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STUDY TO DEVELOP A RESEARCH PROGRAM

FOR THE DESIGN DEVELOPMENT OF

MODERN COLLEGE LIBRARIES

FINAL REPORT

Contract No. OEC-1-7-070031-5137

March 15, 1968

HISTORICAL EVALUATION AND RESEARCH ORGANIZATION

1403 DOLLEY MADISON BOULEVARD

McLEAN, VIRGINIA 22101

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The research reported herein was performed pursuant to a contract with the Office of Education, U.S. Department of Health, Education and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
Bureau of Research

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SUMMARY

This is a report by the Historical Evaluation and Research Organization to the Office of Education on a study entitled "Study to Develop a Research Program for the Design Development of Modern College Libraries." The researchers felt that it was unrealistic to consider academic libraries in isolation from the academic processes which it is their purpose to support. All aspects of college information systems, and of the process of information transfer by means of media including (but not limited to) books were explored in the process of the study.

In the performance of the study two principal research methods were used: literature review and field observations and interviews. Although not originally anticipated, the observation and interview program provided the principal basis for the findings and conclusions of the report; some 56 academic and other institutions were visited, more than 120 persons were interviewed.

The objective of the study was "to ascertain the extent to which a research program can be formulated to develop from inception a completely modern library for a new, four-year liberal arts college, to the end that a practical laboratory and demonstration model library could be created, utilizing and implementing the proven new library and information storage, retrieval, and transfer techniques that have evolved in recent years, in order to facilitate library development for new colleges, or library redevelopment for existing colleges."

Based primarily upon the observation and interview program, a survey of the status of "College Libraries and Information Systems Today" is presented in the report. This survey discusses technological developments and new media affecting libraries and information systems; new educational concepts affecting libraries; and problems, trends, and changes that are relevant to the objective of the study. It also reports on some relevant European developments in Denmark, the Netherlands, France, and Great Britain.

The interviews and the survey of recent literature revealed an overwhelming consensus of informed opinion on the need for a coordinated and comprehensive research program which would enable academic libraries to adapt themselves to new technologies and new educational concepts. The report discusses at some length the nature of research required in such a program. Based upon this discussion, a proposed research program is laid out in considerable

detail, and presented in outline form in the Conclusions. These Conclusions are summarized as follows:

- A. Organization for Direction, Coordination, and Evaluation
 - 1. Research program objectives
 - 2. Machinery for authoritative, responsible direction
- B. Systems and Systems Analysis
 - 1. The library as the prototype academic information system
 - 2. Relationships between academic information systems
 - 3. Systems analysis methodology
 - 4. Continuing research in information transfer
- C. Opportunities and Problems in New Technologies
 - 1. Man-machine relationships
 - 2. Non-book (audio-visual) media
 - 3. Reprography
 - 4. Miniaturization
 - 5. Automation
 - 6. Cooperative research with industry
- D. Interrelationship of Education, Information, and Library Service
 - 1. Theoretical premises
 - 2. Image and self-image of the librarian
 - 3. Role of information systems in the educational process
 - 4. Learning centers and their problems
 - 5. The Library-College movement
- E. Coordination of Administration with User-Oriented Service
 - 1. The concept of user-oriented service
 - 2. Evaluation of administration and service efficiency
 - 3. Employment of part-time student help
 - 4. Centralized and/or packaged processing
 - 5. Budgets and operations
- F. Information Storage and Retrieval Possibilities
 - 1. History and trends
 - 2. Requirements and goals
 - 3. Possible research and development

G. Specifics of Establishing a New College Library

1. Operational philosophy
2. Organizational relationships
3. Practical planning considerations

The report recommends that the Office of Education should approve a program along the lines of that presented in the Conclusions, and that, in view of the absence of an existing mechanism suitable to implement such a program (including control, coordination, supervision, and evaluation), the Office of Education should also, at an early date, sponsor an intensive one-week workshop of no more than ten qualified scholars to prepare detailed recommendations for appropriate machinery to implement the proposed research program.

A RESEARCH PROGRAM FOR SMALL COLLEGE LIBRARIANS
AND INFORMATION SYSTEMS

A HERO Study Report

PREFACE

This is a report on a study entitled: "Study to Develop a Research Program for the Design Development of Modern College Libraries," undertaken by the Historical Evaluation and Research Organization (HERO) on the basis of a cost-sharing contract with the United States Office of Education, which provided 83.2% of the budgeted cost of the research. The remainder of the budgeted cost, and additional expenditures, were incurred by the Historical Evaluation and Research Organization (HERO) as an aspect of support which it has provided the College of the Potomac project, for the establishment of a new four-year, liberal arts college in the Washington metropolitan area.

