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EDUCATIONAL TECHNOLOGY AND SCHOOL LIBRARIANSHIP: THEIR CHANGING RELATIONSHIP

The University of Oklahoma ED.D. 1980

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GRADUATE COLLEGE

EDUCATIONAL TECHNOLOGY AND SCHOOL LIBRARIANSHIP: THEIR CHANGING RELATIONSHIP

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY

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degree of

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BY

FRANCES GERALDINE ALSWORTH

Norman, Oklahoma

1980

EDUCATIONAL TECHNOLOGY AND SCHOOL LIBRARIANSHIP:

THEIR CHANGING RELATIONSHIP

APPROVED BY

DISSERTATION COMMITTEE

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EDUCATIONAL TECHOLOGY AND SCHOOL LIBRARIANSHIP: THEIR CHANGING RELATIONSHIP

CHAPTER 1

INTRODUCTION

This study will trace the development of the relationship between educational technology and school librarianship; the study will focus upon events and circumstances which have contributed to the present relationship between the two fields. In addition, recommendations may be developed regarding the conditions necessary for a more appropriate complementary development of objectives and programs in the two fields.

Background

Educational technology and school librarianship are both segments of the total educational program in the United States, and they have some common concerns. They are not, despite certain prevalent misconceptions, simply different designations for the same field. Relationships between the two fields have been unclear to many people--sometimes even to the professionals in the involved areas.

Educational technology is essentially a product of the twentieth century. It deals with the scientific development of instructional programs based on knowledge of learning styles and teaching designs that result in effective accomplishment of objectives. Involved in the development of such programs are communications media of all formats. The professional in the field must be knowledgeable about instructional development and fully cognizant of the many forms of media, their uses in an educational program, and ways of obtaining them--by purchase or production.

School librarianship is also essentially of the twentieth century. It deals with the provision and organization of information sources (in any format) that are needed to implement educational programs successfully in whatever institution is being served. It also involves instructing students in proper utilization of the resources available--beyond those used directly in the instructional program in the classroom, and encouraging reading for pleasure. The professional in this field must be able to correlate materials with curriculum designs and be fully informed as to selection principles, acquisition procedures, reading guidance, and organization techniques.

The clientele for both fields come from the population involved in formal educational programs in various locations. Often their clientele are the same. Because educational technologists and school librarians have the common concerns of students and media, some people see their

professions as the same under different titles. This is not the case.

Because their functions involve common concerns and also, in part, because their responsibilities appear to some educators to be the same, efforts have been made to merge the two fields. Administrators sometimes hire a professional prepared in only one of the two fields to direct a school library media center. This may lead to an inefficiently operated media center and almost certainly will cause frustrating problems for the person hired as a director.

A compounding of the problem has resulted from training programs for professionals in both fields that try to offer preparation for school librarianship and educational technology under a plan intended originally for one or the other. The products of such programs are usually librarians who know how to operate audiovisual equipment or educational technologists who have mastered a simplified organization system. Rarely do they have the needed depth in both areas. Discussion in chapter five of this report concerning educational requirements gives evidence that the professionals in the fields concerned recognize this problem.

As information formats increase and emphasis in education turns to greater utilization of their varied forms, the planners of instructional programs and the service centers providing necessary materials to facilitate the programs should be cooperating in many respects. Evidence of some

cooperative efforts do exist. There also exists evidence of misunderstandings, professional jealousies, and in some instances a lessening interest in cooperative efforts between the two fields.

Need for the Study

History often helps to explain existing situations. "From the trials and errors of one's predecessors it is possible to learn much of use and to deepen one's insight and kindle one's imagination" (Ditzion, 1947, p. 7). By examining the history of both fields involved, explanatory events may be discovered that will help in perceiving what has happened to the fields' relationships to each other and provide insights for feasible action in the future.

Scholars who have studied the historical developments in these fields have usually been concerned with one field or the other but not with both. A study that includes in its scope the history of the two fields and their parallel concerns will perhaps reveal hitherto unnoticed information.

Educational technology and school librarianship are both gaining greater importance in the educational programs of today's schools, and this adds impetus to the need for clarification of the roles that should be played by the professionals in both fields. Effective contributions by both groups can without a doubt lead to more efficient teaching programs and to more satisfactory learning experiences in our schools.

Evidence of attempts at cooperation between the two fields and the fact that some attempts have failed also indicates a need for attention to the problem. Perhaps an objective look at past attempts may identify the probable causes for failure in some cases. Areas for possible future cooperative efforts may also be revealed.

Educational programs of today need to be operated at the highest possible level of efficiency at the lowest possible cost. Clarification of the roles to be played in such programs by school librarians and educational technologists will contribute to that goal. If this study can assist in clarifying the roles of the two fields and also point the way to more effective cooperation between the two, it will be of significance to educational technology, to school librarianship, and to the total field of education.

Review of Selected Existing Literature

Preparation for this report has involved study of examples of the history of both educational technology and school librarianship. The focus of the study has been to identify events and circumstances in both fields that have contributed to the relationship between the two fields. Notice has been taken of objectives, clientele, and professional preparation as the fields emerged and gained professional maturity. Literature dealing with the two fields consists almost entirely of treatment of one field or the other, with only a very small number of treatments devoted to

the relationship between the fields. Comprehensive histories of both fields are available in very limited numbers. Literature mentioned here shows some of the works found helpful in preparing this report.

Educational technology is surveyed comprehensively by Paul Saettler in A History of Instructional Technology. He goes back as far as the fifth century B.C. to the Elder Sophists whom he saw as ancestors of educational technology. His historical research selected teachers whose instructional techniques placed them in influential roles in the development of education. He includes Comenius, whose Orbus Pictus is often called the first illustrated textbook and who is referred to by some writers as the originator of audiovisual education. Saettler agrees that Comenius had remarkable insight into the scientific treatment of education that today's educational technologists support. Saettler also discusses educational theories that were popular in the eighteenth and nineteenth centuries and could be identified as forerunners of educational technology. He included instructional techniques of Joseph Lancaster, Johann Heinrich Pestalozzi, Friedrich Wilhelm Froebel, and Johann Friedrich Herbart. All of their theories dealt with instruction, but Herbart put central focus upon cognitive elements in the instructional process, and thereby pointed the way toward today's theories.

Twentieth century educators who have influenced the developing field of educational technology are also discussed

in Saettler's work. Outstanding contributors such as John Dewey, Edward Thorndike, Maria Montessori, Kurt Lewin, B. F. Skinner, and others are included in the recounting of the development of educational technology. Attention is given to the changing ideas of educators concerning the focus of the educational process. Attention began to turn to learning methods and learning styles rather than total concern with instruction.

After giving the theoretical developments in education which led to educational technology's emergence as a discipline, Saettler devotes his account to numerous occurrences and ideas that were part of the total development. He selects things that both helped and hindered the progress made in educational technology. Included are museums, instructional film, audiovisual instruction, instructional technology uses in industry and the military, instructional radio, instructional television, programmed instruction, and the systems approach to instruction. Also discussed are societal problems such as wars, economic recessions, etc., which had great impact on education as a whole.

This definitive history closes with discussion of instructional media research up to 1965 and of problems and prospects of the field. This work made a significant contribution to the field of educational technology; it provides an account that today's researchers can accept as objective and reasonably complete in presenting the evolvement of educational

technology even though the accepted designation for the field was at that time instructional technology. Educational technology is a more apt designation today in light of the greater emphasis on learning while still showing concern for instructional techniques.

Charnel Anderson, as part of the Technological Development Project of the National Education Association of the United States, wrote Technology in American Education 1650-1900. The purpose of his study was to cover developments of "other than conventional audio-visual devices involving photography and sound techniques" (Anderson, 1962, p. iii). His emphasis was chiefly on the nineteenth century. Although the major developments in educational technology have occurred in the twentieth century, this account of instructional apparatus of the earlier period contributes to a more complete understanding of the entire field.

Visual education, with chief emphasis on use of motion pictures, was studied by Frank N. Freeman. He investigated claims that visual education might replace both teachers and textbooks. He saw educators of the twentieth century as approaching educational problems more scientifically than had those in the nineteenth century. He felt that most change before the twentieth century was made on the grounds of opinion not substantiated through research and experiment. He discovered substantive contributions were being made through visual aids to education, but that exaggeration of their

contributions was common among strong advocates of visual education.

A fairly comprehensive article on educational technology was included in the Encyclopedia of Educational Research of 1969. This article, "Educational Communications Media," by Loran C. Twyford, Jr., gives a state-of-the-art report on the field. Reference is made in this article to the interest of the American Association of School Librarians of the American Library Association in working with the Department of Audiovisual Instruction of the National Education Association toward some kind of joint endeavor in the utilization of instructional media.

Numerous articles which have been published in periodicals and monographic readings collections and dealt with single aspects of educational technology have been examined. Examples of these will be commented upon at this point.

Selecting Media for Learning: Readings from Audio-visual Instruction deals with the selection done by educational technologists as they plan for and implement instructional programs. Most of the articles included were written during the early 1970's and reflect the changing objectives and techniques which were being sought as part of this study. They also have implications for changing needs in training programs for professionals in educational technology.

The Cognitive Domain: A Resource Book for Media Specialists was prepared in relation to National Special

Media Institutes and the consortium of higher education institutes brought about by James D. Finn who saw a need for input into the changing and growing area of educational technology. The contributors concerned themselves with the relationship between behavioral sciences and education. This shows the change in educational technology from the concern with audiovisual aids to teaching to concern with the entire instructional process. Dale G. Hamreus discussed the systems approach to instructional development, a technique which educational technologists use to effect desired results from their instructional programs. The technique and the systems approach and the implications for professional preparation are important to this study. Jack V. Edling and Casper F. Paulson discussed the understanding of instructional media. They "conceived of instructional technology as a mediator of events....We have drawn attention to the manner in which the ability to fix, manipulate, and distribute events can be utilized, and has been utilized, to study, predict, and modify behavior" (Cognitive Domain, 1972, p. 174). Their ideas give insight into the practice of educational technology and its objectives. Other writers for The Cognitive Domain concern themselves with the study of the learning process and the learners. This book of readings was a valuable resource for the purposes of this report.

Instructional Technology: A Book of Readings presents a variety of articles intended to clarify "the problems

and promises of instructional technology" (p. viii). Major topics treated in this collection include social implications of technology, audiovisual media as they affect teaching, the systems concept of instruction, information storage and retrieval changes, and the effect of media use on the economic aspect of education. Approximately thirty writers representing a variety of disciplines and institutions, discuss many topics that show the variety of concerns within the field of educational technology. The section on information storage and retrieval includes articles on libraries; this is one of the few sources that had problems of libraries and of educational technology within the same volume. Even here the writers deal with the fields separately. The presentations in this collection give the concerns of professional educational technologists and are accurate indicators of changing objectives within the field.

Merlin C. Wittrock's Learning and Instruction is a wealth of retrospective information concerning the major research area of learning and instruction. It contains examples of writings from the time of Aristotle and Plato up through the middle 1970's and covers a multitude of reports on various aspects of the learning and instruction realms. These show changes in attitudes concerning the educational process through a long period of time and form the basis for educational technology theories that have developed.

Other periodical articles concerning educational

technology that have been examined have been located in professional journals such as Audiovisual Instruction, Educational Technology, AV Communication Review, and ECTJ. Some information was found in other periodicals, but the majority came from these recognized, authoritative sources.

The 1977 publication Educational Technology: Definition and Glossary of Terms gives authoritative definitions of many terms in educational technology, clarification of theoretical concepts in the field, and historical perceptions.

Monographs not discussed here have yielded information that has been used but the ones mentioned herein have been especially helpful. The history of educational technology is available to the researcher, but to get a comprehensive picture requires consulting a large number of sources.

Comprehensive histories of school librarianship do not exist. To pursue the history of this profession requires a study of school libraries and taking from that study the implications for the professionals who are in charge of these libraries. Histories of school libraries are not abundantly available either.

School Library Service in the United States: An Interpretive Study by Henry L. Cecil and Willard A. Heaps provides the best single account of school library history. It is limited to the United States, but it does tell of the influence of European educators on American education and consequently on school libraries.

The work begins with a discussion of the importance of school library service in educational programs. Definitions are given that clarify the writers' ideas on the topic under consideration. Attention is also given to what responsibilities were shared with educators for providing school library service. The research done for this area of Cecil and Heaps' work provides helpful insight into objectives set for school librarianship in the United States at an early time.

