but more than doubled immediately after its close, then settled back to about 2,300,000 when the veterans had passed through. Again, in the late 1950's, enrollments began to increase, so that in 1957-58 the total was 3,218,000.4

Along with the increase in enrollment has come a greater portion of students pursuing higher degrees. In 1942, for example, only 6 per cent were classified as graduate students; in 1958, 9 per cent were so classified. This change in composition may be presumed to affect not only the total cost of education but also the distribution of those costs.

Total expenditures for educational and general purposes of all institutions of higher learning rose from $369,661,000 in 1933-34 to $3,634,142,000 in 1957-58. Distribution of expenditures for selected educational purposes as reported in the Biennial Survey of Education is shown below:

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**TABLE I**

**Distribution of Expenditures of Degree Granting Institutions for Selected Educational Purposes in Selected Years 1933-1958**

<table>
<thead>
<tr>
<th>Year</th>
<th>Educational and General Per Cent</th>
<th>Resident Instruction Per Cent</th>
<th>Organized Research Per Cent</th>
<th>Libraries Per Cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1933-34</td>
<td>$369,661 100.0</td>
<td>$217,486 58.8</td>
<td>$17,063 4.6</td>
<td>$13,387 3.6</td>
</tr>
<tr>
<td>1939-40</td>
<td>$525,539 100.0</td>
<td>$281,667 53.6</td>
<td>$28,121 5.4</td>
<td>$19,575 3.1</td>
</tr>
<tr>
<td>1945-46</td>
<td>$820,326 100.0</td>
<td>$375,122 45.7</td>
<td>$86,812 10.8</td>
<td>$26,560 3.2</td>
</tr>
<tr>
<td>1951-52</td>
<td>$1,933,645 100.0</td>
<td>$827,737 42.8</td>
<td>$320,362 16.6</td>
<td>$60,948 3.2</td>
</tr>
<tr>
<td>1957-58</td>
<td>$3,634,142 100.0</td>
<td>$1,477,350 40.7</td>
<td>$733,857 20.2</td>
<td>$110,510 3.0</td>
</tr>
</tbody>
</table>

*Figures in thousands of dollars.*

These figures reveal the extent to which the nature of educational institutions is being changed by the increase in organized research, much of which is financed by the federal government. The presence of larger numbers of graduate students makes possible the staffing of research projects, while the availability of research assistantships further encourages graduate enrollment. Librarians have become increasingly concerned with the special service demands arising from large research projects and have undertaken better methods of calculating costs of such services. The costs for graduate instruction and research were found, in a number of institutions studied, to be considerably higher than for undergraduate instruction, in some cases up to five times as high.7

In the period 1933–1958, the percentage of expenditures for research increased four-fold, from 4.6 per cent to 20.2 per cent; that devoted to resident instruction declined markedly, from 58.8 per cent to 40.7 per cent. Yet the combined total of instruction and research declined from 63.4 per cent of the total to 60.9 per cent. The cost of library service, which can be assumed to relate most closely to these two activities, declined in percentage at a somewhat greater rate, from 3.6 per cent to 3.0 per cent of the total. Thus, it appears that the greatest increase in the costs of educational institutions was in the general area of administration, physical plant operation, exten-
sion services, and the like, rather than in the more narrowly defined educational activities.

The effects of inflation upon the cost of library operation have been varied and have resulted in a continuing redistribution of the cost factors as well as in greater total costs. The following table, compiled from data collected by the Library Services Branch of the U.S. Office of Education in the quinquennial surveys of libraries begun in 1939, shows the distribution of library operating expenditures by object:

**TABLE II**

*Distribution of Operating Expenditures by Object in Academic Libraries in Selected Years 1939–1957*