The terms of reference for the study are contained in the study proposal submitted to, and approved by, the Office of Education. The study was initiated on June 29, 1967, and is completed with the submission of this report to the Commissioner of Education.

The study participants are listed below:

Billie P. Davis; Administrative Assistant, College of the Potomac
T.N. Dupuy; Executive Director, Historical Evaluation and Research Organization; Trustee, College of the Potomac; Study Director
Marguerite Fischer; Library Consultant
Grace P. Hayes; Staff Member, Historical Evaluation and Research Organization
Gerald J. Sophar; Executive Director, Committee to Investigate Copyright Problems; Information Systems Consultant

The Study Director was the principal researcher, and the author of this report. Mrs. Fischer and Mr. Sophar contributed greatly to the development of the study methodology, to the preparation of the initial documents (contained in Appendices C and D),

and carried out much of the essential search and review of literature in the fields of librarianship and of information systems. Mrs. Davis and Mrs. Hayes assisted in the organization and analysis of the materials collected in the process of the study, in preparing various portions of manuscript for the report, and in the editing of the overall report.

As Study Director, and as the author of this report, I am pleased to acknowledge the very important contributions to this study made by the other participants, and recognize that whatever merit the report may have is largely the product of their efforts. This does not in any way relieve me, however, of full responsibility for the report and for any shortcomings that it may have.

T. N. Dupuy
Executive Director

McLean, Virginia
March 15, 1968

I. INTRODUCTION

Purpose and Scope

This report presents the results of a study, the object of which (as stated in the terms of reference, Appendix A), was "to ascertain the extent to which a research program can be formulated to develop from inception a completely modern library for a new, four-year liberal arts college, to the end that a practical laboratory and demonstration model library could be created, utilizing and implementing the proven new library and information storage, retrieval, and transfer techniques that have evolved in recent years, in order to facilitate library development for new colleges, or library redevelopment for existing colleges."

In pursuit of this objective, the researchers did not consider that they were limited by traditional concepts of libraries as merely repositories of books and other printed materials. In the process of the study one of the researchers suggested that the definition of a library, at least within the framework of this study, should be as follows:

"A library is a collection of information-transferring material which is arranged, organized, and controlled for the purpose of study and research, or of general recreational information transfer. The principal content of a library is usually printed or written material in the form of books, and the principal means of information transfer is reading; many libraries, however, include collections of films, microforms, phonograph records, sound tapes, lantern slides, and the like, which transfer information by means other than reading."

The researchers felt that it was unrealistic to consider academic libraries in isolation from the academic processes which it is their purpose to support. It was believed to be important to investigate various ways in which the contents, or potential contents, of a college library are being or could be applied in the educational process. Thus all aspects of college information systems, and of the process of information transfer by means of media including (but not limited to) books were explored in the process of this study.

Methodology

The research team included one professional librarian, one information systems specialist, two social scientists with extensive research experience, and one education specialist. One of the social scientists, the project director, has also had considerable college and university teaching experience. Two principal research methods were used: literature review and field observations and interviews. Throughout the process of the study the researchers kept reminding themselves that their objective was not to seek answers, but rather to seek questions as a basis for elaborating a long-range research program from which, it is to be hoped, answers to the questions will eventually emerge.

The first step in the research process was to establish at least a tentative model of the kind of institution for which the research would be undertaken. This resulted in the preparation of a paper entitled: "Postulated Context," (Appendix B) which describes the kind of "new, four-year liberal arts college" which the researchers believe was envisaged in the statement of the study objective.

The researchers believed that a useful basis for the exploration would be to examine the impact of new and unconventional processes on traditional library functions and services. For the purpose of this research "new and unconventional processes" were considered to be any techniques, media, tools, or systems to be found in college libraries or information systems today or in the near future, but that would not be present in the traditional or conventional library of the recent past. Appendix C includes the "Preliminary List of Non-Conventional Processes" that was prepared by the research team, and a sample "Process Work Sheet," of which ten were prepared, to indicate the impact of each of the non-conventional processes on conventional library functions and services (as perceived by the study team) in the library world in general, and in the small college library in particular. From the entries and remarks to be recorded on the ten different process work sheets, it was hoped that the areas requiring further research, and thus the elements of the research program, would become evident.