The school-district libraries in the United States during the nineteenth century are usually considered the first identifiable school libraries for this country. Cecil and Heaps selected three states that played a significant role as examples through which they told the story of this development. The states discussed were New York, Massachusetts, and Michigan.

School and public library cooperation in providing school library service highlighted the late nineteenth century. The work relates developments in libraries and in education that affected the library service in schools. Cooperative efforts between schools and public libraries are described.

Designated by the authors as the "Period of Rapid Growth," a discussion of the first four decades of the twentieth century tells of significant changes in education that had great impact on school libraries. Included are

accounts of the Platoon School which was introduced by William A. Wirt in Bluffton, Indiana; the Dalton Plan which was introduced by Helen Parkhurst in Dalton, Massachusetts; and the Winnetka Plan which was introduced by Dr. Carlton W. Washburne at Winnetka, Illinois.

Changes in services expected of school libraries are also explored by these authors. These changed expectations had impact upon the objectives that school librarians set for themselves. The contributions made to school library service by the professional organizations are discussed; both library and educational professional organizations are included. The writers touch upon increased interest and research done by educators concerning school library service. These occurrences have definite importance for this study.

Cecil's historical study of school library service continues by giving information on state and national impact on school libraries in a variety of ways: support, supervision, selection of materials, and certification of librarians. The theory of centralization is considered under different plans such as under public library direction, under school board direction, and also simply within a school sytem. Consideration is given to the advantages and disadvantages of central school libraries as compared with classroom libraries. All of these concerns have implications for the study which is here undertaken. The Cecil and Heaps work was exceptionally helpful as a source on history of school libraries.

Elmer Johnson's History of Libraries in the Western World gives attention to early school libraries. He devotes one chapter to school libraries in the United States. In that chapter he mentions the school-district libraries, which he treats at greater length in his chapter on public libraries in the United States. He also tells of school libraries that existed in the private schools or academies. Some academies were in operation during the colonial period, but information is scarce concerning their libraries. He follows school library development in the United States until 1965. In his chapter on special libraries he gives some attention to school libraries in several countries other than the United States.

Arthur E. Bostwick compiled The Relationship Between the Library and the Public Schools: Reprints of Papers and Addresses. This collection contains compositions by outstanding educators and librarians who expressed ideas that were prevalent concerning school library service from 1876 to approximately 1911. Several of the articles deal with the training of school librarians in the normal schools of the time. All of these articles given valuable insight into objectives and techniques historically associated with school libraries.

Lucile F. Fargo wrote a definitive work on school library service which was published in 1930. She intended it as a textbook for training school librarians. This work

is looked upon as a classic in school librarianship, and as such was very valuable in this study especially in the area of objectives and techniques in the field.

Ruth Ann Davies has written a work on the school library media center which updates the objectives and techniques of school library media center, a unified library and audiovisual center. This work reflects the thinking of a great many professionals and is written chiefly from a librarian's point of view. It gives insight into the current objectives and techniques of school librarianship.

A number of recent works on school librarianship emphasize the greater importance now given to the school librarian's role as an educator and not simply as a manager of materials. Among these are The Teaching Role of the School Media Specialist by Kay E. Vandergrift, The School Librarian as Educator by Lillian Biermann Wehmeyer, and The Principal's Handbook on the School Library Media Center by Betty Martin and Ben Carson. All give important information concerning school librarians' service in today's school.

Professional journals have provided a variety of single purpose articles on school librarianship which have proved beneficial to this study. Journals which have been most helpful include ALA Bulletin, Library Trends, Library Journal, School Media Quarterly, Wilson Library Bulletin, and American Libraries. The articles from these sources

have dealt with issues of importance to this consideration of school librarianship.

Other monographs than those previously referred to have provided some material, but the ones mentioned in this discussion have been especially useful. Others will be cited in the discussion of school librarianship later in the report.

Literature which provided information for the history of both educational technology and school librarianship was not found in great quantity. However, some was available. The fact that both fields are part of the broader field of education enables the researcher to use some sources for either or both the histories of school librarianship and educational technology.

Government reports and proceedings of professional associations have yielded factual information on development of the fields as well as insight into changes in objectives, techniques, and professional training through the years. The report of the U. S. Bureau of Education in 1876, Public Libraries in the United States of America: Their Condition, History, and Management, included school libraries. Other government reports that have been helpful include reports in 1961, 1964, and 1968 from the Council of Chief State School Officers; a 1969 report to the President and the Congress by the Commission of Instructional Technology; and a survey of school media standards done under the auspices

of the Department of Health, Education, and Welfare by Milbrey L. Jones. Proceedings of the National Education Association provide information on the development of both fields. Proceedings of the American Library Association and of the Association for Educational Communications and Technology have given help in determining trends in the two fields.

Standards that have been developed by each field separately as well as those developed cooperatively have been of great value to the report. Standards for school libraries were published in 1920, 1945, and 1960. Standards for audiovisual programs in schools were published in 1966. Cooperatively prepared standards were published in 1969 and 1975. These give very definite evidence of the objectives, techniques, and professional preparation requirements as they have developed.

Consideration of the relationship between the two fields was found in a few sources (other than standards). Most of them were written in response to the publication of joint standards. Judith Burns in "Joint Standards: Media or Mediocrity," reported the thinking of some leaders in the field of educational technology with varying ideas about unification with school librarianship. David Alan Gilman in "Can Instructional Technology Survive the Joint Media Standards?" advocated separate but cooperative relationships. J. P. Vergis and Loren Twyford stated opposing views concerning unification of the fields. The most radical

opposition to the joint standards of 1969 came from Doris M. Timpano in Crisis in Educational Technology. David R. Bender in "Cooperative Planning for Media Program Development," expresses support for cooperative efforts but offers cautions in working out such efforts. Karen Levitan in "The School Library as an Instructional Information System," considers the changes needed in school libraries in order to unify the fields of school librarianship and educational technology. The AASL Task Force on Cooperation at the American Library Association conference in Dallas in 1979 reported that a joint committee from AECT and AASL was needed to work on the problem.

In reviewing the literature it was found that there exists a reasonable quantity of information on the history of both educational technology and school librarianship. Since both fields have attained their professional status in the twentieth century, this is not surprising. Record keeping has been more systematic in this century than in earlier times. Comprehensive histories are not available in any significant number, and this might be considered a weakness. However, comprehensive histories of almost any specialized field will not be found in great number, so this author does not consider that a weakness. Federal aid to education has generated a large number of reports which prove to be a strength when seeking information in both educational technology and school librarianship. The fact that school librarianship as a profession is not reported on seems to be a weakness in the

literature of librarianship. Reports on school libraries provide, through implication, the information needed in a study such as this, but there might be researchers with slightly different aims who would find this weakness a problem.

It is concluded that a comparative history of educational technology and school librarianship does not exist at present. This adds value to this study with such an aim in mind. The literature indicates that cooperative efforts between the fields should be worked out and that study of the two fields may provide helpful information toward such actions.

Questions to Be Answered

1. What were the objectives of each field at its inception?
2. How have these objectives undergone change through the years?
3. What special approaches have been utilized in each field to accomplish their identified objectives?
4. What special clientele have been served by each field?
5. What educational requirements and/or programs have been set for the professionals in each field?
6. What common elements or concerns have been developed between the two fields?
7. What are the major differences in philosophy and practice between the two fields?

Definition of Terms

According to Webster's Third New International Dictionary of the English Language, the term education may be

defined as the process of providing with and developing knowledge, training, or skill especially through formal schooling. The term education also sometimes is used interchangeably with teaching when that term is understood as the imparting of knowledge or skill. Education is sometimes used to mean the study of teaching and learning processes. In this study the word education will be used to mean the process of providing with and development of knowledge and skills essential to effective attainment of identified objectives in formal school programs.

Technology may mean the application of science or the method and materials used in this application (according to American Heritage Dictionary of the English Language, 1973). James D. Finn says, "Technology includes processes, systems, management and control mechanisms both human and non-human, and above all a way of looking at problems as to their interest, and difficulty, the feasibility of technical solutions, and the economic values--broadly considered--of those solutions" (Educational Technology; Definition and Glossary of Terms, Vol. 1, p. 169).

Educational technology has been defined by AECT's Task Force on Definition and Terminology as "a complex, integrated process involving people, procedures, ideas, devices, and organization, for analyzing problems, and devising, implementing, evaluating, and managing solutions to those problems, involved in all aspects of human learning.

In educational technology, the solutions to problems take the form of all the Learning Resources that are designed and/or selected and/or utilized to bring about learning; they are identified as Messages, People, Materials, Devices, Techniques, and Settings. The processes for analyzing problems, and devising, implementing and evaluating these solutions are identified by the Educational Development Functions of Research-Theory, Design, Production, Evaluation-Selection, Logistics, and Utilization. The processes of directing or coordinating one or more of these functions are identified by the Educational Management Functions of Organization Management and Personnel Management. The relationships among these elements are shown by the Domain of Educational Technology Model. Educational technology is often confused with 'technology in education' and 'instructional technology'." Educational technology, for the purposes of this study will be defined as the application of scientific methods to the study of the teaching and learning processes. This application of scientific methods also involves the use of methods and materials that may themselves be termed technology.

School is defined by Webster's as an organized source of education and training, and that is the sense in which it is used in this study.

The A.L.A. Glossary of Library Terms defines library as "a collection of books and similar materials organized

and administered for reading, consultation, and study," The "similar materials" in today's libraries include pictures, recordings (audio and video), microprint forms, motion pictures, and realia. The term school media center is sometimes used to designate libraries that have expanded their collections to the varied information formats. AECT and AASL in the standards of 1975 defined school media centers as "An area or system of areas in the school where a full range of information sources, associated equipment, and services from the media staff are accessible to students, school personnel, and the school community."

The word media is used in several ways. It sometimes is used in reference to mass communications and may be understood to mean newspapers, radio, and television. It also can be defined as in the educational technology Glossary, "All of the forms and channels used in the transmittal of information process." This is the sense in which it is used in this study. This definition includes in media all forms of expression of ideas whether involving print or nonprint formats.

ALA's Glossary tells us that librarianship is, "The application of knowledge of books and certain principles, theories, and techniques to the establishment, preservation, organization, and use of collections of books and other materials in libraries, and to the extension of library services." School librarians will be defined in this study as persons who have been trained in librarianship and who

apply their knowledge in school libraries (or school media centers).

Educational technologists will be used to mean those persons who practice the application of scientific methods to the teaching and learning processes as the definition of educational technology previously given would imply.

Webster's defines history as "a branch of knowledge that records and explains past events as steps in the sequence of human activities; the study of the character and significance of events." In this study the term history will mean the recording and analysis of events in the fields chosen as the focus of the study.

Assumptions

It is assumed that, through an analytical examination of the historical development of educational technology and of school librarianship certain circumstances and events may be identified as factors contributing to the nature of the relationship between the two fields.

It is assumed that such a study will provide insight into efforts made by educational technologists and school librarians to promote complementary practices between their disciplines, perhaps identifying probable causes for success or failure of past efforts and suggesting alternative routes to more successful efforts in the future.

It is assumed that the study will provide an understanding of major differences in philosophy and practice

between the two fields that contribute to the uniqueness of each; this understanding will in itself help to guide future action of professionals in both fields as they seek to work closely with each other.

It is also assumed that such a study, although limited to the educational roles of educational technology and school librarianship, will be of interest to teachers of all subject areas and administrators of elementary and secondary schools and institutions of higher education in any location, because the two educational areas being studied provide services to all areas of education.

Limitations of the Study

Educational technology frequently deals with educational programs not related to formal school situations, but this study was limited to those aspects of educational technology that do relate only to formal school situations.

Analytical study of the historical development of educational technology and school librarianship was limited to circumstances and events seen as relevant to the relationship between the two fields. Some aspects of the history of each field were beyond the scope of this project.

The study was limited to developments in the United States although educational technology and school librarianship are part of school programs throughout the world. Summation and conclusions are intended for programs in this country although they might apply in other geographic areas as well.