<table>
<thead>
<tr>
<th>Year</th>
<th>Total*</th>
<th>Staff Salaries*</th>
<th>Student Wages*</th>
<th>Personal Services (Per Cent)</th>
<th>Library Materials (Per Cent)</th>
<th>Other Expenses*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1939-40</td>
<td>$17,976</td>
<td>$9,384</td>
<td>$1,252</td>
<td>$6,531</td>
<td>36.3</td>
<td>$810</td>
</tr>
<tr>
<td>1946-47</td>
<td>34,622</td>
<td>17,887</td>
<td>3,051</td>
<td>12,076</td>
<td>34.9</td>
<td>1,596</td>
</tr>
<tr>
<td>1951-52</td>
<td>61,294</td>
<td>33,785</td>
<td>5,274</td>
<td>19,508</td>
<td>31.8</td>
<td>2,728</td>
</tr>
<tr>
<td>1956-57**</td>
<td>88,603</td>
<td>48,693</td>
<td>7,733</td>
<td>27,786</td>
<td>31.4</td>
<td>4,391</td>
</tr>
</tbody>
</table>

* In thousands of dollars.

** Because coverage in the 1956-57 survey was exceedingly poor, figures for that year have not been published. The figures quoted in this Table have been supplied by the U.S. Office of Education.

The totals in Table II above vary considerably from those in Table I because the above figures are derived from special studies and in general include fewer institutions.

The data reveal that there has been a continuing increase in the proportion of the library budget devoted to salaries and wages, increasing from 59.2 per cent in 1939–40 to 63.7 per cent in 1956–57. These increases have occurred in both staff salaries and student wages. Likewise, there has been a decrease in the proportion of the budget devoted to library materials, from 36.3 per cent in 1939–40 to 31.4 per cent in 1956–57. Miscellaneous expenses, including supplies, communications, equipment maintenance, etc., have remained quite constant, varying only from 4.5 per cent to 4.9 per cent without any definite trend.

If one considers only the two factors, personal services and library materials, he observes that the ratio of expenditures for library materials to those for personal services expressed as percentages has declined as follows:

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1939-40  61.4%
1946-47  57.7%
1951-52  49.9%
1956-57  49.2%

This shift in distribution may be attributed largely to the differential rates of inflation which have prevailed. The consumer price index increased by approximately 208 per cent from 1939 to 1958. Had this average rate applied equally to salaries and to books, there would probably have been little shift in the distribution of costs.

Although salaries throughout the economy have increased more rapidly than the costs of commodities, there has probably been a greater differential in libraries than in the economy as a whole because of the depressed salaries of librarians which obtained during and immediately following the depression. Over a period from 1939-1957, the average salary per full-time employee in libraries of colleges and universities is listed below:

<table>
<thead>
<tr>
<th>Year</th>
<th>Salary ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1939-40</td>
<td>1,308</td>
</tr>
<tr>
<td>1946-47</td>
<td>2,167</td>
</tr>
<tr>
<td>1951-52</td>
<td>3,013</td>
</tr>
<tr>
<td>1956-57</td>
<td>3,500</td>
</tr>
</tbody>
</table>

The increase is, therefore, 267 per cent over the period. Salary scales have increased, for professional staff at least, more than these averages would indicate: in 1939-40, 69.8 per cent of all full-time library staff were classified as professional; in 1956-57 the percentage had been reduced to 55.4.

Arrival at a precise composite index of book prices as it affects the total library budget is even more difficult than for an index of salaries. Too little is known of the proportionate expenditures for new books versus old, for books in one subject as compared with another, etc. A different approach, estimating the cost per volume of materials acquired, was undertaken. From data available on 100 selected libraries, the average expenditure per volume acquired was computed by dividing total book expenditures by the gross number of volumes added to the collection. Included in the volume count were all gifts and exchanges as well as purchases; included in the expenditure total were binding and subscriptions, as well as book purchases. The computations follow:

<table>
<thead>
<tr>
<th>Year</th>
<th>Cost ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1939-40</td>
<td>2.71</td>
</tr>
<tr>
<td>1945-46</td>
<td>2.79</td>
</tr>
</tbody>
</table>
The overall percentage increase in the unit cost of materials was 203 per cent, as compared with an increase of 267 per cent for salaries.