The list of processes and the process work sheets, however, proved to be more useful as a basis for discussion with librarians and other scholars interviewed in the course of the project, than they did in accomplishing their original purpose. It was discovered that to complete these work sheets in a thorough, comprehensive manner would require a greater expenditure of research effort than the budget would allow. We think this would be worthwhile within the research program we recommend, however.

Considerable thought and preparation were devoted to the preparation for the interview program planned for the project. It was believed that the list of non-conventional processes and a sample of the processes work sheet should be sent to each person to be interviewed. To provide the prospective interviewee with as clear a picture of the nature of the study as possible, each was sent an extract from the proposal approved by the Office of Education and a copy of the "Postulated Context" paper. Also, to suggest the kind of questions that would be asked in the interview, a list of six questions was sent. At the interview itself, a lengthy "Interview Work Sheet" provided the basis for discussion. (The list of questions, and the Interview Work Sheet are included in Appendix D.)

In the interview, both the interviewer and the interviewee had a copy of the Interview Work Sheet in front of them. This provided a basis for discussion which was not, however, limited to the topics on the work sheet. Notes taken during the interview were elaborated into an extensive, informal, confidential, memorandum for the record. In those cases where it was felt advisable, a copy of the memorandum was sent to the interviewee for his information, and for comment.

It was soon found that the interviews were providing even more value to the object of the study than had been originally anticipated. Consequently, the interview program was substantially increased, from an original estimate of about 20, to a total number of approximately 120 scholars and specialists who were interviewed in the course of this project. This includes 19 individuals interviewed in Denmark, the Netherlands, France, and Great Britain in the expectation--which proved to be well-founded--that foreign experience would have considerable relevance. (This foreign portion of the interview program was supported completely by non-Government funds.) Since some of the individuals interviewed were "targets of opportunity," they did not have a chance to see the preliminary papers in advance. These were, however, a relatively small proportion of those interviewed. In some instances, where it did not seem appropriate (as, for example, when observing an innovational educational process only remotely related to libraries), the interview work sheet was not employed.

On balance, the interview program in this study has provided the main basis for the contents of this report, and for the research program which is presents.

Appendix E lists the institutions visited, and the individuals interviewed, during the interview program.

II. COLLEGE LIBRARIES AND INFORMATION SYSTEMS TODAY;

A SUMMARY STATUS REPORT

Technology and the New Media

The college library is faced not only with the problems imposed by the current and continuing multiplication of printed materials--books and periodicals--but with problems related to the growing numbers of other materials and means for transmitting information or ideas. While the appropriate relationship of these non-book media to the traditional library has not yet been clarified, they are--to the extent that they provide sources and resources for scholarly research--in fact supplemental and complementary to printed books and so have an impact on the college library.

The new information media or processes can be grouped roughly into four categories: audio-visual, reprographic, miniaturized, and automated. The first of these includes recordings and sound tapes, various types of projectors for still or animated images, radio, and television.

Reprographic media range from carbon paper, through conventional printing, to the numerous duplicating processes based on electrostatic techniques. The audio-visual and reprographic categories are beginning to overlap, as in facsimile transfer. The ease with which printed materials may be duplicated in the various reprographic techniques raises the serious problem of the violation of copyrights. Although librarians do not seem to be particularly concerned about this, it is a matter that must be given serious consideration.

Miniaturization includes any method of reducing documents in size for purposes of convenience and saving space. The most common manifestation of miniaturization is microform--photographic images on roll film or microfiche, or various types of aperture cards or opaque cards. In these the reduction in size from original documents is usually about 20 to 1 (the government standard is 19 to 1). The most recent microform development is ultra-microform or micro-microform, in which images are reduced 100 times or more.

Although far from new, microform has yet to be generally accepted and adopted on a wide scale. Furthermore, its potentialities do not yet appear to have been thoroughly investigated. The greatest use has been in taking advantage of the considerable saving of space which it provides. It also permits libraries to obtain copies of rare books or books otherwise unavailable or beyond their means. Although most users dislike microform, mostly because of inconvenience in reading, there is hope that further research will overcome some of its drawbacks.

In the fourth category--automation--information is manipulated and processed electronically, by computer. The computer has obvious, although still largely unrealized, capabilities for handling administrative chores for the librarian and also aiding his research and research-support function through the retention and organization of vast numbers of items of information. This latter potentiality creates a mutuality of interest between the librarian and the information systems specialist, particularly in the area of information storage and retrieval.

