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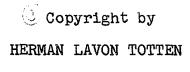
AN ANALYSIS AND EVALUATION OF THE USE OF EDUCATIONAL MEDIA

IN THE TEACHING OF LIBRARY SCIENCE IN ACCREDITED

AMERICAN GRADUATE LIBRARY SCHOOLS

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY

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AN ANALYSIS AND EVALUATION OF THE USE OF EDUCATIONAL MEDIA

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APPROVED BY

DISSERTATION COMMITTEE

DEDICATION

This research study is respectfully dedicated
to my parents, Joseph and Dulvi Tucker, in apprecia-
tion of the immeasurable contribution they have made
to the education of their child.

ACKNOWLEDGMENTS

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Above all, a very special acknowledgment is made to my parents, Mr. and Mrs. Joseph T. Tucker, my aunt and uncle, Mr. and Mrs. J. S. Jim Simmons, and my friend, Mr. Dewey Tracy Christian, for their patience, warm support, constant encouragement and confidence, without which this study could not have been completed.

TABLE OF CONTENTS

TABLE OF CONTENTS--Continued

LIST OF TABLES

AN ANALYSIS AND EVALUATION OF THE USE OF EDUCATIONAL MEDIA

IN THE TEACHING OF LIBRARY SCIENCE IN ACCREDITED

AMERICAN GRADUATE LIBRARY SCHOOLS

CHAPTER I

THE PROBLEM AND GENERAL PLAN OF THE STUDY

Introduction

The purpose of this chapter is to describe the problem
and to state the need for this investigation. The chapter
also includes the origin of the study, a description of the
scope and limitations of the study, definition of certain
terms, procedure, a representativeness of responses, and the
organization of the study.

Origin of the Study

A survey of literature reveals that the impact of new
media on teaching is apparent in the elementary school, the
secondary school, the college, and the university. The extent
of this impact is further evidenced by contrasting the picture
of the physical environment of the Latin Grammar School of the
Colonial Period with that of the modern secondary school.
That the latter houses thousands of dollars' worth of instruc-
tional materials is a phenomenon which has occurred neither by

accident nor by the imprudent use of money. Modern educators
have come to the realization that appropriate equipment and
materials are necessary aids to efficient learning. At the
present time dramatic events are taking place in schools
across the nation through the extended use of varied instruc-
tional materials, particularly teaching machines and televi-
sion. The curricula and methodology of tomorrow's schools
will be influenced, to a large extent, by the proven success
of these new innovations. It behooves the teacher to famil-
iarize himself with current methods that utilize both new and
traditional instructional media.[1]

Crossman, in a recent article, points out that several
factors have been responsible for the dramatic progress made
in the use of teaching media in the public schools during the
past decade. For example, there has been rapid development of
new tools and materials. Likewise, there have been signifi-
cant broadening and improvement in the utilization of these
materials as a widespread strengthening of the basic compo-
nents that have contributed to an integrated instructional
media program in many schools.[2]

McIntyre expresses the opinion that new media have
provided the means for making a significant improvement in the
efficiency of our instructional procedures. There is evidence

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[1]James M. Nordbert, et al., Secondary School Teaching
(New York: The Macmillan Company, 1962), p. 108.

[2]David M. Crossman, "Impact of New Media on Elementary
and Secondary Schools," Audiovisual Instruction, X (Feb.,
1965), p. 107.

that by the use of these media several all-school objectives may be accomplished more effectively and efficiently. First of all, the effectiveness of the superior teacher can be extended to more students with little or no diminution. Secondly, instruction can be systematically structured, revised, and improved in the light of measured student achievement toward agreed-upon goals. Third, the time of teachers can be diverted from lecture, demonstration, and drill and put to better use in instruction requiring the interaction of teacher and student. Lastly, teaching can be enriched with a variety and depth of experiences not otherwise available to students.[3]

The employment of many and varied forms of equipment and media in the classroom is not based on a mere whim. Research has validated every step. This research has been conducted in research laboratories as well as in actual classroom situations.[4]

Trow emphasizes that education, the world over, is a stupendous enterprise, characterized by continuous growth. In such an enormously complex undertaking, it is to be expected that innovations will come slowly; the important fact is that changes have been made. Trow is mindful that several aspects of the modern world have effected these changes. An increase in population and new psychological and educational theories

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[3]Charles McIntyre, "The Impact of New Media on College Instruction," Journal of Higher Education, XXXIV (Feb., 1963), p. 85.

[4]James A. Kinder, Using Audio-Visual Materials in Education (New York: American Book Company, 1965), p. 2.

have had a pronounced influence upon the educational system.

More recently, the rapid developments in human knowledge,

particularly in the area of the sciences, and the constantly

changing worldwide political conditions in which new nations

find themselves for the first time under a self-government

have added responsibility to those in charge of the school

curriculum. There is much more for the youth of today to

learn than ever before, especially since modern methods of

communication and transportation have placed the knowledge

of yesterday's events on today's doorsteps. And now, new

technological changes are actually forcing their way into

the school buildings and threatening to upset the sacred

procedures to which teachers have dedicated themselves for

years.[5]

Another mark of modern educational practice is the

recognition of the need to provide teachers with an up-to-date

knowledge of the large variety of new educational media re-

sources available and instruction in the intelligent use of

them. Children today are born into a world of mass media.

No one can shut out motion pictures, television, radio, paper-

back or comic books, illustrated magazines, or any other media

referred to as an audio-visual aid.

The continuous claims referent to the great impact of

educational media[6] on teaching have created the need to

[5]William Clark Trow, Teacher and Technology: New De-
signs for Learning (New York: Appleton-Century-Crofts, 1963),
p. 2.

[6]Kinder, op. cit., p. 4.

determine the extent to which educational media are used in the teaching of library science in accredited graduate library schools and to analyze the judgments of library science teachers relative to how well they are using them in terms of established criteria. The following questions constitute the basic frame of reference of this study: Have educational media, a dynamic force in the teaching profession, had great effect, little effect, or no effect upon teaching in these graduate library schools? If educational media have affected the teaching of library science, to what extent have their influences been felt? What are the judgments of library science teachers relative to how well these media are being utilized? It is in an effort to answer these questions that this study is made.

Statement of the Problem

The problem of this study was to determine the extent to which educational media are used in the teaching of library science in accredited American graduate library schools and to analyze the judgments of library science teachers relative to how well they are using them in terms of established criteria.

The plan of attack on the problem calls for four major steps: (1) the developing and validating of evaluative criteria relating to the use of educational media based on professional literature and a jury of highly competent authorities in the educational media field; (2) the developing of an Evaluative Checklist and an Inventory Check Sheet;

(3) ascertaining the status of educational media use in teaching library science in accredited American graduate library schools; and (4) evaluating educational media use in the teaching of library science in accredited American graduate library schools in relation to established criteria.

Need for the Study

No study has been made to determine the extent to which educational media are used and to evaluate their use in the teaching of library science or any other field. The findings of this should reveal data which will enable the deans and faculties of the schools to evaluate accurately their respective programs in an effort to determine the extent to which they are utilizing educational media to increase substantially and to prepare more effectively skilled librarians. These data should also provide the library schools with a means of appraising their instructional programs in terms of a recommendation made by the National Conference on the Implications of the New Media for the Teaching of Library Science. The recommendation is as follows:

> The thirty-six accredited graduate library schools, as well as hundreds of additional agencies engaged in the preparation of school librarians, are facing an unprecedented demand for trained and skilled librarians. The competencies and knowledges required of these graduates must now and for the future encompass such areas as the use of a variety of hardware necessary for efficient systems of informational retrieval, training, and practice with a variety of new educational media, and familiarity with teaching machines. The present level of demand for trained librarians exceeds the supply by many times, and for the immediate future of the next two decades there seems to be little hope of fulfilling the demands of

school, university, special and governmental agency, and
public library needs for such specialists. All necessary
means to extend the training as envisioned here, may be
also of great value in the recruiting of larger numbers
of library students nationally; further, the level of
American library education can be enhanced internationally
as a result of this wider scope.[7]

If library educators are to revise adequately their

training programs to include the knowledge, skills, and com-

petencies referred to above, they must be rapidly and effi-

ciently brought abreast of developments in the application of

educational media to educational methods.

Scope and Limitations

This investigation is confined to study of nine major

aspects of educational media used in the teaching of library

science in accredited American graduate library schools. Each

major aspect includes several elements and features which

appear to be characteristic of the use of educational media

in teaching. For the purposes of this study, these are called

characteristics.

The first major aspect in the use of educational media

is general. This aspect includes the following character-

istics: the role of educational media in instruction and

provisions for inservice education in the use of educational

media.

A second major aspect deals with educational media.

[7]Harold Goldstein, Proceedings of the National Con-
ference on the Implications of New Media for the Teaching of
Library Science (Champaign, Illinois: The Illini Union
Bookstore, 1963), p. 18.

This aspect includes the following characteristics: Dissemination of information by educational television, pictorial current events depicted by educational television, and use of educational television to reach widely dispersed audiences.

The third major aspect deals with teaching machines and programmed learning materials. This includes the following characteristics: use of teaching machines and/or programmed learning materials in the immediate reinforcement of subject matter and use of teaching machines and/or programmed learning materials in learning routine skills and factual information.

A fourth major aspect deals with recordings. This includes such characteristics as use of recordings to enliven, enhance, and vivify impressions of materials, and use of recordings to provide realistic musical and unique narrative experiences, to capture original sounds, and to overcome barriers of time and distance.

The fifth major aspect deals with opaque materials. This includes the following characteristics: use of opaque materials for non-transparent materials to be used for group observation and economy of time, and the use of opaque materials to enlarge small size still pictures and to project three dimensional objects.

A sixth major aspect deals with overhead transparencies. This includes the following characteristics: use of overhead transparencies to show development of wholes and parts of the cumulative growth of a whole, to write on

projection materials at the time of projection, or present
illustrations while the teacher is facing the class.

The seventh major aspect deals with slides. This
includes the following characteristics: use of slides for
reduction in size for easy storage and retrieval and to docu-
ment field trips and laboratory experiments.

An eighth major aspect deals with filmstrips. This
includes the following characteristics: use of filmstrips for
photographs of a sequential nature and for discussion of
individual frames.

The ninth aspect concerns motion picture films. This
includes the following characteristics: use of motion picture
films to present vicarious experiences when they contribute
to the lecture, to provide motivation, for effective presenta-
tion of materials, for the combination of verbalization and
motion, for modification of time, size, and space, and for
review and summarization. The uses of eight millimeter motion
picture films include utilization for small group or individ-
ual instruction and for inexpensive local production.

This investigation purports to determine the status
of each of the major aspects including its sub-items or
characteristics.

The absence of scientifically validated criteria for
evaluation of the use of educational media in teaching re-
quired the development of an Evaluative Checklist which was
used for such criteria. Although several checks indicated the
validity of the developed instrument, its exact precision is

unknown. Therefore, it has been necessary to support the conclusions objectively obtained with further evidence from reason and inference. This constitutes a limitation of the study and will be treated in detail in Chapter III.

This study is also limited to the full-time faculty members teaching in American graduate library schools whose Masters' Degree programs had been approved by the American Library Association's Committee on Accreditation prior to January 1, 1966.

Definition of Terms

Educational Media - Educational media, many times referred to in the literature as new media, includes all non-book materials that may be used for teaching and learning purposes and the equipment necessary for the use of these materials.

Teaching - Teaching is the act of instructing in an educational institution.

Library Science - Library Science is the knowledge and skill by which printed and non-printed records are recognized, collected, organized, and utilized.

Accredited American Graduate Library Schools - Accredited American Graduate Library Schools include those library schools whose Masters' Degree programs have been approved by the American Library Association's Committee on Accreditation.

Self-evaluation - Self-evaluation refers to the

appraisal of the use of educational media by teachers in accredited American graduate library schools in which the educational media use is evaluated.

Evaluation - Evaluation refers to the appraisal of the use of educational media by making value judgments about the elements of the use.

The Use of Educational Media - The use of educational media refers to the total teacher utilization of educational media.

Procedure

The survey method and appraisal technique will be used in this study. Good, Barr, and Scates write that the survey is "concerned with ascertaining the conditions which prevail in a group of cases chosen for study, and is essentially a method of quantitative description of the general character- istics of the groups."[8] They also state that the "appraisal is the procedure by which we secure and make overt character- istically variable reactions."[9]

The accomplishment of this study involved four major steps: (1) the developing and validating of evaluative criteria relating to the use of educational media based on professional literature and a jury of highly competent authorities in the educational media field; (2) the developing

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[8] Carter V. Good, Arvin S. Barr, and Douglas E. Scates, The Methodology of Educational Research (New York: Appleton-Century-Crofts, Inc., 1941), p. 286.

[9] Ibid., p. 412.

of an Evaluative Checklist and an Inventory Check Sheet;
(3) ascertaining the status of educational media used in
teaching library science in accredited American graduate li-
brary schools; and (4) evaluating educational media use in the
teaching of library science in accredited American graduate
library schools in relation to established criteria.

The Population

This study was an investigation of the extent to which
educational media are used in the teaching of library science.
Because of the magnitude of the problem it is limited to
teachers teaching in the thirty-three accredited American
graduate library schools. There are thirty-three full-time
directors and two hundred and fifteen full-time teachers mak-
ing a population of two hundred and forty-eight because of the
directors having some teaching responsibilities. (See
Appendix N for a list of participating schools.)

Construction of the Instruments

In order to facilitate the investigation it was nec-
essary to construct three kinds of instruments, an instrument
for obtaining judgments from the jury of experts, an Eval-
uative Checklist and an Inventory Check Sheet designed to
obtain information relative to the use of educational media
in the teaching of library science in accredited graduate
library schools.