Under continued budgetary pressure, librarians have sought avenues for reduction of costs, either through elimination of services or through mechanization, often through a combination of both. The two areas most frequently approached are circulation procedures and cataloging.

Simplification of circulation procedures has taken various forms, including transaction number control systems with which the library sacrifices the ability to answer the question “Where is any specific book”; punched card call slips, which replace the older double charge system;\textsuperscript{11} or the Brooklyn College system, which is a combination of both with further use of machines.\textsuperscript{12} During the same period, and perhaps for the same reasons, there has been a shift to open stacks with customer self-service. In many cases the shift has been made for the avowed purpose of increasing the effectiveness of the library’s educational function, but the possibility of reducing costs was probably always considered.

Literature concerning open access to stacks is almost nonexistent. Earlier studies have confirmed that open stacks were common among small college libraries before 1940, but few large universities opened their stacks except to faculty and perhaps to graduate students. Among the large universities there appears to have been an extensive shift after World War II to open stacks and limitation of paging services. This conclusion is based upon an examination of plans of libraries constructed since 1947 and upon informal conversation with other librarians.

Reduction of cataloging costs has taken two chief directions: limited cataloging of certain books and use of Library of Congress cataloging and classification without modification. Some institutions, like the University of Kansas for example, have recognized that uncataloged arrearages exist and that they are likely to continue. Having acknowledged the situation, they have selected groups of materials of small probable use, have listed them by main entry, and have shelved them in arbitrary order without subject classification. There has not yet been time for the practice to be evaluated in library literature.

A growing number of libraries have looked to the use of Library of Congress catalog cards without modification as a means of reducing professional cataloging load. A number have changed classification
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schemes to make possible a more thorough utilization of the work already done.

Ironically, the Library of Congress has been exploring the uses of shelf classification in research libraries, with the possible result that it would discontinue subject classification. The study, financed by the Council on Library Resources, has not yet been concluded.\textsuperscript{13}

Libraries have for many years made use of existing business equipment to improve their operating procedures, but the approach has always been that of limited applications. Only recently has there been talk of systematic automation of routine procedures; at present, activity is limited almost entirely to talk. Many of the uses of machines, particularly those referred to as information retrieval, are still far from practical economic accomplishment. Others, more prosaic in their appeal, await the time when a conservative profession will accept the change.

Most of the exploration is in the use of data processing equipment, specifically punched cards and punched paper tape. The use of tape operated automatic typewriters to reproduce catalog cards was probably first made at the United States Naval Postgraduate School at Monterey, California, in 1955.\textsuperscript{14} Since that time the system has been applied in numerous libraries, particularly research institutions which acquire many titles for which Library of Congress cards are not available. The University of Missouri is in the midst of developing an integrated system, a project expected to require at least ten years. It includes the use of IBM equipment for ordering and accounting, Friden Flexowriters for making catalog cards, and eventually an electronic computer which will integrate the two.\textsuperscript{15}

The only thorough study thus far made of a library's operation looking toward complete automation of records is that by the University of Illinois Chicago campus. The proposed system contemplates an integrated operation, as nearly automatic as possible, from the time a book is recommended for purchase, through ordering, cataloging, lending, and finally to withdrawal and replacement. Human labor, once performed, need never be repeated; all subsequent utilization of the results would be through the medium of high-speed automated machine procedures.\textsuperscript{16} The results of the study have a broad usefulness to libraries of universities, but offer nothing for the small independent college.

Recognizing that small libraries can profit from the technological revolution which is about to occur only through joint action, the state-
supported colleges and universities in Colorado have undertaken a project of joint acquisition and cataloguing. Each library will thus be able, for example, to have a computer compiled catalog if it is economically feasible for any library to have one. In these and other ways, academic libraries are seeking—and must inevitably continue to seek—ways of reducing costs in order to make available funds go as far as possible.

References

8. The data for 1939-40 through 1951-52 were published in the quinquennial surveys of libraries in institutions of higher education as follows:
   d. The results of the 1956-57 survey were never published; the data presented here were obtained from special tabulations prepared in the U.S. Office of Education.

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