Hypotheses

It is hypothesized that, through a study of the histories of the fields of educational technology and school librarianship probable causes of certain situations currently existing between the two fields may be identified and that feasible future paths for development in both areas may be discerned that will lead to a more rewarding relationship between the professionals in the two fields and that will result in a complementary relationship between the two fields.

It is also hypothesized that, through examination of the objectives of educational technology and school librarianship and approaches utilized in each field to attain these objectives a definitive statement may be developed in regard to the uniqueness of each field.

Lastly, it is hypothesized that such a study will provide insight into current problems of education in general because of the major roles now developing for both educational technology and school librarianship in the larger area of education.

CHAPTER II

METHODOLOGY

The procedure chosen for this research project was historiography, the seeking and writing of past events. Historical research is "the application of the scientific method to historical problems" (Best, 1963, p. 86). This recounting of past happenings within the fields of educational technology and school librarianship will hopefully have salient influence on current happenings in the fields. "Although there is little certainty in human affairs, and sensible men do not expect it, current parallels with the past may suggest common-sense courses of action" (Shafer, 1969, p. 11).

The historian has the responsibility to search carefully for all the information which might be relevant to the problem being considered. No researcher can ever be sure that all pertinent information has been found, but endeavoring to find all that can be located will provide enough information to permit explanation and interpretation that can be accepted with considerable confidence.

Both primary and secondary sources have been utilized in this research project. Primary sources are original sources of information such as the expression of personal opinions in journal articles and monographs written by trained professionals in the fields relevant to the study. Secondary sources are those which report or record historical events or circumstances one or more steps removed from the original source of information.

Journal articles and monographs have provided much valuable information for this report. Professionals in both educational technology and school librarianship have written on topics that provide insight into the problem areas of the study. Numerous documents such as government reports, standards of the separate fields, and standards prepared jointly have also provided primary source material for the study.

Secondary sources have been quite helpful in reporting the historical development of educational technology and school librarianship. Those writers who have pulled together historical accounts of development of either field or at least a portion of its development have given a basis for the historical accounts which will follow in this report. Some of the primary source materials used by the writers of the secondary source material were also examined as part of the research done for this report. This was not only to ascertain correctness of information, but also to give this writer closer touch with the origins of the fields studied.

The concepts of external and internal criticism have been considered in preparation of this study. External criticism establishes the authenticity of materials used as sources. Standard, authoritative bibliographic sources were helpful in this regard. Materials that have been used for most of this report have been located through reliable bibliographic sources, and there is little doubt that the sources utilized are exactly what they purport to be. Internal criticism evaluates the credibility of source materials. This involves consideration of the author's mental attitudes and condition, motivation, competence in the area dealt with, sources, and intended audience. This concept has been especially important in this study. The journal articles and monographs written by the professionals in educational technology or in school librarianship have for the most part been written by people trained in only one of the relevant fields and the audience for whom they wrote usually was their peer group in their own professional field. This has been considered in evaluating what was written in each case. Most of the writers have attempted to be objective, but in a few cases polemic writing was clearly the author's intent.

The concept of internal criticism has entered into the planning and wording of this entire report. Although this writer's training includes both educational technology and librarianship, she has been employed for sixteen years as a librarian. A sincere attempt has been made to look at the

sources objectively, and a forthright account that deals with both fields equably has been the goal of this report. Only those who read it will assess the success or failure of the attempt.

Information sought for this study was found chiefly in printed sources. These included journal articles from scholarly publications of the fields of education, educational technology, and librarianship. Monographs provided in-depth commentary on aspects of the study from knowledgeable professionals over a wide time period and representing the separate concerns of educational technology and school librarianship. Research reports in journals have given needed information. Printed proceedings of professional organizations that are concerned with the fields of study and have been instrumental in the development of both educational technology and school librarianship were of great value to the study. Government reports also revealed factual source materials that have been of major importance to the development of these fields.

The needed sources were obtained chiefly from Max Chambers Library at Central State University in Edmond, Oklahoma, the Bizzell Memorial Library at the University of Oklahoma, and the materials collection at the Oklahoma Department of Libraries in Oklahoma City.

CHAPTER III

HISTORY OF EDUCATIONAL TECHNOLOGY

This chapter presents a selected sampling from various theoretical beginnings and events affecting the field's development seen as relevant in answering the questions posed in chapter one of this report. A complete survey of the field's total history is not intended. Most of the material refers to relatively modern time periods, but a few references were made to antiquity when this seemed appropriate.

To trace the history of educational technology might be a very limited task if the terminology as stated were adhered to strictly, for it was as recently as 1976 that the Association for Educational Communications and Technology developed and endorsed the conceptual framework for defining the profession of educational technology. In the publication Educational Technology: Definition and Glossary of Terms the official definition of educational technology is given as follows:

> Educational technology is a complex, integrated process involving people, procedures, ideas, devices, and organization, for analyzing problems and devising,

> implementing, evaluating, and managing solutions to those problems, involved in all aspects of human learning. In educational technology, the solutions to problems take the form of all Learning Resources that are designed and/or selected and/or utilized to bring about learning; these resources are identified as Messages, People, Materials, Devices, Techniques, and Settings. The processes for analyzing problems, and devising, implementing, and evaluating solutions are identified by the Educational Development Functions of Research Theory, Design, Production, Evaluation-Selection, Logistics, Utilization, and Utilization-Dissemination. The processes of directing or coordinating one or more of these functions are identified by the Educational Management Functions of Organization Management and Personnel Management. (p. 1)

Although this is the official definition and the approved terminology, some professionals in the field still prefer other statements of concept such as educational media, learning resources, instructional media, and audiovisual instruction.

Some Theoretical Foundations

The history of educational technology goes back to a time in which none of today's terms for the field existed. The ideas and practices of educators that could be called

the originators of educational technology are traced by some to the time of the Sophists. "They were probably the first professional teachers, who by their systematic analyses of subject matter and organization of teaching materials, laid the groundwork for a technology of instruction" (Saettler, 1968, p. 23). Their teaching was done as free lance teachers not in a school; this was in the last half of the fifth century B.C. "They were pioneers who discovered and set in motion a whole series of new educational tendencies, and though they did not advance far in any one direction themselves, from their time onwards the general direction was fixed, to be followed later" (Marrou, 1956, pp. 56,57).

Another strong influence on education and educational technology during the seventeenth century was Johann Amos Comenius. He wrote a series of textbooks and developed many instructional principles that seem quite modern. He had the idea that education should begin at infancy and that the needs and interests of the learner at his various age levels should affect the instruction given. He felt that memorization without understanding should not be a part of education. He recognized that learning should be encouraged through the senses and that illustrative materials should be utilized. His Orbus Pictus, published about 1658, was for the study of Latin and sciences. It is often referred to as the first illustrated book of its kind, but has been questioned by some researchers. "The ineffaceable fact is

that Comenius's little volume was the first pictured schoolbook to be put to long and successful employment in the chambers of learning" (Meyer, 1972, p. 253). Orbus Pictus was used for approximately 200 years. It was for a time the only link to the work of Comenius until the middle of the nineteenth century when his other works were rediscovered. (Cole, 1950) His ideas are being used by educational technologists today.

During the colonial period in America very little educational technology was apparent. School buildings were crude and teaching was done by many people who were untrained and not capable of efficient instruction. Children often attended school only during times when they were not needed to help with farming, etc., at home. Instruction given was often impractical; rote learning was common. Poor quality paper, homemade inks, and hornbooks were typical of the instructional accouterments of the time. Practically all instructional materials were moralistic, for there seemed to be a prevalent idea that to educate a person was to make him "good."

Following the Revolutionary War education faced a time of rebuilding. Many teachers had gone into the army, and a great many schools had closed. Some new implements became available for instructional use. Among these were blackboards, slates, and maps. (Anderson, 1962) Educators also began to see the importance of having proper instructional

implements for use in their programs. A popular method of instruction during this period was the Lancasterian monitorial method, developed by Joseph Lancaster of England. This method allowed one trained teacher to direct the learning activities of five hundred or more students at one time. The method was certainly not developed by considering learning theory, but it did introduce order and system into instructional methods in America. Its effect is still apparent. (Cubberley, 1962)

Educational theories which had significant impact upon educational technology emerged during the latter eighteenth and early nineteenth century. Johann Heinrich Pestalozzi, who was strongly influenced by the theories of Jean Jacques Rousseau, developed a system of instruction which allowed the learner to progress as his own needs directed. Pestalozzi and his object lesson utilized learning through the senses. (Cole, 1950) His ideas affected many other educators in Europe and America.

Another important theorist was Friedrich Wilhelm Froebel. The educational methods that he promoted included free self-activity, creativeness, social participation, and motor expression. He felt that children should learn by doing not merely through verbalization. His methods influenced kindergarten teaching in the United States in the late nineteenth century. (Meyer, 1972)

Johann Friedrich Herbart emphasized moral development

as the major aim of education. He was strongly influenced by Pestalozzi and through his teaching for twenty-four years at the University of Konigsberg, Germany, he himself influenced many others. He believed that learning consisted of relating new ideas to old ones and that it was important to introduce ideas in proper sequence. He recognized three levels of learning; the first involved predominantly sense activity, the second reproduction of previously formed ideas, and the third conceptual thinking and understanding. He felt it extremely important that appropriate learning materials be made available to students. (Meyer, 1972) "Herbart was particularly convinced that the history and great literature of the world, when properly selected and arranged, would develop the interests and understanding of learners at their successive periods of growth" (Saettler, 1968, p. 43). Herbart's influence too was important in the United States in the late nineteenth century.

These early developments in education have definite importance in the historical study of educational technology, but none of them can be accurately designated as its beginning. In the introduction to this study educational technology was called essentially a product of the twentieth century and the early twentieth century saw several events which might be called the true beginning of the field. A few educators of this time developed theories and methods that led to a science of instruction.

Edward L. Thorndike applied quantitative research to instructional problems. His theory of connectionism was an important part of the educational system he developed. He advocated repetition for retention of learning, the importance of pleasure for strengthening responses and pain for weakening responses, and the importance of readiness for learning. Adapting to individual interests was important in his teaching method. He felt that textbooks were frequently misused and that a variety of teaching aids should be utilized. (Cubberley, 1962)

John Dewey had vast influence in American education as a whole and consequently on educational technology. He felt that education was life. He established an experimental school that began the Progressive Education Movement. He believed in unconventional methods for his time. His schoolrooms were not arranged in traditional patterns; teachers often were found guiding individual activities of students; and not all children did the same things at the same time. Dewey believed that learning came from reflective thinking. The student must recognize a problem, formulate a hypothesis, test the hypothesis, and draw conclusions. (Dewey, 1910) Today's learning theories largely agree with this, but varied methods of bringing about the desired thought patterns exist.

Maria Montessori through her work with mentally deficient and with culturally deprived children developed a method of teaching which aroused interest of educational

leaders in the United States early in the twentieth century and again in the 1950's. Her teaching method recognized each learner's individuality and encouraged his freedom. Children were allowed to select their learning materials and to work where they chose. The teacher observed and guided, but let the child learn from his own mistakes and become more independent as he learned. Sensory training was used extensively. (Cole, 1950)

Interest in individualizing instruction has been an important element in educational development since the late nineteenth century and certainly has influenced twentieth century education in the United States. This interest has found fruition in much of the development in educational technology. Those people who have tried experimental teaching methods to give proper attention to individualization have usually been major contributors to educational technology.

The Winnetka Plan, developed by Carleton W. Washburne, provided self-instructional and self-corrective workbooks for use in the schools of Winnetka, Illinois. Each child's learning program was developed by the teacher for that individual. (Cubberly, 1962)

The Dalton Plan, developed by Helen Parkhurst, involved the making of a contract between the teacher and the student. The child could work on the contract as he wished, but was required to fulfill the contract before getting another. The teacher was available to assist with learning

difficulties. Some group activity was provided but the child's education was chiefly an individual matter. (Parkhurst, 1922)

The Morrison Plan, developed by Henry Clinton Morrison provided learning activities to be carried out in the classroom laboratory. His plan included units prepared for various learners' needs. The units provided for pretesting, teaching, testing, revising the procedure, teaching again, and retesting. These steps were continued until the material was mastered. (Saettler, 1968) This is very much like the learning activity packets used by educational technologists of today except that Morrison had the entire group working on units together. Each individual's unit was geared to his own learning level but the group usually began and ended units together.