Instrument on validating criteria

The checklist type of questionnaire was selected as
an appropriate available technique to collect the data desired
for developing the criteria. The limitations of this method
of investigation were recognized, but considerations of time
and economy made the use of other methods impractical. In
the construction of the instrument, constant efforts were
made to:

1. Facilitate the task of the respondent by giving
   specific instructions at the top of the validation
   form.

2. Reduce the amount of writing required of the respond-
   ent by using simple checks.

3. Make the statements as clear and specific as possible.

4. Keep the validation form as brief as possible without
   sacrificing comprehensiveness. Great care was used to
   avoid duplication of statements.

5. Increase the reliability of each instrument through
   trial testing on educational media specialist who
   criticized the instrument and suggested revisions.

6. Refine the instrument through consultations and inter-
   views with advisor, members of the dissertation
   committee and colleagues.

A more detailed description of the validation form is
given in Chapter II.

Evaluative Checklist and Inventory Check Sheet

Gathering data on the availability and use of educa-
tional media in the teaching of library science necessitated
the involvement of two groups: (1) all full-time faculty mem-
bers teaching in accredited American graduate library schools

and (2) the directors of accredited American graduate library schools.

The group involving teachers includes only those teachers who are engaged as full-time teachers. The group involving directors included only those persons who were listed as full-time directors with or without teaching responsibilities.

A more detailed description of the Evaluative Check-list and Inventory Check Sheet is given in Chapter II.

Gathering the Data

An Evaluative Checklist modeled after a checklist developed by William Ray Fulton[10] and an Inventory Check Sheet[11] constructed so as to include most educational media items included in the standards developed by Gene Faris and Mendel Sherman,[12] a cover letter, and a cover letter written to the Directors by Dr. Frank J. Bertalan, Director of the University of Oklahoma's School of Library Science, were sent

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[10]William Ray Fulton, Evaluative Checklist, An Instrument for Self-Evaluating an Educational Media Program in Colleges and Universities, Developed for the United States Office of Education (Norman, Oklahoma: The University of Oklahoma, 1965), as part of a study performed pursuant to a contract with the U. S. O. E. under the provisions of Title VII, Public Law 85-864.

[11]Ibid.

[12]Gene Faris and Mendel Sherman, Quantitative Standards for Audiovisual Personnel, Equipment and Materials, (Higher Education Section), Developed for the United States Office of Education (Bloomington, Indiana: Indiana University, 1965), as part of a study performed pursuant to a contract with the U. S. O. E.; under the provisions of Title VII, Part B program.

to the total population of two hundred forty-eight full-time

faculty members teaching in accredited American graduate

library schools[13] in order to gather data to determine the

extent to which educational media are used in the teaching of

library science, to analyze judgments of library science

teachers relative to how well they are using educational

media, and to determine the availability of educational media

to library science teachers. After four weeks, a follow-up

letter was sent to those of the total population who had not

responded to the original letter. This instrument was de-

signed to elicit from the teachers judgments about their use

of educational media. These judgments were expressed in

response to a specific number of items included in the

Evaluative Checklist.

Each item consisted of descriptions of the use of

educational media at three levels of operation. The descrip-

tion of the "higher" level of use reflected the criteria by

which it was judged. The situation described in the "middle"

statement falls below the criteria, and the "low" description

is a situation in which educational media are used but are far

below the criteria reflected by the Evaluative Checklist.

The Inventory Check Sheet was designed to elicit in-

formation concerning the current status of the availability

of educational media to teachers in accredited American

[13]The Association of American Library Schools,
"Faculty Directory of the Association of American Library
Schools," Journal of Education for Librarianship, VI (Winter,
1966), pp. 167-178.

graduate library schools. The Inventory Check Sheet includes three sections relating to (1) identification of library schools being inventoried and the size of their full-time faculty; (2) an inventory of all equipment available; and (3) an inventory of all materials available to the library school. The Evaluative Checklist, Inventory Check Sheet, cover letter, and follow-up letter used in this study appear in Appendices J, K, H, I, and M, respectively.

Method of Evaluation

The characteristics to be evaluated are the ones listed in the Evaluative Checklist and Inventory Check Sheet, mentioned earlier. The Evaluative Checklist includes two major aspects: (1) the extent to which educational media are used in the teaching of library science in accredited American graduate library schools; and (2) an analysis of the judgments of library science teachers relative to how well they feel they are using educational media.

The Inventory Check Sheet includes two major aspects: (1) the current quantitative status of educational media materials and equipment; and (2) the availability of equipment and materials to teachers teaching in accredited American graduate library schools.

Each aspect, including all sub-items of both the Evaluative Checklist and the Inventory Check Sheet, is discussed in Chapter II. The strengths, neither strengths nor weaknesses, and weaknesses of the data on the use which seems

pertinent to each aspect are analyzed and evaluated in terms
of the established criteria and the established standards.

Evaluative judgments are given in terms of strong,
neither strong nor weak, and weak. No effort is made to give
the specific degree of the three points. When an aspect of
use or availability appears to be strong in some aspect, this
is called to the attention of the reader.

The evaluative judgments are reached on the basis of
one or more of the following criteria: (1) evidence that the
activities of a particular aspect are in conformance with the
criterion; (2) evidence of use which seems compatible with the
criterion; and (3) evidence of continuous effort toward
achieving the objective of the criterion.

Representativeness of Responses

Evaluative Checklists relative to the evaluation of
the use of educational media in teaching were sent to the
total population of two hundred forty-eight[14] full-time
faculty members teaching in accredited American graduate li-
brary schools. The thirty-three directors received in addi-
tion to the Evaluative Checklist an Inventory Check Sheet. Of
the two hundred forty-eight teachers included, two hundred
thirty-five, or 95 per cent, returned the completed Evaluative
Checklist. In addition to their Evaluative Checklist, all
thirty-three of the directors, or 100 per cent, returned the
completed Inventory Check Sheet.

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[14]The Association of American Library Schools, op. cit.

The responses were unusually high among the schools in Range 1. Nine, or 75 per cent, of the schools in this range responded 100 per cent and fifty-seven, or 98 per cent, responded in the total range. Eighty-four, or 94 per cent of the schools in Range 2 responded and ninety-four, or 93 per cent, of the schools in Range 3 responded. The representativeness of the responses to the Evaluative Checklist and the Inventory Check Sheet is indicated in Tables 1 and 2.

TABLE 1

NUMBER AND PERCENTAGE OF TEACHERS AND DIRECTORS IN
ACCREDITED AMERICAN GRADUATE LIBRARY SCHOOLS
RESPONDING TO EVALUATIVE CHECKLIST

Accredited American Graduate Library Schools	No. of Teachers and Directors in Population	No. of Teachers and Directors Represented in Responses	Per Cent Teachers and Directors Represented in Responses
Total Library Schools Full-Time Faculty, Including Directors	248	235	95
Directors of Library Schools	33	33	100

Source: Evaluative Checklist

TABLE 2

NUMBER AND PERCENTAGE OF TEACHERS AND DIRECTORS IN
ACCREDITED AMERICAN GRADUATE LIBRARY SCHOOLS
RESPONDING TO THE EVALUATIVE CHECKLIST
BY SIZE OF SCHOOL

Size of Schools No. of Teachers Including Directors	Number in Population	Number Responses	Per Cent Responding
4 - 6	58	57	98
7 - 10	89	84	94
11 - 15	101	94	93

Source: Ibid.

Organization of the Study

The study involves four chapters central to the basic idea. In Chapter I, the problem and general plan of the study are outlined. Chapter II is concerned with the development of the criteria, the Evaluative Checklist and the Inventory Check Sheet. An analysis and evaluation of the use of educational media in the teaching of library science in accredited American graduate library schools make up Chapter III. Summary, conclusions, and recommendations are found in Chapter IV.

CHAPTER II

DEVELOPMENT OF THE CRITERIA AND THE EVALUATIVE CHECKLIST

Introduction

The purpose of this chapter is to describe the process
of developing criteria, the Evaluative Checklist and Inventory
Check Sheet for analyzing and evaluating the use of educa-
tional media in the teaching of library science in accredited
American graduate library schools. In addition it proposes
to describe the method used to select a jury of highly compe-
tent authorities in the educational media field, the method
used in determining the criteria, the construction of the
questionnaire used in validating the criteria, the process of
formulating the criteria, the development of the Evaluative
Checklist and the Inventory Check Sheet.

Selection of the Jury

The first major step toward the development of cri-
teria for the evaluation of the use of educational media in
the teaching of library science in accredited American grad-
uate library schools, was the selection of a jury of highly
competent authorities in the educational media field.

No claim is made with respect to the representative-
ness of the sampling of jurors included in this study as

contrasted with the total population of educational media specialists in the country. To obtain authoritative judgments it seemed more desirable to use highly selected personnel for the jury than to attempt a representative sampling. The following criteria were set up to govern the selection of jurors:

1. A person who has demonstrated a thorough knowledge, both experimental and theoretical, of the application and use of educational media in teaching through practical experience as a teacher and as an administrator;

2. A person who has demonstrated, through his contributions to the literature, an ability to think objectively;

3. A person who has experienced national service in one of two types in the educational media field:

    A. A position related to the educational media with major responsibilities as part of his professional duties, or

    B. A position of honor with primary responsibilities, e.g., president of a national educational media organization or member of the board of directors of a national educational media organization.

Only those persons qualifying on at least two of the three criteria were chosen as jurors.

The selection of the jury required listing names of potential members and screening them against the established

criteria. The list of potential members was arrived at by extensive reading of the educational media literature to determine the names of contributors to the literature, a perusal of catalogs and bulletins to determine the names of people prominently connected with the teaching of educational media in American colleges and universities, and personal interviews with educational media leaders at the national and state level.

The original list contained eighteen names of persons who were thought to be competent to make the type of judgments necessary in this study. From the list, twelve, or 67 per cent qualified under the criteria described above. An alphabetical list of jurors appears in Appendix C.

Procedure for Developing and Validating Criteria

The development of criteria for evaluating the use of educational media in the teaching of library science in accredited American graduate library schools required that jury judgments be obtained on educational media utilization aspects which seemed pertinent to teaching. To do this a questionnaire was developed covering such major utilization aspects as the role of educational media in instruction and provisions for inservice education in the use of educational media, referred to in the instrument as "general," educational television, teaching machines and/or programmed learning materials, recordings, opaque materials, overhead transparencies, slides, filmstrips, and motion picture films. Each of these

aspects had several sub-items.

The questionnaire contained fifty-eight tentative

criteria derived from a review of professional literature. As

the literature was reviewed, all statements with implications

for evaluation and their sources were recorded. The following

literature was reviewed:

1. Publications on the subject produced by the Division
   of Audiovisual Instruction of the National Education
   Association and publications by the National Education
   Association.

2. Educational media journals.

3. Professional periodicals with emphasis on articles
   published after 1960 such as "Film Evaluation and
   Criticism," by James L. Limbacher[15], "The Overhead
   Projector-Teaching Aid Supreme," by John J. Long[16],
   and "Tricks with Teaching Tapes," by Silas A.
   Meckel.[17]

4. Textbooks such as A-V Instructional Materials and
   Methods, by James Brown and others[18], Audio-Visual
   Methods in Teaching by Edgar Dale[19], and Teacher and
   Technology: New Designs for Learning by William
   Clark Trow.[20]

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[15]James L. Limbacher, "Film Evaluation and Criticism,"
Illinois Libraries, XXXVI (February, 1964), pp. 121-126.

[16]John J. Long, "The Overhead Projector-Teaching Aid
Supreme," The Oklahoma Teacher, VI (April, 1965), pp. 20-23.

[17]Silas A. Meckel, "Tricks with Teaching Tapes," NSPI
Journal (January, February, 1965), pp. 10-11.

[18]James W. Brown, Richard B. Lewis and Fred F.
Harcleroad, A-V Instruction Materials and Methods (New York:
McGraw-Hill Book Company, Inc., 1964).

[19]Edgar Dale, Audio-Visual Methods in Teaching--Revised
Edition (New York: Holt, Rinehart and Winston, 1964).

[20]William Clark Trow, Teacher and Technology: New
Designs for Learning (New York: Appleton-Century-Crofts, Inc.,
1963).

5. Materials from manuals, newsletters, pamphlets, reprints, and reports from workshops.

6. One yearbook.

7. Criteria developed by W. R. Fulton as part of a study performed pursuant to a contract with the United States Office of Education, under the provisions of Title VII, Public Law 85-864.

8. One doctoral dissertation.

After highly similar statements were combined, one hundred five statements with implications for evaluation were formulated. Each statement was assigned a code number which represented the source of information from which the statement was taken. The complete list of sources and code numbers is found in Appendix A of this study.

This list was further refined by reducing its length. All statements from official publications of DAVI and NEA were retained for further study. These organizations are authoritative sources of information. Finally, those statements found in the literature of both organizations along with statements found in two of the other sources were retained for the development of tentative criteria. These statements were carefully compared and resulted in the formulation of a revised list of forty-eight criteria. These together with code numbers representing the source from which they were taken are found in Appendix B of this study.

In order to obtain judgments from members of the jury the fifty-eight criteria were listed in a questionnaire which was submitted to members of the jury for their reactions. Preceding each criterion were two columns, one marked "retain"

and the other marked "omit." Thus, a juror could give his opinion as to whether a criterion should be retained or omitted by merely checking one of the columns. Space for additional comments, suggestions, or criteria was provided.

The first draft of the questionnaire was submitted to four educational media specialists for their criticism and suggestions. This resulted in a revision of some of the items and the addition of others.