The proliferation of non-book information media has made it necessary to develop academic services for the use of these media that are comparable to services that are performed by libraries with respect to books. These non-book media services, generally called Instructional Services, are usually centered in one office or department which is at some institution independent or, and at others directly related to, the library. Since such a department and the library both exist to provide information resources, their roles are closely related, regardless of the administrative relationship.

New Educational Concepts Affecting Libraries

In addition to the proliferation of materials and information media, new concepts in education are changing the relationship of the library to the academic community and affecting the services the library is expected to provide. Many of these concepts have been stimulated by new developments in technology, and most of them are the subject of considerable discussion.

Hardly a new concept, but one which has been given new emphasis, is independent study, both as a means of accommodating a progress rate to a student's abilities and as an encouragement to resourcefulness and responsibility through study in depth. New techniques of programmed learning--using either a computer, a less complicated teaching machine, or a structured book--are providing significant aids to independent study.

Another concept is that of academic integration. This is manifested in the trend toward consolidation or closer interrelation

of academic departments in an effort to break down barriers between academic disciplines and to demonstrate to students not only the interdependence of these disciplines and the various courses in the curriculum, but also real-life interrelationships.

Particularly exciting is the concept of the audio-tutorial method of teaching--designed, developed, and most effectively employed by Professor S.N. Postlethwait, Professor of Botany at Purdue. This specialized type of programmed instruction relies upon sound tapes, visual presentations, and laboratory experiments, augmented with demonstrations, printed materials and carefully prepared worksheets. The student works at his own pace, within a scheduled program (although the system does not need to be tied to a schedule) assisted by an instructor as necessary. He may attend a weekly lecture by the professor if he wishes, but must participate in frequent small group discussions led by an instructor.

Although the organization and function of the college library are being affected by all of these technological and conceptual developments, there is no agreement among librarians as to what their effect is or what it should be. Perhaps the only area of agreement is that a library should provide prompt and efficient service to its users, whether in the maintenance of its collection of books and other materials, or in their organization so as to make them readily available.

Relatively little has yet been done to accomplish really effective coordination between libraries and the various other college information systems or resources, such as the new instructional services in non-book media. At the University of Pittsburgh the problem has been approached by combining all information and communications services under a Director of Communications, responsible to the Chancellor.

The Learning Center Concept

Another approach can be seen in the learning center concept. As a means of most effectively and economically using new electronic media for instruction, and for integrating these with more traditional, book-based methods, learning centers, or learning resources centers, are being developed at some colleges, usually built around a closely coordinated library-audio-visual complex. In such centers electronic hardware and related equipment and materials are concentrated in a single building or a complex of buildings, to become the instructional heart of the institution.

Four institutions visited during this study--Stephens College, Oakland Community College, Oral Roberts University, and Oklahoma Christian College--have adopted the learning center concept of education. Four others--the Santa Cruz campus of the University of

California, the Chicago campus of the University of Illinois, Florida Atlantic University, and the University of South Florida --have adopted some features of it. The results vary widely, and there is no general organizational pattern. There are common problems, however, of two types: first, those concerned with management, structure, coordination of activities, and functional relationships within the learning center and between the learning activities and other campus activities; and, second, those related to availability of materials.

Three organizational patterns for learning centers are illustrated in the institutions visited. In the first of these patterns, overall direction is provided by the senior academic administrative staff (academic or assistant dean), with directors of library and instructional service in co-equal, subordinate roles. The second is library-oriented, with a single director trained essentially in library operation and management. The third is media-oriented, with the emphasis of the direction primarily on non-book media, coordinated with relatively conventional library activities. In all three of these there remains the need for considerable cooperation between librarians, media specialists, and faculty.

The availability of suitable non-book material for a college learning center presents real problems. Commercially prepared materials vary in quality and rarely are perfectly suited to an instructor's approach to his subject. Locally prepared materials are often amateurish and unsophisticated in techniques. Both types quickly become outdated. There is rarely time for a professor to prepare adequate materials himself. Live TV presentations on a multi-campus network offer one possible solution to part of the problems, by providing one professor with time to prepare good and adequate material while another professor is presenting his course.

The College-Library Movement

Hand-in-hand with increasing emphasis on independent study has emerged the concept of the library-college. This may be defined as "a college in which the dominant learning mode is independent study by the student in the library, bibliographically guided, intellectually aroused, and spiritually stirred by the faculty." The library becomes the heart of the college, with librarians and teachers sharing their traditionally separate functions. While there is much difference of opinion as to the degree to which such a development is practicable or desirable, most educators and librarians are in accord with the aim for close association of classroom and library.