Kurt Lewin's cognitive field theory of learning has strong implication for educational technology. His statement that "A teacher will never succeed in giving proper guidance to a child if he does not learn to understand the psychological world in which the individual child lives" (Lewin, 1951, p. 62), is certainly relevant to educational programs being developed today, and current educators heed that idea.

B. F. Skinner's operant conditioning is related to the connectionism advocated by Thorndike. He feels that reinforcement is extremely important in learning. He believes that learning programs should be developed in very small

units so that the project is not formidable to the learner and he will be reinforced quickly upon learning. His ideas were important to the programmed instruction of the 1950's and 1960's. (Lange, 1971)

Paul Saettler in his work of 1968 stated that he found a lack of agreement in the literature upon educational technology concepts and "absence of a synthesis of these concepts into a general theory or theories of instruction that might be tested by empirical research" (p. 74). He seemed to feel that early concerns for teaching without regard to learning concepts had swung full tilt in the opposite direction and too much concern was being devoted to study of learning theories. In the twelve years since the publication of his book some of his concerns have been given attention.

Researchers during the 1970's have continued to be concerned about learning theories, but they have also sought effective methods of instruction. (Wittrock, 1977) Much has been done in the area of instructional development, and this can lead the way for better instruction and more efficient learning. Studies in visual literacy and techniques related to it are helping teachers and students alike. Studies of brain lateralization have shown educators ways to effective teaching in some cases that had previously been serious problems. Interest has been renewed in imagery and it is being utilized by educational experimenters for possible insight into learning. Saettler's idea that instruction has

been neglected by those who do research in learning seems incorrect; every new bit of knowledge that is found about learning makes possible some innovation in instruction as well.

Educational theories related to educational technology seem to have developed sufficiently in this country to prove a certain maturity for the profession. A body of knowledge has been developed that shows there exists a segment of the field of education which analyzes the problems of teaching and learning and scientifically manages the solutions to those problems.

The educational developments discussed thus far in this chapter provide the theoretical basis for the development of educational technology. They show how educators in a variety of settings have concerned themselves with the training of the students of their communities and how ideas of the meaning of education have changed. We look at these developments and realize that educators today have some ideas in common with those who lived as long ago as the fifth century B.C. Points mentioned for each person or group were chosen because they seem relevant to the concerns of this study. Educators have long wished to provide what they conceived to be proper training for young people of their time and thereby to improve the quality of life for all citizens of their time. In the remainder of this chapter, a chronology of events will be given that can trace their theoretical origins to the developments already discussed.

Historical Events in Educational Technology

Audiovisual instruction is generally accepted as the forerunner of educational technology, and the first instances of this occurred as early as the seventeenth century with the use of Comenius' Orbus Pictus. There were possibly earlier instances of visual aids used in instruction but the major happenings in the field have come since that time. The twentieth century will be given chief consideration here.

School museums were established in some school systems in the United States early in this century to distribute instructional media to the schools. St. Louis established the first in 1905. Art objects and models were placed in the museum, a curator was hired, and a horse and wagon delivery was made weekly to the St. Louis schools. A catalog of the museum contents was printed and made available to St. Louis teachers. The second museum of this type to be established was in Reading, Pennsylvania. It was developed largely by Levi W. Mengel after a visit to St. Louis. In Reading during the period from 1909 to 1911 illustrated lectures were developed using lantern slides that were borrowed from the Philadelphia Commercial Museum. Soon the Reading museum established its own slide collection, and in 1913 their board of education authorized the addition of an art gallery to their museum. (Saettler, 1968) Few other museums were established by school systems, but in

many places private and public museums were utilized as part of instructional programs. (Ramsey, 1938)

Films were utilized for educational purposes in the first quarter of the twentieth century; usually these were films not developed specifically for education. In the 1920's a division was made between the entertainment and the educational films. Educators feared the moral effects of the entertaining films in the classrooms and the film producers did not want competition from educational filsm to affect their box-office receipts. Therefore, most educational films were made in a dull illustrated-lecture pattern. Educational values could not be denied from some films produced for entertainment, so old commercial films that had been junked were often reworked for school use. Other sources of films for schools were advertising films, government films and some films prepared especially for school use.

Interest in use of films increased and film distribution agencies came into existence. Some of these were in state departments of education, some in colleges and universities, public or school libraries, governmental agencies, or in some instances commercial rental libraries. As early as 1917 some school systems established film libraries in their schools.

During the twenties books were written on proper use of films in the classroom. Examples were Motion Pictures in the Classroom by Ben D. Wood and Frank N. Freeman, Motion

Pictures in History Teaching by Daniel C. Knowlton and Tilton J. Warren, and Motion Pictures for Instruction by Andrew Phillip Hollis. College courses were developed for teachers concerning that topic also. "Probably the first course in visual instruction offered for official credit was given at the University of Minnesota in 1918 by Albert M. Field. Other early visual instruction courses were offered at the University of Kansas and North Carolina State Teachers College in the fall of 1921" (Saettler, 1968, pp. 131,132). Visual instruction received greater emphasis in education because of the popularity of films. Use of films and their effectiveness as training aids in World War I had added to the impetus. Two groups were especially interested in promoting visual education; social workers and imaginative educators saw the possible instructional value in visual education, and commercial producers and distributors of visual wares envisioned a profitable market for their materials.

Professional organizations on visual education were established beginning in 1919 with the National Academy for Visual Instruction and the American Educational Motion Picture Association. The National Academy of Visual Instruction was established in 1920 as a result of action taken by the Department of Superintendence of the National Education Association. The organization merged with the Department of Visual Instruction of the National Education Association in

1932 (which had been established in 1923.). The Visual Instruction Association of America was organized in 1922. This association lost its national standing in the late 1920's and became the New York City Visual Instruction Association; it merged with the Department of Visual Instruction of N.E.A. in 1932 along with the National Academy of Visual Instruction.

At the 1922 convention of NEA Will Hays, president of Motion Picture Producers and Distributors of America, Inc., pledged the resources of the motion picture industry in support of visual instruction. The NEA president appointed a committee to cooperate with MPPDA; the committee chairman was Charles H. Judd. This committee studied films to assess their educational value and surveyed the administration of visual education throughout the United States.

The Judd Committee reported to NEA in 1923. That report suggested that a clearing house of visual education be formed; as a direct result the Department of Visual Education of NEA was established. The committee revealed that visual education was receiving inadequate funding, that administrators of visual eduction had no communication with each other for comparison of methods and administrative techniques, that there was no national uniformity in visual education practice. Judd asked that the NEA Committee on Cooperation with MPPDA be discontinued and a new committee be appointed. He suggested that the new committee should

not attempt any plan of picture censorship and that the committee not give approval to any apparatus or plan for scenarios or films. The committee was continued in spite of his suggestion, but Judd withdrew from it. The committee worked closely with Eastman Kodak Company and the committee chairman became director of the Eastman Teaching Films Division in September of 1926. The committee was dissolved in 1927.

In 1932 the three still existing national visual education organizations merged and continued as the Department of Visual Instruction of the National Education Association. The two which joined the Department of Visual Instruction were the National Academy of Visual Instruction, which did not allow individuals with commercial affiliation to vote or hold office, and the Visual Instruction Association of America, which permitted active membership for commercial representatives and educators alike. The conflict of commercial versus professional interests and some concern that the academy was dominated by colleges in the Midwest created problems which threatened to block any merger attempts. J. W. Shepherd of the University of Oklahoma was one of those working for unity in the professional organization; he felt that the National Academy should be the organization to receive full support. (Shepherd, 1922) The Visual Instruction Association of America voted to change its name to the Metropolitan New York Branch of the National Academy of Visual

Instruction and changed its constitution and bylaws as necessary. In the summer of 1931 the Department of Visual Education of NEA approved the suggested merger with the National Academy. In February of 1932 the National Academy membership approved the merger also. A merger of the two organizational publications, Visual Instruction News and Educational Screen, was voted at the same time.

Courses in visual education had begun in teacher education programs about 1920, but following the professional organization merger and in response to rising interest, greater emphasis was placed on such programs. A survey was made in 1922 by Anna Dorris, an educator from San Francisco State College to find out what teacher education programs were being offered in visual education. A subcommittee of the Judd Committee made a nationwide survey in 1923. Twenty-one institutions offered visual instruction courses, usually in summer sessions. Conferences of teachers of visual instruction were reported in a few places. The State Department of Education in Michigan gave short courses to teachers concerning proper use of films in teaching and instruction in operation and care of projectors. Training in visual education was considered important but not all educators agreed on the approach. Some argued that visual aids that were helpful in a subject area should be taught in that course. For example, a course in geography would instruct prospective teachers in proper use of maps and globes. Others

felt that a comprehensive course in utilization of all available types of visual aids should be taught. The number of course offerings across the country continued to grow.

State departments of education supported the visual education movement by establishing visual instruction divisions. Many of them served as lending libraries, provided financial support and leadership, offered in-service training to teachers, and obtained certification laws for visual instruction. (Saettler, 1968, p. 143) Some states began to require all teacher certificate applicants to show evidence of a course in visual education.

Increased interest in visual education on teacher education in this area led to publication of journals, textbooks, and guides in the field. Educational Screen was the first official organ of the Department of Visual Instruction of NEA, but it had been in existence for ten years before the merger which produced the strong organization for visual education. Visual Instruction News began in 1927 and in 1932 was combined with Educational Screen. The twenties and thirties saw the publication of a large number of visual instruction texts and guides. Among those that were particularly significant were Motion Pictures in Education by Edgar Dale, F. W. Dunn, C. F. Hoban, Jr., and E. Schneider and Visualizing the Curriculum by C. F. Hoban, C. F. Hoban, Jr., and S. B. Zisman.

During this same time period radio came into use as

an educational tool. Especially in the 1930's it was used for current events programs, music and art appreciation, storytelling, and some special courses taught by radio. (Lange, 1971) A great many educators felt that radio was just a fad and would not be practical for instructional programs. Those who felt it was important to education persisted in their efforts to utilize the medium effectively. Educational radio stations were established at colleges and universities in many states. Some uses of radio have remained a part of educational technology, but by the end of the 1930's its influence was declining.

At this point in the development of visual instruction world events brought about the end of an era with the onset of World War II. Many technological developments during the war years affected the audiovisual instruction movement which came after that time. The development of training aids and devices and the effectiveness of motion pictures, graphics, etc., during the war opened many avenues for instruction that were explored later by educators.

Following World War II the increase in interest in audiovisual instruction continued to escalate gradually until 1955. Since that time there has been dramatic growth and change. Such things as language laboratories, teaching machines, and television course offerings have been utilized. Multimedia instruction has gained prominence. Computers have been introduced into instruction. Educators in

the field decided that the profession should concern itself with learning theory and take a hard look at terminology being used.

Teacher education in audiovisual instruction has grown and evaluation of such programs has received emphasis by the professionals in the field. The 1958 Lake Okoboji (Iowa) Audiovisual Leadership Conference led to a whole issue of Audiovisual Instruction in 1959 on teacher education. In 1965 William R. Fulton of the University of Oklahoma developed an appraisal instrument for educational media programs in elementary and secondary schools as well as in colleges and universities. He identified six elements as essential to an adequate educational media program. Saettler (1968) lists them as follows:

(1) administrative commitment to a system-wide or institution-wide educational media program;

(2) educational media as an integral part of curriculum and instruction;

(3) an educational media center;

(4) adequate physical facilities for the use of educational media;

(5) an adequate budget for the educational media program; and

(6) an adequate educational media staff. (p. 185)

Such evaluative assessments of the field were important to promote professional improvements.

Graduate programs in audiovisual education grew in number during the fifties and sixties and concern for professional certification for audiovisual personnel increased. A few states established certification requirements; one of the first was Indiana. Their credential was presented to the Committee on Professional Education of the NEA Department of Audiovisual Instruction (so named in 1947) and approved in 1952. Recommendations were made following that action for DAVI to urge state groups to establish certification requirements for audiovisual directors and for DAVI to offer assistance by supplying a suggested pattern for certification.

With the change to audiovisual education came new textbooks as well. Notable examples of these works published in the sixties and seventies are AV Instruction by James W. Brown, Richard B. Lewis, and Fred F. Harcleroad; Administering Educational Media by James W. Brown and Kenneth D. Norberg; and Audio-Visual Materials: Their Nature and Use by W. A. Wittich and Charles F. Schuller.