A letter, requesting the selected individuals to serve on the jury, was sent to the twelve prospective jurors selected by the process described earlier in this chapter (see Appendix D). A response card on which each juror merely had to mark "accept" or "decline" was enclosed (see Appendix E). A 100 per cent return, each one marked "accept," was received from this letter.

The revised questionnaire consisted of nine utilization aspects listed earlier in this chapter (see Appendix F), accompanied by a cover letter (see Appendix G) was mailed to each jury member. A stamped self-addressed envelope was also enclosed to facilitate a prompt response.

Four weeks after the questionnaires were sent, twelve or 100 per cent of the jurors had responded by returning the questionnaire. Prior to sending out the questionnaire to the jury members the cut off point for retaining a criterion in the final criteria would be 75[21] per cent or more responses received by each criterion. Consequently, the next step

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[21] John Charles Schwartz, Jr., "Evaluative Criteria for an Audiovisual Instructional Program." Unpublished Doctor's Dissertation, Department of Education, University of California at Los Angeles, 1949.

involved a tabulation of the responses by the jury to deter-
mine the validity of each criterion. This was done in the
following manner:

1. Totals for each column on each criterion were made.

2. The total number of "retain" and "omit" responses for
   each criterion were converted to a percentage.

3. All percentages were rounded off to the nearest whole
   number and compared to the criterion needed for
   validation.

Analysis of Jury Responses to Validating Questionnaire

Table 3 presents the total responses of the jury to
each of the tentative criteria statements included in the
questionnaire. To facilitate the following analysis the data
are presented in table form showing the number and percentage
of "retain" and "omit" responses to each criterion. It will
be noted that all percentages have been rounded off to the
nearest whole number and will always total 100 per cent.

TABLE 3

JURY RESPONSES TO EACH OF THE TENTATIVE CRITERION
STATEMENTS IN THE VALIDATION QUESTIONNAIRE

Criteria No.	Responses of the Jurors				Status of Criteria	
	"Retain"		"Omit"			
	No.	%	No.	%	Retained	Omitted
1	10	84	2	16	X	
2	10	84	2	16	X	
3	2	16	10	84		X
4	6	50	6	50		X

TABLE 3--Continued

| Criteria No. | Responses of the Jurors | | | | Status of Criteria | |
| | "Retain" | | "Omit" | | | |
	No.	%	No.	%	Retained	Omitted
5	10	84	2	16	X	
6	7	58	5	42		X
7	9	75	3	25	X	
8	9	75	3	25	X	
9	9	75	3	25	X	
10	7	58	5	42		X
11	10	84	2	16	X	
12	7	58	5	42		X
13	7	58	5	42		X
14	8	68	4	32		X
15	3	25	9	75		X
16	8	68	4	32		X
17	9	75	3	25	X	
18	8	68	4	32		X
19	12	100	0	00	X	
20	8	68	4	32		X
21	7	75	5	25	X	
22	6	50	6	50		X
23	12	100	0	00	X	
24	11	92	1	8	X	
25	11	92	1	8	X	
26	12	100	0	00	X	
27	11	92	1	8	X	
28	9	75	3	25	X	
29	10	84	2	16	X	
30	10	84	2	16	X	
31	10	84	2	16	X	
32	8	68	4	32		X
33	10	84	2	16	X	
34	12	100	0	00	X	
35	8	68	4	32		X
36	9	75	3	25	X	
37	7	58	5	42		X
38	9	75	3	25	X	
39	11	92	1	8	X	
40	10	84	2	16	X	
41	9	75	3	25	X	
42	6	50	6	50		X
43	7	58	5	42		X
44	7	58	5	42		X

TABLE 3--Continued

| Criteria No. | Responses of the Jurors | | | | Status of Criteria | |
| | "Retain" | | "Omit" | | | |
	No.	%	No.	%	Retained	Omitted
45	7	58	5	42		X
46	5	42	7	58		X
47	7	58	5	42		X
48	12	100	0	00	X	
49	9	75	3	25	X	
50	8	68	4	32		X
51	10	84	2	16	X	
52	10	84	2	16	X	
53	8	68	4	32		X
54	8	68	4	32		X
55	7	58	5	42		X
56	9	75	3	25	X	
57	2	16	10	84		X
58	11	92	1	8	X	

Source: Criteria Validation Questionnaire

Formulating the Criteria

The number and percentage of responses made by all members of the jury for each utilization aspect are shown in Tables 4-12. It will be noted that each criterion is paraphrased in order that as little space as possible be used in reporting the formulating process.

General

Tentative Criterion Number 1 deals with the role of educational media in instruction. As shown in Table 4, the jury responses on this statement are 84 per cent "retain" and

16 per cent "omit." An inspection of the data for this state-ment in Table 4 shows that the jury responses are clustered in the "retain" column, thus revealing a high degree of agree-ment relative to retaining this criterion. Thus, the criterion for this aspect appears to be:

> Educational media should be used when they contribute to the clarity of a particular lesson and, subsequently, to the improvement of instruction.

TABLE 4

PERCENTAGES OF TOTAL JURY RESPONSES ON EACH OF THE
GENERAL ASPECTS OF EDUCATIONAL MEDIA UTILIZATION

Tentative Criteria	Percentage of "Retain"	Percentage of "Omit"
1. Educational media should be used when they contribute to the clarity of a particular lesson.	84	16
2. Continuous inservice education in the use of educational media should be carried on as a means of improving instruction.	84	16
3. Continuous inservice education should be carried on in such areas as the instructional devices, materials and techniques.	16	84

Source: Criteria Validation Questionnaire

Tentative Criterion Number 2 deals with continuous inservice education in the use of educational media as a means of improving instruction. As shown in Table 4, the jury responses on this statement are 84 per cent "retain" and 16

per cent "omit." An inspection of the data for this statement
in Table 4 shows that the jury responses are clustered in the
"retain" column, thus revealing a high degree of agreement
relative to retaining this criterion. Inasmuch as tentative
criterion 2 and tentative criterion 3 are so closely related,
it seems advisable to combine them into one criterion. The
criterion resulting from this combination is listed following
the analysis of tentative criterion number 3.

Tentative Criterion Number 3 deals with continuous
inservice education carried on in such areas as instructional
devices, materials and techniques. As shown in Table 4, the
jury responses on this statement are 16 per cent "retain" and
84 per cent "omit." An inspection of the data for this state-
ment in Table 4 shows that the jury responses are clustered
in the "omit" column, thus revealing a high degree of agree-
ment relative to omitting this criterion. Inasmuch as tenta-
tive criterion 2 and tentative criterion 3 are so closely
related, it seems advisable to combine them into one criterion.
Hence, it appears that the criterion for these aspects is:

> Continuous inservice education in the use of educa-
> tional media and in the use of whatever new instructional
> devices, materials, and techniques are developed and are
> available should be carried on as a means of improving
> instruction.

Educational Television

Tentative Criterion Number 4 deals with the use of
educational television in academic areas that cannot be
staffed by the local school district because of budget and

teacher limitations. As shown in Table 5, the jury responses

on this statement are 50 per cent "retain" and 50 per cent

TABLE 5

PERCENTAGES OF TOTAL JURY RESPONSES ON EACH OF
THE EDUCATIONAL TELEVISION ASPECTS OF
EDUCATIONAL MEDIA UTILIZATION

Tentative Criteria	Percentage of "Retain"	Percentage of "Omit"
4. Educational television should be used in academic areas that cannot be staffed by the local school because of limited teachers and funds.	50	50
5. Educational television should be used when the content of the telecast is of such a nature that it will facilitate understanding of a subject.	84	16
6. Educational television should be used when a unit of material is common to the needs of a large group.	58	42
7. Educational television should be used when current events contribute to the learning process.	75	25
8. Educational television should be used when the group being taught is too large or is otherwise of such a nature that the type of instruction made possible by television would be impossible by normal or routine means.	75	25
9. Educational television should be used when its value to the subject matter taught is such that it justifies the expense.	75	25

Source: Criteria Validation Questionnaire

"omit." An inspection of the data for this statement in Table 5 shows that according to the cut-off point that this statement was omitted from the final criteria.

Tentative Criterion Number 5 deals with the use of educational television to facilitate understanding of a subject. As shown in Table 5, the jury responses on this statement are 84 per cent "retain" and 16 per cent "omit." An inspection of the data for this statement in Table 5 shows that the jury responses are clustered in the "retain" column, thus revealing a high degree of agreement relative to retaining this criterion. Hence, after editing suggested criteria written in by jurors it appears that the criterion for this aspect is:

Educational television should be used to disseminate information from sources that are not readily available.

Tentative Criterion Number 6 deals with the use of educational television when a unit of material is common to the needs of a large group. As shown in Table 5, the jury responses on this statement are 58 per cent "retain" and 42 per cent "omit." An inspection of the data for this statement in Table 5 shows that according to the cut off point this statement was omitted from the final criteria; however, after editing and combining several criteria written in by members of the jury the following criterion evolved:

Educational television should be used when the size of the audience or learning groups is sufficient to justify the cost.

Tentative Criterion Number 7 deals with the use of

educational television for current events when they contribute to the learning process. As shown in Table 5, the jury responses on this statement are 75 per cent "retain" and 25 per cent "omit." An inspection of the data for this statement in Table 5 shows that the jury responses clustered in the "retain" column, thus revealing a high degree of agreement relative to retaining this criterion. Thus, it appears the criterion for this aspect is:

> Educational television should be used to present live current events as they are happening when the pictorial aspect of the presentation enhances learning.

Tentative Criterion Number 8 deals with the use of educational television groups too large or otherwise of such a nature that the type of instruction made possible by television would be impossible by normal or routine means. As shown in Table 5, the jury responses on this statement are 75 per cent "retain" and 25 per cent "omit." An inspection of the data for this statement in Table 5 shows that the jury responses clustered in the "retain" column, thus revealing a high degree of agreement relative to retaining this criterion. Hence, it appears that the criterion for this aspect is:

> Educational television should be used when the group being taught is too large or is otherwise of such a nature that the type of instruction made possible by television would be impossible by normal or routine means.

Tentative Criterion Number 9 deals with the use of educational television only when its value justifies the expense of using it. As shown in Table 5, the jury responses on this statement are 75 per cent "retain" and 25 per cent

"omit." An inspection of the data for this statement in Table 5 shows that the jury responses clustered in the "retain" column, thus revealing a high degree of agreement relative to retaining this criterion. The following criteria resulted in the combination of criteria written in by members of the jury and Tentative Criterion Number 9.

Educational television should be used only when it enhances learning.

Educational television should be used for inservice education when it is feasible and suitable.

Educational television should be used when a unit of material is of such a nature that it lends itself to mass dissemination to widely dispensed audiences.

Teaching Machines and/or Programmed Learning Materials

Tentative Criterion Number 10 deals with the use of teaching machines and/or programmed learning materials when quick reinforcement of subject matter is necessary. As shown in Table 6, the jury responses on this statement are 58 per cent "retain" and 42 per cent "omit." An inspection of the data for this statement in Table 6 shows that, according to the cut-off point, this statement was omitted from the final criteria.

Tentative Criterion Number 11 deals with the use of teaching machines and/or programmed learning materials for individualized instruction. As shown in Table 6, the jury responses on this statement are 84 per cent "retain" and 16 per cent "omit." An inspection of the data for this statement in Table 6 shows that the jury responses clustered in the

TABLE 6

PERCENTAGES OF TOTAL JURY RESPONSES ON EACH OF THE
TEACHING MACHINES AND/OR PROGRAMMED LEARNING
MATERIALS ASPECTS OF EDUCATIONAL
MEDIA UTILIZATION

Tentative Criteria	Percentage of "Retain"	Percentage of "Omit"
10. Teaching machines and programmed learning materials should be used when quick reinforcement of subject matter is necessary.	58	42
11. Teaching machines and programmed learning materials should be used for individualized instruction.	84	16
12. Teaching machines and programmed learning materials should be used for the presentation of factual information.	58	42
13. Teaching machines and programmed learning materials should be used with gifted children.	58	42
14. Teaching machines and programmed learning materials should be used when there exists a wide range of intelligence among students.	68	32
15. Teaching machines and programmed learning materials should be used when immediate reinforcement is necessary at the precise level of achievement.	25	75
16. Teaching machines and programmed learning materials should be used when more individual instruction is needed by certain pupils than others and when it is desirable for students to progress at their own particular rate of learning.	68	32

TABLE 6--Continued

Tentative Criteria	Percentage of "Retain"	Percentage of "Omit"
17. Teaching machines and programmed learning materials should be used when a tutor to present material is not available, and particularly in such cases as when gifted or retarded children are involved.	75	25
18. Teaching machines and programmed learning materials should be used when the information to be presented lends itself to a logically organized, sequential system of learning.	68	32
19. Teaching machines and programmed learning materials should be used when basic drill and routine matters of instruction need to be presented.	100	--
20. Teaching machines and programmed learning materials should be used when the intellectual stratification of the class tends to make the simultaneous achievement of maximum uniform instruction and highest possible individual achievement impossible.	68	32
21. Teaching machines and programmed learning materials should be used when their supplementation of other study units will be directly contributive to the desired concept formation.	75	25
22. Teaching machines and programmed learning materials should be used in subject areas where information lends itself to routine tasks of instruction.	.50	50

Source: Criteria Validation Questionnaire

"retain" column, thus revealing a high degree of agreement relative to retaining this criterion. Hence, it appears that the criterion for this aspect is:

> Teaching machines and/or programmed learning materials should be used when diversity of ability levels is present.

Tentative Criterion Number 12 deals with the use of teaching and/or programmed learning materials for the presenting of factual information. As shown in Table 6, the jury responses on this statement are 58 per cent "retain" and 42 per cent "omit." An inspection of the data for this statement in Table 6 shows that according to the cut-off point this statement was omitted from the final criteria.

Tentative Criterion Number 13 deals with the use of teaching machines and/or programmed learning materials for gifted children. As shown in Table 6, the jury responses on this statement are 58 per cent "retain" and 42 per cent "omit." An inspection of the data for this statement in Table 6 shows that, according to the cut-off point, this statement was omitted from the final criteria.

Tentative Criterion Number 14 deals with the use of teaching machines and/or programmed learning materials when there exists a wide range of intelligence among students. As shown in Table 6, the jury responses on this statement are 68 per cent "retain" and 42 per cent "omit." An inspection of the data for this statement in Table 6 shows that, according to the cut-off point, this statement was omitted from the final criteria.

Tentative Criterion Number 15 deals with the use of teaching machines and/or programmed learning materials for immediate reinforcement is necessary at the precise level of achievement. As shown in Table 6, the jury responses on this statement are 25 per cent "retain" and 75 per cent "omit." An inspection of data for this statement in Table 6 shows that, according to the cut-off point, this statement was omitted from the final criteria.

Tentative Criterion Number 16 deals with the use of teaching machines and/or programmed learning materials when more individual instruction is needed by certain pupils than others and when it is desirable for students to progress at their own particular rate of learning. As shown in Table 6, the jury responses on this statement are 68 per cent "retain" and 32 per cent "omit." An inspection of the data for this statement in Table 6 shows that, according to the cut-off point, this statement was omitted from the final criteria.

Tentative Criterion Number 17 deals with the use of teaching machines and/or programmed learning materials when a tutor to present material and reinforce learning is not available, and particularly in such cases as when gifted or retarded children are involved. As shown in Table 6, the jury responses on this statement are 75 per cent "retain" and 25 per cent "omit." An inspection of the data for this state-ment in Table 6 shows that the jury responses clustered in the "retain" column, thus revealing a high degree of agree-ment relative to retaining this criterion. Thus, it appears

that the criterion for this aspect is:

> Teaching machines and/or programmed learning materials
> should be used when they can present material and rein-
> force learning as satisfactorily as a teacher.

Tentative Criterion Number 18 deals with the use of

teaching machines and/or programmed learning materials when

the information to be presented lends itself to a logically

organized, sequential system of learning and that information

is essentially unchanging and unopen to debate. As shown in

Table 6, the jury responses on this statement are 68 per cent

"retain" and 32 per cent "omit." An inspection of the data

for this statement in Table 6 shows that, according to the cut-

off point, this statement was omitted from the final criteria.

Tentative Criterion Number 19 deals with the use of

teaching machines and/or programmed learning materials when

basic drill and routine matters of instruction need to be

presented to students in a minimum length of time and when

this activity is restricting the teacher in relation to other

duties and potentialities. As shown in Table 6, the jury

responses on this statement are 100 per cent "retain." An

inspection of the data for this statement in Table 6 shows

that the jury responses are all in the "retain" column thus

revealing a 100 per cent agreement relative to retaining this

criterion. Hence, it appears that the criterion for this

aspect is:

> Teaching machines and/or programmed learning materials
> should be used for the learning of routine skills and
> factual information, thus releasing the teacher for more
> profitable and creative activities.

Tentative Criterion Number 20 deals with the use of teaching machines and/or programmed learning materials when the intellectual stratification of the class tends to make the simultaneous achievement of maximum uniform instruction and highest possible individual achievement impossible. As shown in Table 6, the jury responses on this statement are 68 per cent "retain" and 32 per cent "omit." An inspection of the data for this statement in Table 6 shows that, according to the cut-off point, this statement was omitted from the final criteria.

Tentative Criterion Number 21 deals with the use of teaching machines and programmed learning materials when their supplementation of other study units will be directly contributive to the desired concept formation. As shown in Table 6, the jury responses on this statement are 75 per cent "retain" and 25 per cent "omit." An inspection of the data for this statement in Table 6 shows that the jury responses clustered in the "retain" column, thus revealing a high degree of agreement relative to retaining this criterion. Thus, it appears that the criterion for this aspect is:

> Teaching machines and/or programmed learning materials should be used when they will enhance individual instruction.

Tentative Criterion Number 22 deals with the use of teaching machines and/or programmed learning materials in subject areas where information lends itself to routine tasks of instruction. As shown in Table 6, the jury response on this statement are 50 per cent "retain" and 50 per cent "omit."

An inspection of the data for this statement in Table 6 shows that, according to the cut off point, this statement was omitted from the final criteria; however, after editing and combining several criteria written in by members of the jury the following criterion evolved:

> Teaching machines and/or programmed learning materials should be used when the information to be presented can be logically and sequentially organized.

Recordings

Tentative Criterion Number 23 deals with the use of recordings when repeated audio-experiences are essential to the learning process. As shown in Table 7, the jury responses on this statement are 100 per cent "retain." An inspection of the data for this statement in Table 7 shows that the jury responses are all in the "retain" column, thus revealing a 100 per cent agreement relative to retaining this criterion in the final criteria. Inasmuch as tentative criteria numbers 23-27 are so closely related and had so many comments and written-in criteria by members of the jury, it seems advisable to combine them into four criteria. The criteria resulting from this combination and editing are listed following the analysis of tentative criterion number 27.

Tentative Criterion Number 24 deals with the use of recordings to enliven, enhance, and vivify impressions of the material being presented. As shown in Table 7, the jury responses on this statement are 92 per cent "retain" and 8 per cent "omit." An inspection of the data for this statement

TABLE 7

PERCENTAGES OF TOTAL JURY RESPONSES ON EACH OF THE
RECORDING ASPECTS OF EDUCATIONAL MEDIA UTILIZATION

Tentative Criteria	Percentage of "Retain"	Percentage of "Omit"
23. Recordings should be used when repeated audio-experiences are essential to the learning process.	100	--
24. Recordings should be used to enliven, enhance, and vivify impressions of the material being presented.	92	8
25. Recordings should be used for good musical and good narrative experiences.	92	8
26. Recordings should be used to capture original sounds and preserve them for later use.	100	--
27. Recordings should be used to overcome barriers of time and distance when particular voices are essential to a unit of study.	92	8
28. Tape recordings should be used when it is desirable for the student to hear his own sound reproduction.	75	25
29. Tape recordings should be used when a subject needs self-criticism, such as a foreign language.	84	16
30. Tape recordings should be used to evaluate oral work done by pupils.	84	16
31. Tape recordings should be used to bring the actual words of contemporary artists or the voice of celebrated performers to the classroom.	84	16

Source: Criteria Validation Questionnaire

in Table 7 shows that the jury responses clustered in the "retain" column, thus revealing a high degree of agreement relative to retaining this criterion in the final criteria. Inasmuch as tentative criteria numbers 23-27 are so closely related and had so many comments and written-in criteria by members of the jury, it seems advisable to combine them into four criteria. The criteria resulting from this combination and editing are listed following the analysis of tentative criterion number 27.

Tentative Criterion Number 25 deals with the use of recordings for good musical and good narrative experiences. As shown in Table 7, the jury responses on this statement are 92 per cent "retain" and 8 per cent "omit." An inspection of the data for this statement in Table 7 shows that the jury responses clustered in the "retain" column, thus revealing a high degree of agreement relative to retaining this criterion in the final criteria. Inasmuch as tentative criteria numbers 23-27 are so closely related and had so many comments and written-in criteria by members of the jury, it seems advisable to combine them into four criteria. The criteria resulting from this combination and editing are listed following the analysis of tentative criterion number 27.

Tentative Criterion Number 26 deals with the use of recordings to capture original sounds and preserve them for later use. As shown in Table 7, the jury responses on this statement are 100 per cent "retain." An inspection of the data for this statement in Table 7 shows that the jury

responses are all in the "retain" column, thus revealing a 100 per cent agreement relative to retaining this criterion in the final criteria. Inasmuch as tentative criteria numbers 23-27 are so closely related and had so many comments and written-in criteria by members of the jury, it seems advisable to combine them into four criteria. The criteria resulting from this combination and editing are listed following the analysis of tentative criterion number 27.

Tentative Criterion Number 27 deals with the use of recordings to overcome barriers of time and distance when particular voices are essential to a unit of study. As shown in Table 7, the jury responses on this statement are 92 per cent "retain" and 8 per cent "omit." An inspection of the data for this statement in Table 7 shows that the jury responses clustered in the "retain" column, thus revealing a high degree of agreement relative to retaining this criterion in the final criteria. A combination and editing of tentative criteria numbers 23-27 resulted in the following criteria:

Recordings should be used when repeated audio experiences enliven, enhance and vivify impressions of the material being presented.

Recordings should be used to provide students with realistic and accurate musical experiences.

Recordings should be used to provide students with unique narrative experiences.

Recordings should be used for original sound reproduction.

Tentative Criterion Number 28 deals with the use of tape recordings when it is desirable for the student to hear

his own sound reproduction. As shown in Table 7, the jury responses on this statement are 75 per cent "retain" and 25 per cent "omit." An inspection of the data for this statement in Table 7 shows that the jury responses clustered in the "retain" column, thus revealing a high degree of agreement relative to retaining this criterion in the final criteria. Inasmuch as tentative criteria numbers 28-31 are so closely related and had so many comments and written-in criteria by members of the jury, it seems advisable to combine them into one criterion. The criterion resulting from this combination is listed following the analysis of tentative criterion number 31.

Tentative Criterion Number 29 deals with the use of tape recordings in a study which needs self-criticism, such as learning a foreign language. As shown in Table 7, the jury responses on this statement are 84 per cent "retain" and 16 per cent "omit." An inspection of the data for this statement in Table 7 shows that the jury responses clustered in the "retain" category, thus revealing a high degree of agreement relative to retaining this criterion in the final criteria. Inasmuch as tentative criteria numbers 28-31 are so closely related and had so many comments and written-in criteria by members of the jury, it seems advisable to combine them into one criterion. The criterion resulting from this combination is listed following the analysis of tentative criterion number 31.

Tentative Criterion Number 30 deals with the use of

tape recordings to evaluate oral work done by pupils. As shown in Table 7, the jury responses on this statement are 84 per cent "retain" and 16 per cent "omit." An inspection of the data for this statement in Table 7 shows that the jury responses clustered in the "retain" column, thus revealing a high degree of agreement relative to retaining this criterion in the final criteria. Inasmuch as tentative criteria numbers 28-31 are so closely related and had so many comments and written-in criteria by members of the jury, it seems advisable to combine them into one criterion. The criterion resulting from this combination is listed following the analysis of tentative criterion number 31.

Tentative Criterion Number 31 deals with the use of tape recordings to bring the actual words of contemporary artists or the voice of celebrated performers to the class-room. As shown in Table 7, the jury responses on this state-ment are 84 per cent "retain" and 16 per cent "omit." An inspection of the data for this statement in Table 7 shows that the jury responses clustered in the "retain" category, thus revealing a high degree of agreement relative to retain-ing this criterion in the final criteria. A combination and editing of tentative criteria numbers 28-31 resulted in the following criterion:

> Recordings should be used to overcome barriers of time and distance when particular voices enhance the learning process.

Opaque Materials

Tentative Criterion Number 32 deals with the use of

opaque materials when non-transparent materials need to be

shown for group observation and/or evaluation. As shown in

Table 8, the jury responses on this statement are 68 per cent

"retain" and 32 per cent "omit." An inspection of the data

for this statement in Table 8 shows that according to the cut-

off point that this statement was omitted from the final

criteria; however, after editing and combining several

TABLE 8

PERCENTAGES OF TOTAL JURY RESPONSES ON EACH OF THE
OPAQUE MATERIALS ASPECTS OF EDUCATIONAL
MEDIA UTILIZATION

Tentative Criteria	Percentage of "Retain"	Percentage of "Omit"
32. Opaque materials should be used when non-transparent materials need to be shown for group observation and/or evaluation.	68	32
33. Opaque materials should be used to project images of non-transparent objects when transparent materials are not available.	84	16
34. Opaque materials should be used to enlarge small size still pictures to a large scale on desired surfaces.	100	--
35. Opaque materials should be used when the material is not suitable for transparent reproduction.	68	32

Source: Criteria Validation Questionnaire

criteria written in by members of the jury the following criterion evolved:

> Opaque materials should be used when non-transparent materials need to be shown for group observation and/or evaluation.

Tentative Criterion Number 33 deals with the use of opaque materials to project images of non-transparent materials when transparent materials are not available. As shown in Table 8, the jury responses on this statement are 84 per cent "retain" and 16 per cent "omit." An inspection of the data for this statement in Table 8 shows that the jury responses clustered in the "retain" column, thus revealing a high degree of agreement relative to retaining this criterion in the final criteria. Hence, it appears that the criterion for this aspect is:

> Opaque materials should be used to project images of non-transparent materials when economy of time makes it unfeasible to prepare material for use with another medium.

Tentative Criterion Number 34 deals with the use of opaque materials to enlarge small size still pictures to a large scale on desired surfaces. As shown in Table 8, the jury responses on this statement are 100 per cent "retain." An inspection of the data for this statement in Table 8 shows that the jury responses are all in the "retain" column, thus revealing a 100 per cent agreement relative to retaining this criterion in the final criteria. Thus, it appears that the criterion for this aspect is:

Opaque materials should be used to enlarge small size still pictures to a large scale on the chalkboard or on other surfaces for reproduction.

Tentative Criterion Number 35 deals with the use of opaque materials when the material is not suitable for transparent reproduction. As shown in Table 8, the jury responses on the statement are 68 per cent "retain" and 32 per cent "omit." An inspection of the data for this statement in Table 8 shows that, according to the cut off point, this statement was omitted from the final criteria; however, after editing and combining several criteria written in by members of the jury the following criterion evolved:

Opaque materials should be used to project three dimensional objects.