New professional periodical publications also have come out of the audiovisual movement. AV Communication Review began publication in 1953 as an organ for publishing audiovisual research reports. This continued until the 1970's when Educational Communication and Technology Journal took over the responsibility. Instructional Materials was begun in 1956, but there was argument over its title which was

changed in less than six months to Audiovisual Instruction. This publication changed its title again with the first issue in 1980 to Instructional Innovator.

Some audiovisual personnel and library educators have made efforts to combine the collection and distribution of audiovisual materials and books. As early as 1947 a grant supported a film advisory service at ALA to demonstrate that public libraries could serve as centers for distributing audiovisual materials as well as books. (Saettler, 1968) In 1969 the American Association of School Librarians and the Department of Audiovisual Instruction cooperatively published Standards for School Media Programs. This was a significant effort toward unification of the two groups. In 1975 a revised version entitled Media Programs: District and School was sponsored by the American Association of School Librarians and the Association for Educational Communications and Technology (the new name for DAVI). These standards offer realistic goals for school media programs that might enable educational technologists and librarians to work together in utilizing the media available for educational programs.

Educational technology is a field that has been growing from small beginnings for many years. It has sound theoretical foundations and is gaining professional maturity. The professional educators who are educational technologists are people who wish to solve the mystery of "good" education.

Their scientific approach to solving the mystery may be the answer. From the time when some teacher saw the value of using pictures and real objects along with textbooks to the present situation in which we find teachers inundated with media in a multitude of formats there has existed a need for knowledge of the best way to utilize the available materials. There has always been a need to understand what learning is and how each student can accomplish that task most effectively. Educators have specialized in many aspects of education. Some choose to work with those who are just beginning their formal education, some with those who have their basic education and are training for a profession. Some choose to reveal the logic and order of mathematics to their students and some the varied traits of humanity as found in literary works. Educational technologists choose to help the teachers and the learners perform efficiently and effectively the learning that both want accomplished. Theirs is a broad field and it promises to gain in importance in the future.

CHAPTER IV

HISTORY OF SCHOOL LIBRARIANSHIP

As was mentioned earlier in this report, histories of school librarianship do not exist, but the profession may be studied through research on school libraries. The development of school libraries has also shown development in school librarianship. Here, as in chapter three, the intent of this report is a sampling of relevant excerpts from school library history that have proven of worth to this study. A complete survey of school library history is beyond the scope of this report.

School libraries have, for the most part, developed significantly only in the twentieth century, but a historical study shows that in much earlier times there were a few isolated examples worth mentioning. A school for scribes was a part of the temple library of Assurbanipal in Assyria about 650 B.C. This school had a library containing textbook tablets and reference sources. Schools in Greek cities in the time of Plato also are believed to have had libraries for reference sources. In the late seventeenth century, some

private schools in Great Britain began libraries. (Johnson, 1970) Examples can be found of other school libraries which were in Europe before the twentieth century, but there too most of the development has occurred in this century.

In the United States the first school libraries were apparently those associated with private academies. Most secondary education up to the middle of the nineteenth century in this country took place in such institutions. There were chiefly gift collections of books in the academies; no selection seems apparent from the remains of some that survived or from the new printed catalogs that have been found. The librarians in the academies were faculty members who had no special training in the organization of materials. The teachers' own private collections of books were shared by the students and probably were better suited to their educational needs than the school's library. (Johnson, 1970)

During the early nineteenth century a number of Americans traveled in Europe seeking ideas for education. Horace Mann was particularly impressed with the schools in Prussia where the influence of Pestalozzi was evident. All of the Americans returned home with educational ideas that influenced the development of school libraries. They realized that teaching reading to young people was not fully effective unless suitable materials were available for those students to read. In order to provide such materials school libraries were needed.

One attempt to provide school libraries came with the school district libraries. In 1835, in New York, a law was passed "which permitted the voters in any school district to levy a tax to begin a library, and a tax of $10 each succeeding year to provide for its increase" (Cecil, 1940, p. 42). Few districts took advantage of the opportunity. In 1839 the legislature of New York provided $55,000 should be set aside for district school libraries. The towns wishing to receive money from these funds must raise a like sum for the same purpose. This resulted in considerable growth of school district libraries. In 1843 school districts were authorized to utilize library funds for purchase of school apparatus and even for payment of teachers' salaries. The only limitation on such use of funds was that "each district containing more than fifty children between five and sixteen years of age should have a library of not less than 125 volumes" (Cecil, 1940, p. 43). This change in the way the funds could be used brought great interest in establishing school district libraries. Until 1853 there was much growth in their number.

No provision had been made for the supervision of the school district libraries and their books disappeared in great numbers. By 1875 the New York Superintendent of Public Instruction was convinced that the monies were not being used as was intended and the libraries were ineffective. He recommended that the law providing the funding be repealed.

States other than New York were trying the same kinds of action about the same time. In Massachusetts Horace Mann, in his position as the first secretary of the first board of education in the United States, influenced the legislature to pass permissive legislation similar to New York's for establishment of school district libraries. Here too very few districts took advantage of the legislation. Mann wrote in his 1839 report of his feelings concerning school district libraries; he hoped to see a school library in every district in Massachusetts. In a number of lectures he also spoke of the importance of reading and school libraries to the success of education. (Mann, 1845) He aroused interest among many people of the state and school district libraries were established in increasing number until 1843. From that time until 1849 the applications for state aid gradually decreased. In 1850 the legislation which had led to the establishment of school district libraries in Massachusetts was repealed.

By 1876 nineteen states had established school district libraries, but the movement was considered a failure. Important to its failure were the lack of organization of the libraries and the lack of trained librarians to supervise them. The school district libraries attempted to serve the students as well as the citizenry of the school district and they served neither group well. When this effort proved unsuccessful, public libraries were given support and they

were to serve both school and community in most places.

In 1876 a number of important things occurred in the field of librarianship. The first government report on the history, condition, and management of libraries in the United States was published. It publicized the need for libraries and gave information helpful for further library development. The American Library Association was begun in a conference held in Philadelphia. It was the first national organization devoted to the purpose of library development, and it has played an important role in the development of all types of libraries including school libraries. Also in this year Library Journal began publication; it was the first United States periodical devoted to librarianship.

The last quarter of the nineteenth century brought changes in the teaching of reading which emphasized the need for libraries. The method and materials generally used in the United States at that time seemed less sensible to many educators than the teaching they had observed in Europe based on Pestalozzian principles. Under the European system there was emphasis on realistic material for object and science teaching. The McGuffey readers appeared and they were planned for specific grade levels. They also contained literature. At this time educators decided one aim of teaching reading should be to stimulate students to enjoy literature and to develop a lifetime habit of reading for pleasure. (Cecil, 1940)

Johann F. Herbart was affecting education in the United States about this time also. One of his ideas was that reading history and great literature would develop the understanding of learners. He felt that developing moral character was the chief goal of education. (Meyer, 1972) Based upon these Herbartian principles many books were published for the purpose of supplementing textbooks. These ideas of Herbart's made many educators see the need for libraries in schools.

Since the school district libraries had disappeared in many places, those who were most concerned about library service for schools began to look toward public libraries for provision of such service. Charles Francis Adams, Jr., in Quincy, Massachusetts, prepared a paper in 1876 and presented it to teachers of the town in which he advocated unification of the town libraries with the high school and upper level grammar school grades. He suggested that this combined unit be called "A People's College." His suggestion was widely discussed by educators and librarians. (Bostwick, 1914) Public libraries throughout the country began to extend borrowing privileges to teachers and students, to encourage class visits to the library, and in other ways to add interest to school work.

In 1896, John C. Dana, president of the American Library Association, presented a petition to the National Education Association asking that a department of NEA be

established to assist in forming policies for future school library growth. The petition was granted. (Dewey, 1896) The American Library Association also appointed a committee to cooperate with the library section of NEA. Both associations gave considerable attention in the following few years to the relationship between public libraries and schools. "The importance and value of books in the child's education was now generally accepted by educators and librarians alike. Many differences of opinion existed, however, as to methods by which these books could be made a part of his education. But the groundwork for future school library development had been laid" (Cecil, 1940, p. 54).

Educational changes that occurred in the first twenty-five years of the twentieth century had great impact on school libraries. John Dewey's laboratory school where his ideas of pupil freedom were practiced was quite a departure from other schools of the time. The Winnetka Plan, another experimental system, emphasized individualization of instruction. Its emphasis upon reading required a wealth of library materials. The Dalton Plan which allowed students to work at their own pace also called for abundant library material to be available for student use. Even in classes being taught in a more traditional manner teaching methods were changing and such changes as use of the project method and supervised study made library materials essential.

With the general agreement between educators and

librarians that library materials should be readily available to students came a controversy over how this service should be administered. Most agreed that the books should be in the schools, but there was disagreement over whether the school should purchase its own books and supervise its own library or whether the public library should furnish books and perhaps supervise the library. This point was argued for a number of years, and in some places schools had their own libraries, but in others public libraries operated libraries in schools. (Johnson, 1970)

In cities that chose to have public library branches in their schools problems arose that eventually led to the establishment of separate school and public libraries. Faculty members felt that selection and direction concerning the use of materials related to the curriculum should be done by faculty not by librarians who had no teacher training. Library staff members often felt isolated because of their exclusion from faculty meetings, etc. School boards and library boards had some differences over costs and budgeting. Separate school and public library systems were finally determined to be the better choice.

Libraries established in elementary schools were generally classroom libraries. The concept of the self-contained classroom included provision of library materials. Books were selected specifically for the various grade levels. Teachers felt that books readily available in the classroom

would encourage children to read and develop a taste for good literature. (Cecil, 1940)

The organization of secondary schools made a central library the best type, and libraries were accepted as a regular part of the school. Before 1876 most secondary schools had some kind of library, but in the government report on libraries, published in that year the statement was made that:

> most of the collections belonging to the schools in different states are of a miscellaneous character, mainly consisting of gifts of individuals.... The schools are for the most part without library funds, although in many instances means have been afforded to make selections that would aid students in their courses of study. (U.S. Bureau of Education, 1876, p. 58)

State funding for school libraries began about 1890, but differences in legislation as well as ideas of what type of organizational structure secondary school libraries should have led to different types. Some high school libraries were part of a system of school libraries, some were independent, and some were branches of public libraries. The most common type was the independent library.

In a 1913 report on development of secondary school libraries Edward D. Greenman of the United States Office of Education commented on the quality of the secondary library collections:

> Secondary school libraries are weighed down with books long since out of date or with antiquated books.... Most of them are small collections of reference and textbooks, poorly quartered, unclassified and neither catalogued or readily accessible for constant use. (p. 185)

The number of high school libraries had increased by that time, but the service given was unsatisfactory in many of them.

Educators who had come to support the need for libraries as part of effective education recognized the need for improving and standardizing library service throughout the United States. In 1912 at the NEA conference the Committee on the High School Library emphasized the need for changes in the organization and administration of the school library. This report also expressed an enlarged conception of the functions of the school library and the need for trained personnel to supervise the library. Questions were raised as to what actually constituted good school library service.

> Experience had conclusively proved that a collection of unorganized books did not constitute an effective school library. Something else was lacking, too, and that missing link was now seen to be service. Whether the books were owned by the school or furnished by the public library became a matter of secondary importance. Books must be provided but

> with them librarians to organize and motivate their use in the functioning of the school program. (Cecil, 1940, p. 63)

The need for standards as guidelines became critical.

In 1915 the Library Committee of the Department of Secondary Education of the NEA was organized and began a survey of library conditions. Working with another committee from the North Central Association of Colleges and Secondary Schools this group prepared a report entitled Standard Library Organization and Equipment for Secondary Schools. This report is often referred to as the Certain Report because the committee chairman was C. C. Certain; it was the first attempt at standardizing school library practice in the U.S. The report was approved by the Committee on Education of the American Library Association in 1920 and it was published by ALA. These standards were helpful to school administrators who wished to evaluate their school library services. Standards for elementary school libraries appeared in 1925.

Following the publication of standards various educational and library groups studied school library problems. The American Library Association had founded the School Libraries Section in 1915 and in 1936 established the School and Children's Library Division. Several groups of educators had studied library service in schools. (Johnson, 1970) The groups involved decided that although the quantitative standards prepared were helpful, attention should be given

to qualitative standards as well. The Cooperative Study of Secondary School Standards was begun in 1933 and criteria were published for qualitative evaluation. Although the criteria were necessarily subjective, they were helpful to the school systems that utilized them.