Overhead Transparencies

Tentative Criterion Number 36 deals with the use of overhead transparencies when the teacher desires to write or mark on the projection material and the making of a transparency is practical and possible. As shown in Table 9, the jury responses on this statement are 75 per cent "retain" and 25 per cent "omit." An inspection of the data for this statement in Table 9 shows that the jury responses clustered in the "retain" column, thus revealing a high degree of agreement relative to retaining this criterion in the final criteria. Thus, it appears that the criterion for this aspect is:

Overhead transparencies should be used when the teacher desires to write or mark on the projection material at the time it is being projected.

Tentative Criterion Number 37 deals with the use of

TABLE 9

PERCENTAGES OF TOTAL JURY RESPONSES ON EACH OF THE OVERHEAD
TRANSPARENCIES ASPECTS OF EDUCATIONAL MEDIA UTILIZATION

Tentative Criteria	Percentage of "Retain"	Percentage of "Omit"
36. Overhead transparencies should be used when the teacher desires to write or mark on projection material and the making of a transparency is practical and possible.	75	25
37. Overhead transparencies should be used when detailed study of a particular facet of a subject is necessary.	58	42
38. Overhead transparencies should be used when it is necessary to show the development of a whole from separate parts or when the cumulative growth of a whole needs to be studied.	75	25
39. Overhead transparencies should be used when the lecture and illustrations need to run concurrently without the teacher losing eye contact with the class.	92	8

Source: Criteria Validation Questionnaire

overhead transparencies when detailed study of a particular
facet of a subject is necessary. As shown in Table 9, the
responses on this statement are 58 per cent "retain" and 42
per cent "omit." An inspection of the data for this statement
in Table 9 shows that, according to the cut-off point, this
statement was omitted from the final criteria.

Tentative Criterion Number 38 deals with the use of overhead transparencies when it is necessary to show the development of a whole from separate parts or when the cumulative growth of a whole needs to be studied. As shown in Table 9, the responses on this statement are 75 per cent "retain" and 25 per cent "omit." An inspection of the data for this statement in Table 9 shows that the jury responses clustered in the "retain" column, thus revealing a high degree of agreement relative to retaining this criterion in the final criteria. Thus, the criterion for this aspect appears to be:

> Overhead transparencies should be used when it is necessary to show the development of a whole from separate parts or the cumulative growth of a whole.

Tentative Criterion Number 39 deals with the use of overhead transparencies when the lecture and illustrations need to run concurrently without the teacher losing eye contact with the class. As shown in Table 9, the responses on this statement are 92 per cent "retain" and 8 per cent "omit." An inspection of the data for this statement in Table 9 shows that the jury responses clustered in the retain column, thus revealing a high degree of agreement relative to retaining this criterion in the final criteria. Thus, the criterion for this aspect appears to be:

> Overhead transparencies should be used to permit the teacher to present illustrations while facing the class.

Slides

Tentative Criterion Number 40 deals with the use of

slides when prolonged projection of a still picture is
desired. As shown in Table 10, the responses on this state-
ment are 84 per cent "retain" and 16 per cent "omit." An
inspection of the data for this statement in Table 10 shows
that the jury responses are clustered in the "retain" column,
thus revealing a high degree of agreement relative to retain-
ing this criterion in the final criteria. Thus, after much

TABLE 10

PERCENTAGES OF TOTAL JURY RESPONSES ON EACH OF THE
SLIDES ASPECTS OF EDUCATIONAL MEDIA UTILIZATION

Tentative Criteria	Percentage of "Retain"	Percentage of "Omit"
40. Slides should be used when prolonged projection of a still picture is desired.	84	16
41. Slides should be used when the easily procurable slides can fit into the teaching purpose or when they can be arranged in such an order as to be meaningful.	75	25
42. Slides should be used for drill exercises.	50	50
43. Slides should be used to evaluate and review materials learned on field trips, in laboratory experiments and during class activities.	58	42
44. Slides should be used when the orderly presentation of subject matter is arranged by the teacher.	58	42

Source: Criteria Validation Questionnaire

editing and combining of criteria written in by members of
the jury the following criteria evolved:

Slides should be used for group presentation to docu-
ment field trips and laboratory experiments.

Tentative Criterion Number 41 deals with the use of
slides when the easily procurable slides can individually fit
into the teaching purpose or when they can be arranged in
such an order as to be meaningful. As shown in Table 10, the
responses on this statement are 75 per cent "retain" and 25
per cent "omit." An inspection of the data for this statement
in Table 10 shows that the jury responses clustered in the
"retain" column, thus revealing a high degree of agreement
relative to retaining this criterion in the final criteria.
Thus, after much editing and combining of criteria written in
by members of the jury the following criteria evolved:

Slides should be used when it is desirable to reduce
material presented for the purpose of easy storage and
retrieval for future use.

Tentative Criterion Number 42 deals with the use of
slides for drill exercises. As shown in Table 10, the
responses on this statement are 50 per cent "retain" and 50
per cent "omit." An inspection of the data for this statement
in Table 10 shows that, according to the cut-off point, this
statement was omitted from the final criteria.

Tentative Criterion Number 43 deals with the use of
slides to evaluate and review materials learned on field
trips, in laboratory experiments and during class activities.
As shown in Table 10, the responses on this statement are

58 per cent "retain" and 42 per cent "omit." An inspection of the data for this statement in Table 10 shows that, according to the cut-off point, this statement was omitted from the final criteria.

Tentative Criterion Number 44 deals with the use of slides when the orderly presentation of subject matter is arranged by the teacher. As shown in Table 10, the responses on this statement are 58 per cent "retain" and 42 per cent "omit." An inspection of the data for this statement in Table 10 shows that, according to the cut-off point, this statement was omitted from the final criteria.

Filmstrips

Tentative Criterion Number 45 deals with the use of filmstrips when a series of sequential photographs is to be shown and motion is not essential to concept formation. As shown in Table 11, the responses on this statement are 58 per cent "retain" and 42 per cent "omit." An inspection of the data for this statement in Table 11 shows that, according to the cut-off point, this statement was omitted from the final criteria.

Tentative Criterion Number 46 deals with the use of filmstrips when presenting programmed materials at varying speeds. As shown in Table 11, the responses on this statement are 42 per cent "retain" and 58 per cent "omit." An inspection of the data for this statement in Table 11 shows that, according to the cut-off point, this statement was omitted

TABLE 11

PERCENTAGES OF TOTAL JURY RESPONSES ON EACH OF THE
FILMSTRIPS ASPECTS OF EDUCATIONAL
MEDIA UTILIZATION

Tentative Criteria	Percentage of "Retain"	Percentage of "Omit"
45. Filmstrips should be used when a series of sequential photographs are to be shown and motion is not essential to concept formation.	58	42
46. Filmstrips should be used when presenting programmed materials at varying speeds.	42	58
47. Filmstrips should be used in full class participation units.	42	58

Source: Criteria Validation Questionnaire

from the final criteria.

Tentative Criterion Number 47 deals with the use of filmstrips in full class participation units because the film may be stopped by frames and each frame discussed. As shown in Table 11, the responses on this statement are 58 per cent "retain" and 42 per cent "omit." An inspection of the data for this statement in Table 11 shows that, according to the cut-off point, this statement was omitted from the final criteria. Since all statements were omitted from the final criteria the following criteria resulted from a combination of criteria statements written in by members of the jury and a conference with dissertation advisor.

Filmstrips should be used when motion is not essential.

Filmstrips should be used when it is desirable to stop and discuss individual frames.

Motion Picture Films

Tentative Criterion Number 48 deals with the use of motion picture films when no other media can do the job as well and motion is essential to learning. As shown in Table 12, the jury responses on this statement are 100 per cent "retain." An inspection of the data for this statement in Table 12 shows that the jury responses are all in the "retain"

TABLE 12

PERCENTAGES OF TOTAL JURY RESPONSES ON EACH OF THE MOTION PICTURE FILMS ASPECTS OF EDUCATIONAL MEDIA UTILIZATION

Tentative Criteria	Percentage of "Retain"	Percentage of "Omit"
48. Motion picture films should be used when no other media can do the job as well and motion is essential to learning.	100	--
49. Motion picture films should be used when both sound and motion are necessary to the understanding of the lesson presented.	75	25
50. Motion picture films should be used for the multiple purposes of when the material to be presented ties in with the lecture.	68	32
51. Motion picture films should be used to reconstruct past events.	84	16
52. Motion picture films should be used to create realistic learning situations.	84	16

TABLE 12--Continued.

Tentative Criteria	Percentage of "Retain"	Percentage of "Omit"
53. Motion picture films should be used to promote positive changes in students' interest, learning efficiency, retention of learning and reading performance.	68	32
54. Eight millimeter motion picture films should be used when the teacher wishes to produce his own teaching film material.	84	16
55. Eight millimeter motion picture films should be used to record school, classroom activities, and community-school projects.	58	42
56. Eight millimeter motion picture films should be used when motion and sequence are essential, yet sound may be omitted.	75	25
57. Eight millimeter motion picture films should be used when no sixteen millimeter film is available on the subject.	16	84
58. Eight millimeter motion picture films should be used with subject matter suitable for small group instruction.	92	8

Source: Criteria Validation Questionnaire

column, thus revealing a 100 per cent agreement relative to retaining this criterion in the final criteria. Thus the criterion for this aspect appears to be:

Motion picture films should be used when no other media will accomplish the desired ends and when they present the material more effectively than the teacher can.

Tentative Criterion Number 49 deals with the use of motion picture films when both sound and motion are necessary to the understanding of the lesson presented. As shown in Table 12, the jury responses on this statement are 75 per cent "retain" and 25 per cent "omit." An inspection of the data for this statement in Table 12 shows that the jury responses are clustered in the "retain" column, thus revealing a high degree of agreement relative to retaining this criterion. Hence, it appears that the criterion for this aspect is:

> Motion picture films should be used when the combination of verbalization and motion are essential to the learning process.

Tentative Criterion Number 50 deals with the use of motion picture films for the multiple purposes of when the material to be presented ties in with the lecture, when it presents the material more effectively than the teacher can or when visual motion and sound are important to the concept being taught. As shown in Table 12, the jury responses on this statement are 68 per cent "retain" and 32 per cent "omit." An inspection of the data for this statement in Table 12 shows that, according to the cut-off point, this statement was omitted from the final criteria.

Tentative Criterion Number 51 deals with the use of motion picture films to reconstruct past events. As shown in Table 12, the jury responses on this statement are 84 per cent "retain" and 16 per cent "omit." An inspection of the data for this statement in Table 12 shows that the jury responses are clustered in the "retain" column, thus revealing

a high degree of agreement relative to retaining this crite-
rion. Thus, it appears that the criterion for this aspect is:

Motion picture films should be used when modification
of time, size, and space are needed: slow motion, time
lapse, animation, or reconstruction of past events.

Tentative Criterion Number 52 deals with the use of
motion picture films to create realistic learning situations
which closely simulate the original situation. As shown in
Table 12, the jury responses on this statement are 84 per cent
"retain" and 16 per cent "omit." An inspection of the data
for this statement in Table 12 shows that the jury responses
are clustered in the "retain" column, thus revealing a high
degree of agreement relative to retaining this criterion.
After much editing and combining of criteria written in by
members of the jury the following criteria evolved.

Motion picture films should be used when the experi-
ences presented vicariously contribute to the lecture.

Motion picture films should be used for the purpose
of review and summarization.

Tentative Criterion Number 53 deals with the use of
motion picture films to promote positive changes in students'
interest, learning efficiency, retention of learning and
reading performance. As shown in Table 12, the jury responses
on this statement are 68 per cent "retain" and 32 per cent
"omit." An inspection of the data for this statement in
Table 12 shows that, according to the cut off point, this
statement was omitted from the final criteria; however, after
editing and combining several criteria written in by members
of the jury the following criterion evolved:

Motion picture films should be used as a source of student motivation.

Tentative Criterion Number 54 deals with the use of eight millimeter motion picture films when the teacher wishes to produce his own teaching film material. As shown in Table 12,--the jury responses on this statement are 84 per cent "retain" and 16 per cent "omit." An inspection of the data for this statement in Table 12 shows that the jury responses clustered in the "retain" column, thus revealing a high degree of agreement relative to retaining this criterion, thus, it appears after much editing and combining of criteria written in by members of the jury that the criterion for this aspect is:

Eight millimeter motion picture films should be used when cost is not essential.

Tentative Criterion Number 55 deals with the use of eight millimeter motion picture films to record school events, community-school projects, or classroom activities for later use. As shown in Table 12, the jury responses on this statement are 58 per cent "retain" and 42 per cent "omit." An inspection of the data for this statement in Table 12 shows that, according to the cut-off point, this statement was omitted from the final criteria.

Tentative Criterion Number 56 deals with the use of eight millimeter motion picture films when motion and sequence are essential, yet sound may be omitted. As shown in Table 12, the jury responses on this statement are 75 per cent "retain" and 25 per cent "omit." An inspection of the data

for this statement in Table 12 shows that the jury responses are clustered in the "retain" column, thus revealing a high degree of agreement relative to retaining this criterion. Thus, the criterion for this aspect is:

Eight millimeter motion picture films should be used when sound is not essential.

Tentative Criterion Number 57 deals with the use of eight millimeter motion picture films when motion is needed to present an understanding of a certain concept but no acceptable sixteen millimeter film is available; the teacher could find and record for his own particular record and thus get exactly and only that material needed for a particular lesson or demonstration. As shown in Table 12, the jury responses on this statement are 16 per cent "retain" and 84 per cent "omit." An inspection of the data for this statement in Table 12 shows that, according to the cut-off point, this statement was omitted from the final criteria.