Attention to the quality of school library service led to a restatement of standards in 1945. School Libraries for Today and Tomorrow tied the quality of service to the quantitative requirements of qualified personnel and abundant printed and audiovisual materials. These standards were published at a time when school libraries had been feeling the pressures brought on by World War II. Population shifts and emphasis on training specialization affected school libraries as well as other social institutions. Greater appreciation was shown by educators to the importance of libraries in effective school programs. More money was often available to support them, but librarians were in short supply. The 1945 standards were implemented slowly. State and local governments seemed unable to provide the desired quality library service in all their schools.

Federal aid to education seemed to be the answer to funding of effective programs. In 1958 the National Defense Education Act was passed. The legislation did not refer to school libraries, but its funding of mathematics, science, and foreign language programs caused purchase of library support materials for the programs involved. (Lange, 1971)

The Vocational Educational Act of 1963 gave the same kind of help for school libraries.

Direct aid for libraries came with the passage of the Elementary and Secondary Education Act in 1965. This has provided extensive funding for all instructional media now included in school libraries. Title III of this act allowed establishment of new school libraries providing services not previously offered. (Davies, 1979) ESEA was a landmark in the development of school libraries. Many schools with little or no library service improved their situation from its benefits.

The Higher Education Acts of 1965 and 1966 have provided funds for education of school librarians. (Johnson, 1970) Many institutes and experimental programs have been funded as a result of this legislation. This has provided personnel for proper staffing of large numbers of school libraries. The increased funding for library services had also increased the demand for school librarians, so a shortage still existed.

In 1960, Standards for School Library Programs was published. This set of standards included philosophical statements about education and the role which should be played in it by school libraries. They also gave quantitative and qualitative statements in regard to the kind of school library service that should be given. Abundant printed and audiovisual materials were cited as necessary.

Concern with integrating audiovisual materials into school libraries led to consideration of changing terminology. Instructional materials center was the term used by some to designate the new concept of multimedia services in school libraries. Exchanges of ideas with audiovisual professionals led to talk of cooperation or even perhaps merger involving the audiovisual and school library professionals. Standards for School Media Programs was produced by joint efforts of the American Association of School Librarians and the Department of Audiovisual Instruction of NEA. In these standards new terms such as media program, media specialist, and media center were introduced and explained. It was hoped that this jointly published document would begin a new era of media services to schools provided by librarians and audiovisual specialists working together.

Following publication of the 1969 standards much discussion among professionals in library and audiovisual fields ensued. Some praised the joint effort, but others were highly critical. The majority agreed that further work was needed in order to present definitive guidelines for media programs. The American Association of School Librarians and the Association for Educational Communications and Technology (formerly the Department of Audiovisual Instruction of NEA) continued cooperative efforts.

Another statement of standards was published in 1975. This too was a jointly published document prepared by AECT

and AASL. Media Programs: District and School emphasized qualitative goals aiming for exemplary educational experiences for young people. They emphasize user-centered programs that are derived from well-articulated learning and program objectives. The professional organizations continue to seek ways of cooperating. At the ALA conference in Dallas, Texas, in 1979, the AASL Task Force on Cooperation asked for a joint committee from the two groups (AECT and AASL) to work on further efforts. This indicates that problems still remain to be solved.

School libraries in the seventies have been increasing their services in the schools they serve. (Davies, 1979) Increased funds from ESEA have continued to supplement state and local funding for school libraries. Parents, teachers, and administrators have become more aware of the importance of school libraries in the curriculum. Today's typical school library is a multimedia materials collection; it contains equipment for utilization of microforms, films, filmstrips, audio and video recordings and for production of locally made instructional materials.

The school librarians who staff today's libraries are prepared as teachers and librarians. Certification for school librarianship has included professional education preparation since certification began. (Cecil, 1940) School librarianship involves working with teachers and students in situations that make knowledge of curriculum,

teaching methods, and learning styles imperative. It also requires the basic preparation for librarianship that is necessary for a librarian in any type of library. Certification requirements are varied throughout the country, but some attention is given to these basic needs in all certification programs.

In 1976 the AASL Certification of School Media Specialists Committee published Certification Model for Professional School Media Personnel. This document came as a result of the professional group's concern with the changing demands made on staffs of school library media centers. They recognized the need for guidance at the national level for the various states that were attempting to update their certification requirements for media personnel. They allowed for great flexibility of method but prescribed rather definite areas of competency which they felt should be included in state plans. "The seven areas of competencies within this model are: 1. Relation of Media to Instructional Systems; 2. Administration of Media Programs; 3. Selection of Media; 4. Utilization of Media; 5. Production of Media; 6. Research and Evaluation; 7. Leadership and Professionalism" (p. 9).

The influx of new material formats has caused attention to be given in particular to utilization of multimedia and to the preparation of locally made instructional materials. There appears to be a trend toward some unified plan

of certification that will combine school librarian certification with some kind of audiovisual specialist certification. Several states have this already and more are working toward that goal. Today's school librarian who is best prepared for the position will be a generalist with education and library science background.

CHAPTER V

RELATIONSHIPS BETWEEN THE FIELDS: PAST AND PRESENT

These briefly summarized highlights of the history of educational technology and of school librarianship, will be followed by examination of the two on a comparative basis in regard to the questions raised at the outset of this report. These questions have been major concerns as the study of the histories was pursued. They seem to be questions which have not been dealt with in a direct form in the past.

1. What were the objectives of each field at its inception?

To answer this question a definite time of inception must be established for each field. The historical literature of both fields shows this to be difficult. For the purpose of this report, a time will be chosen that seems reasonable.

Educational technology has beginnings that go far back into the history of education, but the discipline itself did not begin to emerge until the late nineteenth century.

At that time educators became aware of the importance of non-verbal teaching and learning possibilities. School museums were established in some school systems in the early twentieth century. (Saettler, 1968) These museums represented the first organized efforts by school systems to provide art objects and other realia for classroom use.

The objectives of the school museums will be accepted as the objectives of educational technology at its inception for the purpose of this report. Those educators who advocated the establishment of school museums were recognizing students as individuals and seeking ways of making education more meaningful for them. They felt that varied learning experiences might be helpful and that materials other than books would help to provide such experiences. Cooperative efforts of museums not associated with the school systems began this endeavor. Museums in numerous cities, among them Philadelphia and New York, established special tours and lectures for classes and sometimes allowed collections to be borrowed by classroom teachers for use in the schools.

The establishment of museums by school systems indicated the importance of the service as seen by leading educators. Having a museum as part of a school system allowed its contents to be utilized more effectively in the educational program of the system than the earlier cooperative efforts had allowed. It was suggested that:

The collection should include photographs, pictures,

> casts, models, lantern slides, charts, stuffed birds, birds' eggs, insects and other zoological objects; as well as geologic, mineralogic, ethnologic, and agricultural specimens, and products of manufacture and industrial art. (NEA Fiftieth Anniversary, p. 227)

The chief objectives of these museums were to supplement the materials supply for teachers and to enrich the learning experiences of the students. These objectives can well be given as the objectives of the field of educational technology at its inception.

There were no designated educational technologists on the scene to give the scientific reasons for the success in learning that was experienced by some students with the addition of school museums in certain systems, but those who worked with the museum objects were impressed with what they added to education. Frank N. Freeman, in his Visual Education published in 1924, commented that before 1900 changes were made in education on grounds of opinion and that since 1900 scientific investigation has been utilized. The ideas that led to school museums came prior to 1900 and they probably were based chiefly on opinion, but scientific investigation has since proved that the museum idea (not the organization) offered valid improvement to education.

School librarianship and school libraries began as soon as there were designated libraries within schools. Often the assignment of a librarian was considered of

negligible importance and many libraries had none. The failure of the school district library movement during the nineteenth century was attributed in part to poor organization and supervision of libraries due to lack of trained personnel. (Cecil, 1940) By the late nineteenth century school librarianship was considered important; this will be considered the inception of this field.

The objectives of school librarianship in its early stages were to provide supplemental instructional materials (chiefly print), to organize and make accessible the library materials, and to enrich the educational program for both teachers and students. Attention was given to selection, acquiring, and making accessible suitable materials for the students in the school involved. (Fargo, 1930) This concern with materials was appropriate in order to counterbalance the neglect of materials earlier. The first advocates of school libraries had failed to realize that wise selection of materials and careful supervision of their organization and use were almost as important as obtaining the funding for a library collection.

Librarians agreed with the educational theorists like Herbart who felt that good literature must be made available for use of those who were students. An objective of school librarians was the encouragement and guiding of the reading done by students. They tried to insure that high quality literature was in the collection so that such

material would be read by the students. (Fargo, 1930)

Much of the librarians' time had to be spent on organizational chores. No printed cards were available in the late nineteenth and early twentieth century school libraries. The librarians had to make (usually by hand rather than on that new machine called a typewriter) the catalog cards for all materials in the library. The processing of books for use and the necessary record keeping added to the load of detailed work with materials that kept the school librarian busy. Service to teachers and students, including reading guidance for recreational activity, was considered more important than the mechanics of operating the library, but in some cases service suffered because of the work with material organization and supervision.

2. How have these objectives undergone change through the years?

The objectives in educational technology have expanded in scope considerably since the days of the school museums. The objectives from that time have not been abandoned but the main focus of educational technology has changed. No longer is the objective to supplement and enrich learning experiences planned by other educators but to design in a scientific manner, along with other educators, instructional programs and learning experiences that will help educators and learners alike to accomplish desired results.

The changes came gradually. The realization that

audiovisual materials were very effective in improving learning experiences led to scientific investigations concerning which media might be most effective in certain teaching situations. Much attention was given for a time to instructional methods. Teachers who were to use these methods needed expertise in using the necessary equipment, and audiovisual courses were added to teacher education. These courses emphasized the operation of equipment and its use as an adjunct to teaching.

Experimentation with the mechanical possibilities offered by such developments as teaching machines, television, and computers has sparked a variety of innovations in teaching. They have led educational technologists through some unsuccessful efforts but have provided enough success to show great possibilities for current education. Some of these experimental efforts have shown that too little concern with learning was going into these teaching experiments.

Because of this revelation, educational technologists turned their investigative efforts toward an understanding of learning. Cognitive styles have been studied. Learning techniques of various people have been analyzed. Hardly an aspect of learning and the problems of the learner has gone unnoticed. (Wittrock, 1977) Some educators have felt that this emphasis was extreme and that the total picture of education should be their concern.

Most recently attention has been returned to the

total picture of education. Educational technologists now consider the objectives of the field to be the process of analyzing problems involved in all aspects of human learning, of devising solutions to those problems, and of implementing the solutions through learning resources of all kinds. (AECT, 1977) This comprehensive statement of objectives includes the original objectives of the field, but it shows the coming to maturity of a profession whose goal is to assist all instructors and learners in achievement of their individual goals.

The objectives of school librarianship have also expanded from those of the nineteenth century. (AASL-AECT, 1975) School librarians still want to provide supplementary materials for teachers and students and also to make these materials easily accessible to those who need them. The materials which they select are no longer limited to print materials; the materials are made accessible with less personal effort on the part of the librarian; and utilization of the materials is given greater attention than in the past.

Inclusion of nonprint materials in school libraries was suggested as early as the 1920 standards.

> The library should serve as the center and coordinating agency for all material used in the school for visual instruction, such as stereopticon slides, moving picture films, pictures, maps, globes, bulletin board material, museum loans, etc.

> Such material should be regularly accessioned and cataloged, and its movements recorded, and directed from the library. (Committee on Library Organization Report, 1920)

Even before this statement a report to NEA on school museums had indicated that the museum should be under the general supervision of the library (NEA Fiftieth Anniversay Volume, p. 227). School librarians in the twentieth century have considered all instructional materials suitable for inclusion in the school library. With changes in teaching methods and newer media appearing on the market, the changed formats of material have increased greatly.

Organization of library materials now requires less personal effort for librarians. Printed catalog cards and pre-processed books make it possible for materials to be put into circulation with little work by the library staff. This allows librarians to devote more time to service aspects of operating the library. This has brought a significant change in the implementation of the objectives of school libraries; more time is given to assisting and guiding students and teachers as they use the materials. Librarians offer their expertise in utilizing library sources to teachers as they plan their instructional programs and to students in carrying out class assignments or pursuing personal interests.