Tentative Criterion Number 58 deals with the use of eight millimeter motion picture films in dealing with subject matter suitable for small group instruction. As shown in Table 12, the jury responses on this particular statement are 92 per cent "retain" and 8 per cent "omit." An inspection of the data for this statement in Table 12 shows that the jury responses are clustered in the "retain" column, thus revealing a high degree of agreement relative to retaining this criterion. Thus, the criterion for this aspect is:

Eight millimeter motion picture films should be used only for small group and individual instruction.

Additional Jury Comments

As stated before, space for additional comments, suggestions, or criteria was provided under each main aspect to give the members of the jury a chance to suggest additional aspects and criteria. Criteria, comments, and suggestions were made and were included in the formulation of the final criteria.

Statement of Criteria

On the basis of responses from the jury of highly competent authorities in the educational media field to the educational media aspects described above, it appears that the following criteria are reasonably adequate for evaluating the use of educational media in the teaching of library science in accredited American graduate library schools. Since some of the statements listed in the questionnaire were so closely related, some of them were combined in formulating the final criteria, consequently reducing the fifty-eight tentative criteria to thirty-eight final criteria. These are listed by major aspects in rank order as determined by the judgments of the jury.

General Aspect

This aspect includes two criteria as follows:

1. Educational media should be used when they contribute to the clarity of a particular lesson and, subsequently, to the improvement of instruction.

2. Continuous inservice education in the use of educational media and in the use of whatever new instructional

devices, materials, and techniques are developed and are available should be carried on as a means of improving instruction.

Educational Television Aspect

This aspect has six criteria as follows:

3. Educational television should be used to disseminate information from sources that are not readily available.

4. Educational television should be used when the size of the audience or learning groups is sufficient to justify the cost.

5. Educational television should be used to present live current events as they are happening when the pictorial aspect of the presentation enhances learning.

6. Educational television should be used only when it enhances learning.

7. Educational television should be used for in-service education when it is feasible and suitable.

8. Educational television should be used when a unit of material is of such a nature that it lends itself to mass dissemination to widely dispersed audiences.

Teaching Machines and/or Programmed Learning Materials Aspect

This aspect has five criteria as follows:

9. Teaching machines and/or programmed learning materials should be used when diversity of ability levels is present.

10. Teaching machines and/or programmed learning materials should be used when they can present material and reinforce learning as satisfactorily as a teacher.

11. Teaching machines and/or programmed learning materials should be used for the learning of routine skills and factual information, thus releasing the teacher for more profitable and creative activities.

12. Teaching machines and/or programmed learning materials should be used when they will enhance individual instruction.

13. Teaching machines and/or programmed learning materials should be used when the information to be presented can be logically and sequentially organized.

Recordings Aspect

This aspect has five criteria as follows:

14. Recordings should be used when repeated audio experiences enliven, enhance and vivify impressions of the material being presented.

15. Recordings should be used to provide students with realistic and accurate musical experiences.

16. Recordings should be used to provide students with unique narrative experiences.

17. Recordings should be used for original sound reproductions.

18. Recordings should be used to overcome barriers of time and distance when particular voices enhance the learning process.

Opaque Materials Aspect

This aspect has four criteria as follows:

19. Opaque materials should be used when non-transparent materials need to be shown for group observation and/or evaluation.

20. Opaque materials should be used to project images of non-transparent materials when economy of time makes it unfeasible to prepare materials for use with another medium.

21. Opaque materials should be used to enlarge small size still pictures to a large scale on the chalkboard or on other surfaces for reproduction.

22. Opaque materials should be used to project three dimensional objects.

Overhead Transparencies Aspect

This aspect has three criteria as follows:

23. Overhead transparencies should be used when the teacher desires to write or mark on the projection material at the time it is being presented.

24. Overhead transparencies should be used when it is necessary to show the development of a whole from separate parts or the cumulative growth of a whole.

25. Overhead transparencies should be used to permit the teacher to present illustrations while facing the class.

Slides Aspect

This aspect has two criteria as follows:

26. Slides should be used for group presentation to document field trips and laboratory experiments.

27. Slides should be used when it is desirable to reduce material presented for the purpose of easy storage and retrieval for future use.

Filmstrips Aspect

This aspect has two criteria as follows:

28. Filmstrips should be used when motion is not essential.

29. Filmstrips should be used when it is desirable to stop and discuss individual frames.

Motion Picture Films Aspect

This aspect has nine criteria as follows:

30. Motion picture films should be used when no other media will accomplish the desired ends and when the present the material more effectively than the teacher can.

31. Motion picture films should be used when the combination of verbalization and motion are essential to the learning process.

32. Motion picture films should be used when modification of time, size, and space are needed: slow motion, time lapse, animation, or reconstruction of past events.

33. Motion picture films should be used when the experiences presented vicariously contribute to the lecture.

34. Motion picture films should be used for the purpose of review and summarization.

35. Motion picture films should be used as a source of student motivation.

36. Eight millimeter motion picture films should be used when cost is not essential.

37. Eight millimeter motion picture films should be used when sound is not essential.

38. Eight millimeter motion picture films should be used only for small group and individual instruction.

Adoption of a Format of the Evaluative Checklist

Following the formulation of the final criteria, the investigator proceeded to develop a format for the instrument that would permit the evaluator to make value judgment as to how well his use of educational media relates to the criteria that were developed. The format of William Ray Fulton's[22] instrument was used in its entirety. The format of Fulton's instrument is one in which descriptive statements of situations in educational media programs are presented and provisions made for the evaluator to compare his program to the statements. The instrument developed for the purpose of this study is one in which descriptive statements of situations in which the use of educational media are presented. Provisions were also made for the evaluator to compare his use of educational media to the statements. The "higher" level reflects the criteria that were developed as a basis for the evaluation instrument. The "middle" description is one in which

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[22]Fulton, op. cit.

educational media are used but fall far below these criteria, and the "lower" descriptions are situations in which educational media are used but used far below the criteria reflected by the instrument.

These three descriptions of situations existing in the use of educational media were written for each aspect that has been previously identified. The "higher" statements reflect the criteria that are developed, thereby describing use considered as strong. The "middle" statements describe the use considered neither strong nor weak, and the "lower" statements describe the use considered weak. It was assured that the evaluator was able to ascertain the strength or weakness of these aspects in his use by comparing his use to the descriptive statements.

Development of the First Draft of the Evaluative Checklist

The next step was to formulate a tentative draft of the evaluative instrument. The most critical task involved in this phase of the study was the writing of descriptive statements for each item of the evaluative instrument. One item, consisting of three descriptive statements, was formulated for each aspect that had been selected for inclusion in the evaluative instrument.

The three descriptive statements included in each item corresponded to three levels of use ranging from weak to strong; however, they were not so identified in the main body of the evaluative instrument. The "higher" statements

reflected the optimum criteria, thereby describing use con-
sidered to be strong. The "middle" statement described use
considered neither strong nor weak, and the "lower" statements
described use considered to be weak. Thus, the evaluator
could ascertain the strength or weakness of aspects of his
own use by comparing it to these descriptive statements.

It seemed apparent to the investigator that some
aspects of the use of educational media could not be accu-
rately related to one of the three descriptive statements.
It, therefore, seemed necessary to enable the evaluator to
judge his use as falling precisely on one of the descriptive
statements, or above or below any of the statements.

Therefore, under each item nine numbers were provided
for the evaluator to check. Three numbers were situated at
the left of each descriptive statement in the instrument, as
shown by the following example:

1 2 3   In my teaching situation, I rarely make use of
        educational media.

4 5 6   In my teaching situation, I make occasional use of
        educational media.

7 8 9   In my teaching situation, I use educational media
        whenever they are needed in the learning process.

Thus, the evaluator could select the statement that
described his use best and then check whether it was precisely
like the description, above the description, or below the
description.

For example, an evaluator who makes occasional use

of educational media would select the middle statement as representative of his situation. Finding that his situation is the same as the statement, he would check the number 5.

Refinement of Subsequent Drafts of the Evaluative Checklist

The first draft of the evaluative instrument was closely examined and all apparent inconsistencies corrected.

A revised draft incorporating these corrections was prepared. A decision was made to pre-test this revision of the instrument.

Development of the Inventory Check Sheet

It appeared that an Inventory Check Sheet could be formulated that, if used by the deans and directors, would yield information concerning the current status of educational media available to teachers in accredited American graduate library schools. An inventory sheet was formulated with the view of including it with the evaluative instrument sent to each of the deans and directors of all accredited American graduate library schools.

Formulating the Inventory Check Sheet required listing many types of educational media that a library school might have. These were arranged in a format that would allow an evaluator systematically to gather and study information pertinent to the current status of availability.

The Inventory Check Sheet includes three sections relating to (1) the identification of the library school

being inventoried; (2) an inventory of all equipment available to the library school; and (3) an inventory of all materials available to the library school (see Appendix K). The inventory sheet was constructed so as to include each educational media item included in the standards developed by Gene Faris and Mendel Sherman.[23] It is recognized that there is no unanimity in the field regarding the acceptance of these standards; however, they are used in this study because they are the best quantitative measuring device available in the field.

The Quantitative Standards for Audiovisual Personnel, Equipment and Materials in Elementary, Secondary, and Higher Education are designed to be used in judging the adequacy of educational media in elementary, secondary, and higher education. Specified quantities of material, equipment, and budget and statements related to personnel are placed in columns designated as "basic" and "advanced." Only the higher education section, (materials and equipment) of the standards is applicable to this study.

These standards were developed as part of a study conducted under the auspices of an NDEA Title VII research contract and were accepted as standards by the Executive Committee of the Association of Chief State School Audio-Visual Officers at their December, 1965 meeting in Chicago, Illinois.

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[23]Faris and Sherman, op. cit.

It was thought that information concerning the current status of educational media programs as revealed by this inventory would help a dean or a director to make the judgments required in the completion of the evaluative instrument.

Pre-Test of the Evaluative Checklist and Inventory Check Sheet

The purpose of the pre-test was to determine on a limited scale whether or not the instrument, as written, was reliable as a self-evaluating and self-interpreting instrument. Was it clear and useable in the evaluation of the use of educational media? More specifically, the pre-test was conducted to determine whether or not respondents could understand each item in the instrument, could respond intelligently to each item, and could interpret the results of each response. If so, it was reasonable to assume that the evaluative instrument items were valid.

The instrument was pre-tested using a restricted sample of the part-time faculty members of the University of Oklahoma's School of Library Science and the University's College of Education and Audio-Visual Center.

Revisions were made in the instrument items where the need was evidenced by the pre-test. These changes were minor and did not change the over-all structure of the instrument or of any item included in the checklist.

It was concluded from the pre-tests that the instrument apparently was useable in the evaluation of the use of educational media in teaching, that an evaluator could respond

intelligently to each item in the instrument, and that one could infer the adequacy of use of educational media by studying the results of the instrument.

CHAPTER III

ANALYSIS AND EVALUATION OF DATA

Introduction

The purpose of this chapter is to present an analysis

and evaluation of data on the use of educational media in the

teaching of library science in accredited graduate library

schools. This chapter is divided into two sections as

follows: section one, an analysis and evaluation of data

received from the Evaluative Checklist, and section two, an

analysis and evaluation of data received from the Inventory

Check Sheet. Section one is divided into nine parts, each

dealing with a major aspect of the use of educational media,

including its sub-items. The parts are as follows: (1)

general, (2) educational television, (3) teaching machines

and/or programmed learning materials, (4) recordings, (5)

opaque materials, (6) overhead transparencies, (7) slides,

(8) filmstrips and (9) motion picture films. Section two

has only one part, the extent to which DAVI standards are

met. Each of the parts in section one includes a statement

of criterion, an analysis of data and an evaluative statement.

In order to deal with the variable of size, the thirty-three

accredited American graduate library schools were divided

into three ranges. Schools with four to six full-time faculty members made up Range 1; schools with seven to ten full-time faculty members made up Range 2; and schools with eleven to fifteen full-time faculty members made up Range 3.

The Extent to Which Criteria Are Met

Part 1.--General

The Role of Educational Media in Instruction

Criterion 1.--Educational media should be used when they contribute to the clarity of a particular lesson and, subsequently, to the improvement of instruction.

Analysis of data.--Item A of the general aspect of the Evaluative Checklist dealing with the role of educational media in instruction is designed to elicit judgmental responses regarding the extent to which a teacher's use of educational media meets the criteria stated above. Table 13 shows the percentage of teachers in each of the three full-time faculty size categories which were judged by Evaluative Checklist respondents as being in the low, middle, or higher ranges of educational media utilization. Seven per cent of the respondents in schools with four to six full-time faculty members judged the role of educational media in instruction to be in the low range, 63 per cent in the middle range and 30 per cent in the higher range. Seventeen per cent of the respondents in schools with seven to ten full-time faculty members judged the role of educational media in instruction

TABLE 13

PERCENTAGE OF SCHOOLS IN EACH RANGE OF THE USE OF EDUCATIONAL MEDIA IN
INSTRUCTION AND INSERVICE EDUCATION IN THE USE OF EDUCATIONAL
MEDIA AS MEASURED BY THE "GENERAL" SECTION OF THE
EVALUATIVE CHECKLIST

Educational Media Utilization Aspects	Range of Educational Media Utilization								
	Low			Middle			Higher		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
A. The Role of Educational Media in Instruction	7	17	29	63	65	60	30	18	11
B. The Provision for In-service Education in the Use of Educational Media	40	60	53	49	27	38	11	13	9

Source: Evaluative Checklist, Section General

Column (1) = 4-6 full-time faculty members

Column (2) = 7-10 full-time faculty members

Column (3) = 11-15 full-time faculty members

to be in the low range, 65 per cent in the middle range, and 18 per cent in the higher range. Twenty-nine per cent of the respondents in schools with eleven to fifteen full-time faculty members judged the role of educational media in instruction to be in the low range, 60 per cent in the middle range and 11 per cent in the higher range.

Evaluative judgment.--The data cited indicate that the teachers included in this study were generally neither weak nor strong in the utilization of educational media for the clarity of a particular lesson and, subsequently, to the improvement of instruction.

Provisions for Inservice Education in the Use
of Educational Media

Criterion 2.--Continuous inservice education in the use of educational media, including new instructional devices and materials should be carried on as a means of improving instruction.

Analysis of data.--Item B of the general aspect of the Evaluative Checklist dealing with provisions for inservice education in the use of educational media is designed to elicit judgmental responses regarding the extent to which a school meets the criteria stated above. Table 13 shows the percentage of teachers in each of the three full-time faculty size categories which were judged by Evaluative Checklist respondents as being in the low, middle, or higher ranges of educational media utilization. Forty per cent of respondents in schools with four to six full-time faculty members judged

provisions for inservice education in the use of educational media as being in the low range, 49 per cent in the middle range and 11 per cent in the higher range. Sixty per cent of the respondents in schools with seven to ten full-time faculty members judged provisions for inservice education in the use of educational media in the low range, 27 per cent in the middle range and 13 per cent in the strong range. Fifty-three per cent of respondents in schools with eleven to fifteen full-time faculty members judged provisions for inservice education in the use of educational media in the low range, 38 per cent in the middle range, and 9 per cent in the higher range.

Evaluative judgment.--The data cited indicate that the schools included in this study were generally neither weak nor strong in providing continuous inservice education in the use of educational media, including new instructional devices and materials as a means of improving instruction.

Part 2.--Educational Television

Dissemination of Information by Educational Television

Criterion 3.--Educational television should be used to disseminate information from sources that are not readily available.

Analysis of data.--Item A of the educational television aspect of the Evaluative Checklist dealing with the use of educational television to disseminate information from

sources that are not readily available is designed to elicit
judgmental responses regarding the extent to which a teacher's
use of educational television meets the criteria stated above.
Table 14 shows the percentages of teachers in each of the
three full-time faculty size categories which were judged by
Evaluative Checklist respondents as being in the low, middle,
or higher ranges of educational media utilization. Eighty-
four per cent of the respondents in schools with four to six
full-time faculty members judged the use of educational
television to disseminate information from sources that are
not readily available to be in the low range, 14 per cent in
the middle, and 2 per cent in the higher range. Eighty-four
per cent of the respondents in schools with seven to ten
full-time faculty members judged the use of educational
television to disseminate information from sources that are
not readily available to be in the low range, 12 per cent
to be in the middle range, and 4 per cent in the higher range.
Ninety-three per cent of the respondents in schools with four
to six full-time faculty members judged the use of educational
television to disseminate information from sources that are
not readily available to be in the low range, 7 per cent in
the middle range and no per cent in the higher range.

Evaluative judgment.--The data cited indicate that the
teachers included in this study were generally weak in the
use of educational television to disseminate information from
sources that are not readily available.

TABLE 14

PERCENTAGE OF SCHOOLS IN EACH RANGE OF EDUCATIONAL MEDIA USE OF "EDUCATIONAL TELEVISION" AS MEASURED BY THE EVALUATIVE CHECKLIST

| Educational Media Utilization Aspects | Range of Educational Media Utilization | | | | | | | | |
| | Low | | | Middle | | | Higher | | |
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
A. Dissemination of Information by Educational Television	84	84	93	14	12	7	2	4	0
B. Pictorial Current Events Depicted by Educational Television	91	87	95	5	12	5	4	1	0
C. Use of Educational Television to Reach Widely Dispersed Audiences	95	83	96	5	13	4	0	4	0

Source: Evaluative Checklist, Section 1

Column (1) = 4-6 full-time faculty members

Column (2) = 7-10 full-time faculty members

Column (3) = 11-15 full-time faculty members

Pictorial Current Events Depicted by Educational Television

Criterion 4.--Educational television should be used to present live current events as they are happening when the pictorial aspect of the presentation enhances learning.

Analysis of data.--Item B of the educational television aspect of the Evaluative Checklist dealing with the use of educational television to present live current events as they are happening when the pictorial aspect of the presentation enhances learning is designed to elicit judgmental responses regarding the extent to which a teacher's use of educational television meets the criteria stated above. Table 14 shows the percentages of teachers in each of the three full-time faculty size categories which were judged by Evaluative Checklist respondents as being in the low, middle, or higher range of educational media utilization. Ninety-one per cent of the respondents in schools with four to six full-time faculty members judged the use of educational television to present live current events as they are happening when the pictorial aspect of the presentation enhances learning to be in the low range, 5 per cent to be in the middle range and 4 per cent to be in the higher range. Eighty-seven per cent of the respondents in schools with seven to ten full-time faculty members judged the use of educational television to present live current events as they are happening to be in the low range, 12 per cent in the middle, and 1 per cent to be in the higher range. Ninety-five per cent of the respondents in schools with eleven to

fifteen full-time faculty members judged the use of educa-

tional television to present live current events as they are

happening when the pictorial aspect of the presentation en-

hances learning to be in the low range, 5 per cent in the

middle range and no per cent in the higher range.

Evaluative judgment.--The data cited indicate that

the teachers included in this study were weak in the use of

educational television to present live current events as they

are happening when the pictorial aspect of the presentation

enhances learning.

Use of Educational Television to Reach Widely Dispersed Audiences

Criterion 5.--Educational television should be used
for: a. inservice education when a unit of material is of
such a nature that it lends itself to mass dissemination to
widely dispersed audiences; b. learning groups which are
sufficiently large to justify the cost.

Analysis of data.--Item C of the educational televi-

sion aspect of the Evaluative Checklist dealing with the use

of educational television to reach widely dispersed audiences

is designed to elicit judgmental responses regarding the

extent to which a teacher's use of educational television

meets the criteria stated above. Table 14 shows the percent-

age of teachers in each of the three full-time faculty size

categories which were judged by Evaluative Checklist

respondents as being in the low, middle, or higher ranges of

educational media utilization. Ninety-five per cent of the

respondents in schools with four to six full-time faculty members judged the use of educational television to reach widely dispersed audiences to be in the low range, 5 per cent in the middle, and no per cent in the higher range. Eighty-three per cent of the respondents in schools with seven to ten full-time faculty members judged the use of educational television to reach widely dispersed audiences to be in the low·range, 13 per cent the middle range and 4 per cent to be in the higher range. Ninety-six per cent of the respondents in schools with eleven to fifteen full-time faculty members judged the use of educational television to reach widely dispersed audiences to be in the low range, 4 per cent to be in the middle range and no per cent to be in the higher range.

Evaluative judgment.--The data cited indicate that the teachers included in this study were weak in the use of educational television to reach widely dispersed audiences.

Part 3.--Teaching Machines and/or Programmed Learning Materials

Use of Teaching Machines and/or Programmed Learning Materials in the Immediate Reinforcement of Subject Matter

Criterion 6.--Teaching machines and/or programmed learning materials should be used when: a. the diversity of ability levels is present, and b. immediate reinforcement of subject matter can be accomplished as satisfactorily as by the teacher.

Analysis of data.--Item A of the teaching machine and/or programmed learning materials aspect of the Evaluative

Checklist dealing with the use of teaching machines and/or programmed learning materials in the immediate reinforcement of subject matter is designed to elicit judgmental responses regarding the extent to which a teacher's use of teaching machines and/or programmed learning materials meets the criteria stated above. Table 15 shows the percentage of teachers in each of the three full-time faculty size categories which were judged by Evaluative Checklist respondents as being in the low, middle, or higher ranges of educational media utilization. Ninety-six per cent of the respondents in schools with four to six full-time faculty members judged the use of teaching machines and/or programmed learning materials in the immediate reinforcement of subject matter to be in the low range, 4 per cent in the middle range, and no per cent in the higher range. Eighty-six per cent of the respondents in schools with seven to ten full-time faculty members judged the use of teaching machines and/or programmed learning materials in the immediate reinforcement of subject matter to be in the low range, 12 per cent in the middle, and 2 per cent to be in the higher range. Ninety-seven per cent of the respondents in schools with eleven to fifteen faculty members judged the use of teaching machines and/or programmed learning materials in the immediate reinforcement of subject matter to be in the low range, 4 per cent in the middle range and no per cent in the higher range.

Evaluative judgment.--The data cited indicate that

TABLE 15

PERCENTAGE OF SCHOOLS IN EACH RANGE OF EDUCATIONAL MEDIA USE OF
"TEACHING MACHINES AND/OR PROGRAMMED LEARNING MATERIALS" AS
MEASURED BY THE EVALUATIVE CHECKLIST

| Educational Media Utilization Aspects | Range of Educational Media Utilization | | | | | | | | |
| | Low | | | Middle | | | Higher | | |
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
A. Use of Teaching Machines and/or Programmed Learning Materials in the Immediate Reinforcement of Subject Matter	96	86	97	4	12	2	0	2	1
B. Use of Teaching Machines and/or Programmed Learning Materials in Learning Routine Skills and Factual Information	75	87	96	25	11	4	0	2	0

Source: Evaluative Checklist, Section 2

Column (1) = 4-6 full-time faculty members

Column (2) = 7-10 full-time faculty members

Column (3) = 11-15 full-time faculty members

84

the teachers included in this study were weak in the use of
teaching machines and/or programmed learning materials as an
immediate reinforcement of subject matter.

Use of Teaching Machines and/or Programmed Learning Materials in Learning Routine Skills and Factual Information

Criterion 7.--Teaching machines and/or programmed
learning materials should be used when: a. the diversity of
ability levels is present; b. the learning of factual informa-
tion can be presented in a logical and sequential manner; and
c. the enhancement of individual instruction.

Analysis of data.--Item B of the teaching machines
and/or programmed learning materials aspect of the Evaluative
Checklist dealing with the use of teaching machines and/or
programmed learning materials in learning routine skills
and factual information is designed to elicit judgmental
responses regarding the extent to which a teacher's use of
teaching machines and/or programmed learning materials meets
the criteria stated above. Table 15 shows the percentage of
teachers in each of the three full-time faculty size cate-
gories which were judged by Evaluative Checklist respondents
as being in the low, middle, or higher ranges of educational
media utilization. Seventy-five per cent of the respondents
in schools with four to six full-time faculty members judged
the use of teaching machines and/or programmed learning mate-
rials in learning routine skills and factual information to
be in the low range, 25 per cent in the middle range, and
no per cent in the higher range. Eighty-seven per cent of
the respondents in schools with seven to ten full-time faculty

members judged the use of teaching machines and/or programmed learning materials in learning routine skills and factual information to be in the low range, 11 per cent in the middle range, and 2 per cent in the higher range. Ninety-six per cent of the respondents in schools with eleven to fifteen full-time faculty members judged the use of teaching machines and/or programmed learning materials in learning routine skills and factual information to be in the low range, 4 per cent in the middle range, and no per cent in the higher range.

Evaluative judgment.--The data cited indicate that the teachers included in this study were weak in the use of teaching machines and/or programmed learning materials in learning routine skills and factual information.

Part 4.--Recordings

Use of Recordings to Enliven, Enhance, and Vivify Impressions of Materials

Criterion 8.--Recordings should be used when repeated audio experiences enliven, enhance, and vivify impressions of the material presented.

Analysis of data.--Item A of the recording aspect of the Evaluative Checklist dealing with the use of recordings to enliven, enhance, and vivify impressions of materials is designed to elicit judgmental responses regarding the extent to which a teacher's use of recordings meets the criteria stated above. Table 16 shows the percentages of teachers in each of the three full-time faculty size categories which

TABLE 16

PERCENTAGE OF SCHOOLS IN EACH RANGE OF EDUCATIONAL MEDIA USE OF
"RECORDINGS" AS MEASURED BY THE EVALUATIVE CHECKLIST

Educational Media Utilization Aspects	Range of Educational Media Use Utilization								
	Low			Middle			Higher		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
A. Use of Recordings to Enliven, Enhance, and Vivify Impressions of Materials	67	68	72	19	24	15	14	8	13
B. Use of Recordings to Provide Realistic and Unique Narrative Experiences, to Capture Original Sounds, and to Overcome Barriers of Time and Distance	77	77	71	18	17	17	5	6	12

Source: Evaluative Checklist, Section 3

Column (1) = 4-6 full-time faculty members

Column (2) = 7-10 full-time faculty members

Column (3) = 11-15 full-time faculty members

were judged by Evaluative Checklist respondents as being in the low, middle, and higher ranges of educational media utilization. Sixty-seven per cent of the respondents in schools with four to six full-time faculty members judged the use of recordings to enliven, enhance, and vivify impressions of materials to be in the low range, 19 per cent in the middle range, and 14 per cent in the higher range. Sixty-eight per cent of the respondents in schools with seven to ten full-time faculty members judged the use of recordings to enliven, enhance, and vivify impressions of materials to be in the low range, 24 per cent in the middle range, and 8 per cent in higher range. Seventy-two per cent of the respondents in schools with eleven to fifteen full-time faculty members judged the use of recordings to enliven, enhance, and vivify impressions of materials to be in the low range, 12 per cent in the middle range, and 13 per cent in the higher range.

Evaluative judgment.--The data cited indicate that the teachers included in this study were weak in the use of recordings to enliven, enhance, and vivify impressions of materials.