Librarians often serve on curriculum committees and

as members of teaching teams in their schools. (Wehmeyer, 1976) Their knowledge and skill in the location and utilization of various information sources make them of great value to these groups. These are relatively new roles and add to the objectives of current school librarianship. The teaching aspect of the profession is receiving much attention today. The preparation for school librarianship includes enough professional education to give the librarian the status of educator as well as librarian. In this sense school librarianship fits the special library role because it requires expertise in two professional areas.

3. What special approaches have been utilized in each field to accomplish their identified objectives?

In educational technology the accomplishment of objectives has come through the introduction of innovative materials and teaching methods. The early objectives were to supplement and enrich the educational process in their schools. The educational technolgists of the time (though not so identified) were those teachers whose foresight showed them the importance of varying the traditional teaching methods by experimenting with addition of non-print items to their teaching and with newer methods of imparting knowledge to their students which involved technology. Success by innovators inspired other teachers to try the newer ways also. The educational technologists found

themselves in the role of leaders and instructors of their fellow teachers. They also received criticism from some educators who were loath to try any new ideas.

The educational technologists also promoted their interests through professional organizations. At NEA conferences in the late nineteenth century reports were made dealing with museums and visual education. In the first quarter of the twentieth century formal organizations were established. The National Academy for Visual Instruction and the American Educational Motion Picture Association began in 1919. A Department of Visual Instruction of NEA was established in 1923. The name of this department of NEA was changed to Department of Audiovisual Instruction in 1947 and in 1970 became the Association for Educational Communications and Technology. The professional associations have been effective in encouraging research in the field, in promoting the establishment of formal training programs in colleges and universities, in developing standards, and in development of certification requirements. The NEA and state departments of education have given substantial support to the field's development.

The publication of professional periodicals has also aided in the growth of educational technology. Educational Communications and Technology Journal (formerly AV Communication Review) publishes regular research reports of significance. Instructional Innovator (formerly Audiovisual

Instruction) is the official organ of AECT and disseminates news of the field to all members of the association. The periodicals have been changed as the field has changed; their scope and coverage reflect with a fair degree of accuracy the growth of the profession.

Educational technologists have also promoted the profession's goals through publicizing them. They have realized that it is necessary to let other educators know what the field of educational technology has to offer. They are taking the initiative in offering services such as instructional development, custom production of instructional materials, and in-service training for teachers who desire it.

These approaches have contributed to increasing maturity of the field of educational technology. As the profession has been made more recognizable and has gained respect of all educators, the realization of the identified objectives becomes more feasible.

School librarians for many years achieved their identified objectives in a way that has been somewhat detrimental to their image. They provided the supplemental instructional materials needed in their schools by practicing careful selection principles, made materials accessible by efficient organization techniques, and gave personal guidance to students and teachers as time permitted. Often the students and teachers were unaware of the efforts expended in working with the materials. Many of them felt

that being a school librarian involved very little work. Counteracting this impression of school librarianship has added to the problems of those who wish to implement the objectives of the field today.

Professional organizations have been helpful in promoting objectives of school librarianship. NEA conferences in the late nineteenth century heard reports on the importance of school libraries to education and of having trained librarians in charge of them. In 1896 NEA established a department to assist in forming policies for school library growth. About the same time the American Library Association appointed a committee to cooperate with the library section of NEA. Both these national organizations have aided school librarianship. ALA has established the group now known as the American Association of School Librarians which has been most directly involved in the professional growth of school librarianship. ALA and NEA have encouraged research and experimentation in the field, have worked on development of standards for school libraries, and have offered assistance in setting requirements for certification.

Professional library publications have been helpful in promoting school librarianship also. Publications such as Library Journal have made news of the profession available regularly; it has existed since 1876. It once contained a monthly section on school libraries which has been

separated into another publication, School Library Journal. School Media Quarterly is the official organ of AASL, and keeps the members apprised of the association's activities. Library Trends and Library Quarterly report research activities and some deal with school librarianship.

School librarians now emphasize the guidance and teaching aspects of the professional objectives to a greater degree. Current teaching methods, greater educator awareness of the need for library services, and commercial processing help have made this change possible.

Librarians too have begun to use public relations to achieve their objectives. Letting the people who are concerned know more about what services are offered has caused better utilization of those services and has helped change the image of school librarians. School librarians take the initiative in seeing that teachers utilize whatever materials are available for their particular instructional program. The librarians encourage participation by students and teachers in the process of selecting materials, offer recreational materials for their patrons, and give instruction (to individuals or classes) in the use of all materials and equipment in the library.

The approaches taken by school librarianship have contributed to the growing maturity of their profession also. The profession of librarianship is older than the school librarianship branch; this branch has really developed to

significant maturity during the twentieth century. The greater recognition of the profession by both librarians and educators has come about through such approaches to the problem as have been discussed here.

4. What special clientele have been served by each field?

The clientele of educational technology and school librarianship have been identical in many instances. The usual clientele served by both have been students and teachers in schools. The services given differ but both groups provide services that involve supplementary instructional materials.

Educational technologists have begun to provide their services to instructional situations other than in formal schools. Industries of many types are finding that instructional development and customized instructional materials make the most efficient use of funds which they expend for training their employees. This does provide a clientele beyond formal education for educational technology, but this aspect of the field is not relevant to this report.

School librarians and school libraries have at times attempted to serve schools and community citizens alike. This effort in the nineteenth century when the school district libraries were established was unsuccessful. In the past few years with inflationary costs cutting into the limited funding of a great many school and public libraries, the idea has again been suggested. When such a plan is put into operation the school librarians have a special clientele

in the adults and young people of the community who are not students. This is certainly not a typical situation for school libraries in 1980.

Since no substantial number of clientele for educational technologists or for school librarians appear to be special to that service group, the unique contributions of the groups in schools apparently are in services given not service recipients.

5. What educational requirements and/or programs have been set for the professionals in each field?

Educational technologists at present have established graduate courses of study at the master's and doctoral levels in a large number of colleges and universities. These courses of study prepare educational technologists for positions as coordinators, supervisors, or instructors of educational technology programs in public or private school systems, in colleges or universities, or in industrial education settings.

The course work involved in these programs includes production and presentation techniques using a wide variety of audiovisual equipment. Study of theoretical background of educational technology is required. Courses in such aspects as planned change, instructional development, management of educational technology systems, television and film production, computer assisted instruction, and special problem areas of educational technology are offered. Course titles

and organization vary from one institution to another, but the program content appears to be similar. Each student must take coursework sufficiently varied to grasp the full range of the field's scope.

Undergraduate courses are offered for prospective classroom teachers. These are usually media production courses designed to give the needed production expertise for classroom teachers to make use of currently available equipment and materials. Taken in proper sequence these prepare college students to benefit most effectively from the various courses in teaching methodology. Most state departments of education now require some course that gives audiovisual proficiency as part of their teacher certification programs.

In addition to college and university courses, state certification for audiovisual specialists has been implemented in most states. This certification varies greatly from state to state in its requirements. All require a certain amount of formal coursework as a basis for certification. All certified audiovisual specialists must first be certified as teachers. Some states require performance tests as part of their certification programs. Several states now have unified certification programs that combine library science and audiovisual requirements. Other states are working toward such certification.

Efforts have been underway for the past five years

in Oklahoma to achieve a unified certification plan. A joint committee representing the Oklahoma Association for Educational Communications and Technology and the Oklahoma Library Association has attempted to work out a unified plan. So far total agreement has not been achieved.

Educational requirements for educational technologists have been developed with professional integrity in mind. Those designing the programs have set the educational standards high so that students who are products of the programs will be regarded as properly prepared professionals. This has aided in the maturing of the profession.

School librarians receive educational preparation as teachers as well as librarians. This sets their training apart from librarians who plan to serve in public and academic libraries. Educators have long felt any librarian who is to work toward effective utilization of materials with students and teachers must understand teaching and learning theory.

Formal courses in "library economy" began in the late nineteenth century. Normal schools began giving short courses; Illinois State Normal had a six weeks course during the 1890's for preparation of school librarians. Their course included "selection and purchase of books, classification, cataloging, care of school libraries, and treatment of pictures, pamphlets, clippings, etc." (NEA Fiftieth Anniversary Volume, p. 219). From brief training of this type education for school librarianship has developed into formal degree

and certification programs in colleges and universities.

During the 1890's special training programs for librarians were established. Melvil Dewey's library school at Albany, New York, and the Pratt Institute in Brooklyn, New York, began providing professionally trained librarians. "Erasmus Hall High School in Brooklyn had a trained librarian in 1900, and Brooklyn Girls' High in 1903" (Johnson, 1970. p. 386). This was the beginning of graduate programs in librarianship.

Undergraduate degree programs in school librarianship exist in some colleges. In these programs a student takes basic courses in librarianship and the professional education courses required for teacher certification. The graduates of these programs have the basic qualifications for directing local school library media centers.

The majority of the training programs in librarianship are graduate programs at the master's level. A growing number of library schools are offering graduate programs leading to sixth year certificates in librarianship and also doctoral programs. Students from these programs must take professional education courses also if they wish to work as school librarians. Graduates of these programs qualify to coordinate school library systems, direct library activities in large public or private schools, teach library science in schools and colleges, and work in state departments of education as library advisors and supervisors for educational program planning.

The library science courses required include principles of materials selection, utilization of reference sources, in-depth study of materials suitable for both elementary and secondary students, cataloging and classification, administration of school media centers, and often a survey course in library history and professionalism. In addition to these basic courses special attention is often given to record keeping, automation and miniaturization, media techniques, and library activities such as storytelling.

Since about 1930 school library certification has been in existence in some places. At present all states have some kind of school library certification. The requirements differ greatly from one state to another. Practically all require a bachelor's degree as part of the standard library certification. The states which have changed to unified school librarian and audiovisual specialist certification are phasing out regular librarian certificates. Many states still have separate certificate programs.

School librarians who are products of recognized programs of study are qualified to direct local school libraries. They have the necessary knowledge of educational theory to serve as well qualified teachers and the necessary knowledge of library supervision to direct a school library media center effectively. Those who wish to move to higher positions as librarians or to become supervisors in school librarianship must complete a specialized graduate program in

education or library science.

Presently there are a few universities (the University of Oklahoma for one) which have implemented jointly planned master's degree programs in librarianship and educational technology. This allows students to obtain two master's degrees which provide in-depth preparation in the two areas, properly focused because of the coordinated planning. Such programs are good examples of the type of specialized training needed by today's school library media specialists.

6. What common elements or concerns have been developed between the two fields?

Educational technologists and school librarians have the common concern of education of the young people in today's schools. Both groups work toward the provision of effective education. Both are devoted to providing needed information in whatever medium can best transmit it. Both feel that understanding of learning theory and instructional techniques are necessary if the desired results are to be achieved. Both work with students and instructors in educational programs.

School libraries have changed from book collections to multimedia materials collections. They have been called learning centers, instructional materials centers, resource centers, and sometimes they're still called libraries. Whatever name is given to them, their collections and services have changed. In some instances audiovisual materials

collections that existed as separate collections have been incorporated into libraries. This has often brought conflict over what person would direct the center. Both librarians and educational technologists are concerned that such material centers should be operated with greatest possible effectiveness. Therefore, this conflict is itself a common concern of both fields.

The development of media collections that will best serve the needs of the institutions of which they are part is a common concern of educational technologists and school librarians. Both work with teachers and students in cooperatively selecting materials that are needed. Both agree that some materials must be bought and some locally produced if the specific local needs are to be met.

Individualized instruction and learning concerns both groups. These two professions have long felt that all students should be encouraged to pursue their own greatest interests in their educational programs and that individual learning styles should be made part of such programs. Assisting teachers in the development of effective instructional programs is also a common concern of the groups.

Keeping up with the newest technological developments in the conveying of information is a concern of school librarians and educational technologists. In order to provide the best media services to today's schools these professionals must be ever aware of research and development in their fields.

As is apparent, educational technologists and school librarians have a great many common concerns. Major aspects of the work of both groups are closely related. This closeness has led to consideration of unifying the groups. The publication of two sets of standards for school media programs as joint efforts resulted from that consideration. The current trend toward unified certification is another result of such thought.

Economy has caused educators to consider the value of unification of these professional areas. Small schools often feel that to hire an educational technologist and also a school librarian would be more than they can afford. Seeing the common concerns between the two groups, many outside the fields think that an educational technologist and a school librarian should be able to provide the same services for their schools. In many respects they are correct, but not in all.

7. What are the major differences in philosophy and practice between the two fields?

Despite the many common concerns of educational technology and school librarianship there are differences that characterize the unique contributions of each field. These have been de-emphasized by advocates of unification of the fields, and perhaps they should not have been. Some of the differences relate to very important aspects of the professional areas.

One major difference in the two fields is the relationship of the professional to the media collection which is involved in his/her work. No librarian works without a materials collection. If he/she is hired by a school with no library collection, the first priority of the position will be to acquire one. The librarian's preparation in the principles of selection and the procedure to be followed prepares for this task. An educational technologist on the other hand works first with instructional planning and the materials generated in such planning are of secondary concern. The collection of materials for use by teachers and students is of great importance to all concerned but not in the same manner.

The materials collection must be well organized and closely supervised if materials are to be readily accessible when needed. Here also the basic training of librarians in organization of materials and record keeping can be well utilized. Although commercially printed catalog cards and processing services have drastically lowered the amount of personal attention that must be given by librarians to these chores, they have not totally eliminated them. Someone with proper theoretical knowledge must be available to direct the organization and circulation processes.

Educational technologists should be available in every school to work with teachers in planning instructional programs that will take into account varied needs and learning

styles of students and the media formats which will be best suited for certain aspects of the program. Educational technologists should work in the media center because their work is based on proper association of instruction, learning, and media. The supervision of the collection does not seem to be a major concern of educational technology.

Administration of media centers has caused controversy between librarians and educational technologists. After the publication of the joint standards of 1969, there was quite an outcry from concerned professionals. The bitterest attacks were made by educational technologists who saw the joint standards as an effort by school librarians to take over the media realm and send audiovisual specialists into oblivion. Quite a lot of discussion ensued and much of it dealt with who would be in charge of media centers.

Doris M. Timpano's Crisis in Educational Technology: A Critique of American Library Association-National Education Association Standards for School Media Programs which was denied publication in Audiovisual Instruction because it was considered too inflammatory expressed many fears and suspicions which seemed fairly widespread in 1970. The concern over which professional would be chief administrator was expressed in the statement, "From the view of the audiovisualist, these Standards represent a clear statement of intent to join print and non-print in one area and under one control. After wading through miles of verbalism, the

one control can be identified, Librarian!" (p. 16) Perhaps the administrator of the collection should be a librarian, but the media center operation might not be under the same director. Most who discussed this problem objectively decided that the person best qualified to be the chief administrator of a media center should be assigned that position, and it will not be the same in any two situations. All circumstances in the particular situation must be considered and a decision made for that situation only.

Timpano used many citations out of context and stated half-truths concerning librarians and library science preparation, but she raised some questions that librarians considered seriously. She mentioned the perplexity that existed concerning cataloging of nonprint materials. She called attention to lack of training in other regards concerning nonbook materials on the part of librarians such as evaluation; she indicated that this pleased the commercial producers of materials who considered the inadequate knowledge of some school librarians an advantage for them in selling. Directors of library schools with approved programs had begun attending to such problems before 1970, but stepped up their efforts.

Timpano also pointed out the fact that librarians and educational technologists had not begun working together on common concerns soon enough. She cites a conference in 1962 sponsored by the U.S. Office of Education for the purpose

of exploring "requirements in the professional education of school librarians and teachers to more effectively organize and use modern instructional materials" (1970, p. 25). She pointed out that representatives of school librarians and teacher associations from thirty-three states were there, but no representatives of DAVI. Too often problems have been considered by the professional groups in their own meetings without communication with all those concerned.

Educational technologists and school librarians have a slightly different philosophy concerning students with whom they work. Educational technologists see the students as learners in all their relations with them professionally. Librarians consider the students as whole persons and are not solely concerned with their learning processes. In view of the current trend toward considering learning in a more comprehensive fashion and education as a lifelong activity, perhaps this difference will become of negligible importance. Educational technologists in selecting materials for student use always consider the part the materials will play in an instructional program, but librarians select materials that will satisfy personal interests of the hobby variety and provide for purely recreational activity as well as providing for curricular materials. School librarians consider instructional needs first but the other interests always enter into the building of a collection to some degree. Part of the librarian's association with studies involves

the students' recreational interests.

Educational technologists study learning theories and instructional development in greater depth than do school librarians. Both groups agree on the importance of these aspects of education, and both have some educational preparation for dealing with them, but library science preparation is shallow compared with that of educational technology. The educational technologists should take the lead in the preparation of instructional programs. Librarians should be involved in such preparation because of their superior training in location and utilization of sources which the educational technologists will need for working out such programs.

Media production is treated in greater depth by educational technologists also. Library science programs for school librarians now include some training in media production, but the level of such training varies widely. Some library science courses in this area do little with production but place the main emphasis on operation of equipment. This is essential, but more knowledge concerning local production of instructional materials should be available to teachers and students through the media centers. The ideal situation will provide an educational technologist to supervise such production.

Differences of opinion concerning certification of media professionals exist between educational technologists

and school librarians. Attempts at achieving unified certification have not yet succeeded in all states. Major problems in agreement touch upon some of the differences in philosophy and practice already pointed out in this report. Both groups see the need for in-depth preparation in areas that each currently requires in the separate programs. Working this out within the limits of college and university programs creates so far insurmountable problems in some states. The joint graduate degree programs mentioned earlier may be the answer. Practical considerations may cause state departments of education to intervene and bring about compromise certification plans which can be accepted by both educational technologists and school librarians.

Educational technology and school librarianship have enough common concerns that they should work very closely in today's educational programs. Each field has its own unique contribution to make to the total field of education. The contribution of each should be accepted and recognized as something that no other profession could do for today's students and teachers.

For a long period of time these professional fields developed with no real relationship between them. Their parallel concerns developed in just that way. With very few exceptions there were no efforts at complementary development until the past twenty years. During that time the relationship, although stormy at times, has developed

into a situation that finds professionals in two related aspects of education who feel that it will be necessary to work out their differences in order for both to contribute to education to the fullest degree.

CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS FOR THE FUTURE

After study of the historical development of the fields of educational technology and school librarianship and comparison of their common concerns and their differences in philosophy and practice, certain conclusions emerge. These conclusions indicate some problems that leaders in both fields might wish to consider as they guide future actions toward development in their fields.

At the outset of this report the objective of the study was stated as the tracing of the development of the relationship between educational technology and school librarianship. The histories of both fields were studied with focus upon events and circumstances that were perceived as contributing to the present relationship between the fields. It was hypothesized that probable causes of certain situations existing between the two fields might be identified and that feasible future paths for development might be discerned. It was also hypothesized that examination of the fields' objectives and the approaches utilized to attain them might

lead to a statement concerning the uniqueness of each field. The final hypothesis was that this study might provide insight into current problems of education in general because of the major roles now developing for both educational technology and school librarianship in the larger area of education. The conclusions that follow will show that the materials examined during the study support the hypotheses.

An obvious conclusion is that both educational technology and school librarianship have their foundations in education. School librarianship has dichotomous origins, but is very much a part of the field of education. The role of the school librarian as educator seems to be growing stronger today. Both of these professional groups are working toward more effective utilization of all media in the educational programs of today.

Educational technology and school librarianship have both been seeking the status of professional maturity during the twentieth century. Each group has worked toward building the theoretical knowledge in its field, establishing educational preparation programs of substance for its members, increasing research efforts in its discipline, providing ethical standards for judging its members, and emphasizing its service orientation. The growth toward greater professionalism has been parallel progress in the two fields--with no significant relating to each other along the way.

There is a noticeable lack of mention of each of

these fields in the history and writings of the other. Writings concerning school librarianship often reported changes in collection formats (the adding of audiovisual materials) and changes in function (working more directly with teachers in lesson planning) without relating such to educational technology. Educational technologists wrote of problems in selection and organization of materials without exploring the possible assistance in these areas that school librarians (and their literature) could provide.

School librarians and educational technologists have misconceptions about each other. Implications concerning librarians in writings of educational technologists give the impression that librarians are clerical workers whose jobs do not deserve professional status. Many librarians imply that educational technologists are teachers who know how to operate audiovisual equipment but who certainly don't know how to organize and utilize instructional materials properly. Both, of course, are wrong. The professionals in either field who imply such things are not really aware of the scope and responsibilities of the other field. Sometimes keeping abreast in one's own field is not enough; closely allied fields should also be investigated.

Some problems between educational technology and school librarianship have been caused by educators not members of either field. The common concerns of the fields often convince teachers and administrators that school librarians

and educational technologists provide the same services to the school. The economic concerns mentioned earlier in this report may bring about the hiring of a librarian or an educational technologist as a media center director and expecting that person to provide services for which he/she is not prepared. The addition of audiovisual materials and equipment to school libraries and the accumulation of instructional materials by educational technologists have led to such misconceptions concerning service expectations of both groups.

Efforts made toward unification of the fields of educational technology and school librarianship led to professional jealousies. Each field had some members who saw these attempts as threats to their own professional group. Most vocal about such concerns were educational technologists, perhaps because they were fewer in number. The 1969 standards, concrete evidence of cooperative effort between the fields, set off much controversy. Since their publication some attempt at cooperation has continued; the 1975 standards, also jointly prepared, are good evidence of that. Certification that unites the requirements of the two fields is still being sought and with success in numerous locations.

Study of educational technology and school librarianship reveals more differences than are readily apparent in the services offered by the two groups. Certain differences in philosophy and practice were pointed out in the previous

chapter. Each profession makes a unique contribution to today's education.

In light of these conclusions some recommendations for the future are offered. Future developments in educational technology or in school librarianship are quite likely to have effect on both fields. Therefore, leaders in both fields should examine carefully the relationship between the groups; this might be valuable in guiding future activities of both. This examination should involve reading the literature of the other field and discovering how research efforts in one area may be utilized by the other.

Consideration of the unification of the fields should, in this writer's opinion, be forgotten. Complementary development seems to hold more promise than unification. The larger area of education is likely to benefit from cooperative growth in these fields. Unification seems impossible to achieve and probably undesirable.

Unified certification is likely to occur. Practical considerations may dictate this. At the undergraduate level perhaps a media generalist program can be developed including basic concerns of both educational technology and school librarianship. Graduates of such programs might direct some local school library media centers. Graduate level programs should prepare the specialists in both school librarianship and educational technology. Separate specialization in the two fields should continue. The graduate level certification

programs could produce the properly trained directors of large school media centers, supervisors, and administrators for the more sophisticated aspects of the educational programs where their expertise would be demanded.

Both educational technologists and school librarians should publicize their services to a greater extent. Planned publicity programs to emphasize the kinds of service offered by each should be launched by the professional organizations in both fields. This information should go to places that would affect others than the membership of the profession involved. Very effective explanations of the services of school librarians appear in publications like Library Journal, but only librarians are likely to read them. The same is true of material appearing in Instructional Innovator concerning educational technologists. The professionals in the field need to see these materials but the same kind of information (perhaps in more general language) should appear in some publications read by other educated adults. New fields for the dissemination of news about educational technology for school librarianship might offer ways to draw support for the services from the taxpayers who provide the funding for the programs. Emphasis on the unique services of each group might convince the people concerned that schools need an educational technologist and a school librarian on every faculty in order to provide the most effective educational program possible for the students.

The major recommendation offered is that these professional groups become more aware of each other as they look toward the future. If ideas of unification are put aside, perhaps ways that each group can offer support and assistance to the other will be forthcoming. There will continue to be some concern over which field's professional is given chief administrative responsibility when a choice must be made where both are employed, but if each choice is made objectively with professional prejudices cast aside (as much as possible) and the situation at hand takes top priority, this concern will fade also.

More educators are becoming aware of the importance of efficient utilization of educational media in effective education. Both educational technologists and school librarians should also make them aware of the unique role to be played by each of their professions in such efficient utilization. Educational technologists and school librarians competing against each other may cause serious problems for both fields, but sincere efforts at working together so that each field complements the other can lead to success for all involved.

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