Use of Recordings to Provide Realistic and Accurate Music and Unique Narrative Experiences, to Capture Original Sounds, and to Overcome Barriers of Time and Distance

Criterion 9.--Recordings should be used to provide students with: a. realistic and accurate musical experiences; b. unique narrative experiences; c. original sound reproduction; and d. particular voices of the past in order to overcome time and distance when these voices enhance the learning process.

Analysis of data.--Item B of the recording aspect of
the Evaluative Checklist dealing with the use of recordings
to provide realistic and accurate music and unique narrative
experiences, to capture original sounds, and to overcome
barriers of time and distance is designed to elicit judgmental
responses regarding the extent to which a teacher's use of
recordings meets the criteria stated above. Table 16 shows
the percentage of teachers in each of the three full-time
faculty size categories which were judged by Evaluative
Checklist respondents as being in the low, middle, or higher
range of educational media utilization. Seventy-seven per
cent of the respondents in schools with four to six full-time
faculty members judged the use of recordings to provide
realistic and accurate musical and unique narrative experi-
ences, to capture original sounds, and to overcome barriers
of time and distance to be in the low range, 18 per cent to
be in the middle range and 5 per cent to be in the higher
range. Seventy-seven per cent of the respondents in schools
with four to six full-time faculty members judged the use of
recordings to provide realistic and accurate musical and
unique narrative experiences, to capture original sounds,
and to overcome barriers of time and distance to be in the
low range, 17 per cent to be in the middle range, and 6 per
cent to be in the higher range. Seventy-one per cent of the
respondents in schools with eleven to fifteen full-time
faculty members judged the use of recordings to provide
realistic and accurate musical and unique narrative

experiences, to capture original sounds, and to overcome

barriers of time and distance to be in the low range, 17

per cent to be in the middle range and 12 per cent to be in

the higher range.

Evaluative judgment.--The data cited indicated that

the teachers included in this study were weak in the use of

recordings to provide realistic and accurate musical and

unique narrative experiences, to capture original sounds, and

to overcome barriers of time and distance.

Part 5.--Opaque Materials

Use of Opaque Materials for Non-Transparent Materials to be Used for Group Observation and Economy of Time

Criterion 10.--Opaque materials should be used when
non-transparent materials will contribute to: a. group ob-
servation and/or evaluation; and b. economy of time when it
is unfeasible to prepare material for use with another medium.

Analysis of data.--Item A of the opaque materials

aspect of the Evaluative Checklist dealing with the use of

opaque materials for non-transparent materials to be used for

group observation and economy of time is designed to elicit

judgmental responses regarding the extent to which a teacher's

use of opaque materials meets the criteria stated above.

Table 17 shows the percentage of teachers in each of the

three full-time faculty size categories which were judged by·

Evaluative Checklist respondents as being in the low, middle,

or higher range of educational media utilization. Sixty-nine

TABLE 17

PERCENTAGE OF SCHOOLS IN EACH RANGE OF EDUCATIONAL MEDIA USE OF
"OPAQUE MATERIALS" AS MEASURED BY THE EVALUATIVE CHECKLIST

| Educational Media Utilization Aspects | Range of Educational Media Utilization | | | | | | | | |
| | Low | | | Middle | | | Higher | | |
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
A. Use of Opaque Materials for Non-Transparent Materials to be Used for Group Observation and Economy of Time	65	52	51	30	36	38	5	12	11
B. Use of Opaque Materials to Enlarge Small Size Still Pictures and to Project Three Dimensional Objects	73	77	70	23	15	17	4	8	13

Source: Evaluative Checklist, Section 4

Column (1) = 4-6 full-time faculty members

Column (2) = 7-10 full-time faculty members

Column (3) = 11-15 full-time faculty members

per cent of the respondents in schools with four to six full-time faculty members judged the use of opaque materials for non-transparent materials to be used for group observation and economy of time to be in the low range, 30 per cent to be in the middle range, and 5 per cent to be in the higher range. Fifty-two per cent of the respondents in schools with seven to ten full-time faculty members judged the use of opaque materials for non-transparent materials to be used for group observation and economy of time to be in the low range, 36 per cent in the middle range and 12 in the higher range. Fifty-one per cent of the respondents in schools with eleven to fifteen full-time faculty members judged the use of opaque materials for non-transparent materials to be used for group observation and economy of time to be in the low range, 38 per cent to be in the middle range, and 11 per cent to be in the higher range.

Evaluative judgment.--The data cited indicated that the teachers included in this study were weak in the use of opaque materials when non-transparent materials should be used for group observation and economy of time.

Use of Opaque Materials to Enlarge Small Size Still Pictures and to Project Three Dimensional Objects

Criterion 11.--Opaque materials should be used to: a. enlarge small size still pictures to a large scale on various surfaces for reproduction; and b. project three dimensional objects.

Analysis of data.--Item B of the opaque materials

aspect of the Evaluative Checklist dealing with the use of opaque materials to enlarge small size still pictures and to project three dimensional objects is designed to elicit judgmental responses regarding the extent to which a teacher's use of opaque materials meets the criteria stated above. Table 17 shows the percentage of teachers in each of the three full-time faculty size categories which were judged by Evaluative Checklist respondents as being in the low, middle, or higher range of educational media utilization. Seventy-three per cent of the respondents in schools with four to six full-time faculty members judged the use of opaque materials to enlarge small size still pictures and to project three dimensional objects as being in the low range, 23 per cent in the middle range, and 4 per cent in the higher range. Seventy per cent of the respondents in schools with seven to ten full-time faculty members judged the use of opaque materials to enlarge small size pictures and to project three dimensional objects to be in the low range, 17 per cent to be in the middle, and 13 per cent to be in the higher range.

Evaluative judgment.--The data cited indicated that the teachers included in this study were weak in the use of opaque materials to enlarge small size still pictures and to project three dimensional objects.

Part 6.--Overhead Transparencies

Use of Overhead Transparencies to Show Development of Wholes from Parts or the Cumulative Growth of a Whole, to Write on Projection Material at the Time of Projection, or to Present Illustrations While the Teacher Is Facing the Class

Criterion 12.--Overhead transparencies should be used when: a. it is necessary to show the development of a whole from separate parts or the cumulative growth of a whole; b. it is desirable to write or mark on the projection material at the time of projection; and c. the teacher wishes to present illustrations while facing the class.

Analysis of data.--Item A of the overhead transparencies aspect of the Evaluative Checklist dealing with the use of overhead transparencies to show development of wholes from parts or the cumulative growth of a whole, to write on projection material at the time of projection, or to present illustrations while the teacher is facing the class is designed to elicit judgmental responses regarding the extent to which a teacher's use of overhead transparencies meets the criteria stated above. Table 18 shows the percentage of teachers in each of the three full-time faculty size categories which were judged by Evaluative Checklist respondents as being in the low, middle, or higher ranges of educational media utilization. Forty-five per cent of the respondents in schools with four to six full-time faculty members judged the use of overhead transparencies to show development of wholes from parts or the cumulative growth of a whole, to write on projection material at the time of projection, or to present illustrations while the teacher is facing the class

TABLE 18

PERCENTAGE OF SCHOOLS IN EACH RANGE OF EDUCATIONAL MEDIA USE OF "OVERHEAD
TRANSPARENCIES" AS MEASURED BY THE EVALUATIVE CHECKLIST.

Educational Media Utilization Aspects	Range of Educational Media Utilization								
	Low			Middle			Higher		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
A. Use of Overhead Transparencies to Show Development of Wholes from Parts or the Cumulative Growth of a Whole, to Write on Projection Material at the Same Time of Projection, or to Present Illustrations While the Teacher Is Facing the Class	45	46	24	39	29	56	16	25	20

Source: Evaluative Checklist, Section 5

Column (1) = 4-6 full-time faculty members

Column (2) = 7-10 full-time faculty members

Column (3) = 11-15 full-time faculty members

95

as being in the low range, 39 per cent in the middle range,
and 16 per cent in the higher range. Forty-six per cent of
the respondents in schools with seven to ten full-time faculty
members judged the use of overhead transparencies to show
development of wholes from parts or the cumulative growth of
a whole, to write on projection material at the time of
projection, or to present illustrations while the teacher is
facing the class as being in the low range, 29 per cent in
the middle range, and 25 per cent in the higher range.
Twenty-four per cent of the respondents in schools with eleven
to fifteen full-time faculty members judged the use of over-
head transparencies to show development of wholes from parts
or the cumulative growth of a whole, to write on projection
material at the time of projection, or to present illustra-
tions while the teacher is facing the class to be in the low
range, 56 per cent in the middle range and 20 per cent in the
higher range.

Evaluative judgment.--The data cited indicated that
the teachers included in this study were generally neither
weak nor strong in the use of overhead transparencies to show
development of wholes from parts or the cumulative growth of
a whole, to write on projection material at the time of
projection, or to present illustrations while the teacher is
facing the class.

Part 7.--Slides

Use of Slides for Reduction in Size for Easy Storage and Retrieval and to Document Field Trips and Laboratory Experiments

Criterion 13.--Slides should be used when: a. it is desirable to reduce materials for the purpose of easy storage and retrieval for future use; and b. it is desirable to document field trips and laboratory experiments.

Analysis of data.--Item A of the slides aspect of the Evaluative Checklist dealing with the use of slides for reduction in size for easy storage and retrieval and to document field trips and laboratory experiments is designed to elicit judgmental responses regarding the extent to which a teacher's use of slides meets the criteria stated above. Table 19 shows the percentage of teachers in each of the three full-time faculty size categories which were judged by Evaluative Checklist respondents as being in the low, middle, or higher range of educational media utilization. Seventy-seven per cent of the respondents in schools with four to six full-time faculty members judged the use of slides for reduction in size for easy storage and retrieval and to document field trips and laboratory experiments as being in the low range, 16 per cent in the middle range, and 7 per cent in the higher range. Sixty-nine per cent of the respondents in schools with seven to ten full-time faculty members judged the use of slides for reduction in size for easy storage and retrieval and to docu- ment field trips and laboratory experiments as being in the low range, 18 per cent in the middle range, and 13 per cent

TABLE 19

PERCENTAGE OF SCHOOLS IN EACH RANGE OF EDUCATIONAL
MEDIA USE OF "SLIDES" AS MEASURED BY THE
EVALUATIVE CHECKLIST

| Educational Media Utilization Aspects | Range of Educational Media Utilization | | | | | | | | |
| | Low | | | Middle | | | Higher | | |
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
A. Use of Slides for Reduction in Size for Easy Storage and Retrieval and to Document Field Trips and Laboratory Experiments	77	69	69	16	18	26	7	13	5

Source: Evaluative Checklist, Section 6

Column (1) = 4-6 full-time faculty members

Column (2) = 7-10 full-time faculty members

Column (3) = 11-15 full-time faculty members

in the higher range. Sixty-nine per cent of the respondents

in schools with eleven to fifteen full-time faculty members

judged the use of slides for reduction in size for easy

storage and retrieval and to document field trips and lab-

oratory experiments as being in the low range, 26 per cent

in the middle range, and 5 per cent in the higher range.

Evaluative judgment.--The data cited indicated that

the teachers included in this study were weak in the use of

slides for reduction in size for easy storage and retrieval

and to document field trips and laboratory experiments.

Part 8.--Filmstrips

Use of Filmstrips for Photographs of a Sequential
Nature and for Discussion of Individual Frames

Criterion 14.--Filmstrips should be used when motion
is not essential and when it is desirable to stop and discuss
individual frames.

Analysis of data.--Item A of the filmstrip aspect of

the Evaluative Checklist dealing with the use of filmstrips

for photographs of a sequential nature and for discussion of

individual frames is designed to elicit judgmental responses

regarding the extent to which a teacher's use of filmstrips

meets the criteria stated above. Table 20 shows the percent-

age of teachers in each of the three full-time faculty size

categories which were judged by Evaluative Checklist respond-

ents as being in the low, middle, or higher range of educa-

tional media utilization. Fifty-eight per cent of the

TABLE 20

PERCENTAGE OF SCHOOLS IN EACH RANGE OF EDUCATIONAL MEDIA USE OF "FILMSTRIPS" AS MEASURED BY THE EVALUATIVE CHECKLIST

| Educational Media Utilization Aspects | Range of Educational Media Utilization | | | | | | | | |
| | Low | | | Middle | | | Higher | | |
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
A. Use of Filmstrips for Photographs of a Sequential Nature for Discussion of Individual Frames	58	54	63	33	36	31	9	10	6

Source: Evaluative Checklist, Section 7

Column (1) = 4-6 full-time faculty members

Column (2) = 7-10 full-time faculty members

Column (3) = 11-15 full-time faculty members

respondents in schools with four to six full-time faculty members judged the use of filmstrips for photographs of a sequential nature for discussion of individual frames to be in the low range, 33 per cent in the middle range and 9 per cent in the higher range. Fifty-four per cent of the respondents in schools with seven to ten full-time faculty members judged the use of filmstrips for photographs of a sequential nature for discussion of individual frames to be in the low range, 36 per cent in the middle range, and 10 per cent in the higher range. Sixty-three per cent of the respondents in schools with eleven to fifteen full-time faculty members judged the use of filmstrips for photographs of a sequential nature for discussion of individual frames to be in the low range, 31 per cent in the middle range and 6 per cent in the higher range.

Evaluative judgment.--The data cited indicated that the teachers included in this study were weak in the use of filmstrips for photographs of a sequential nature for discussion of individual frames.

Part 9.--Motion Picture Films

Use of Motion Picture Films to Enhance Lecture, to Provide Motivation and for Effective Presentation of Material

Criterion 15.--Motion picture films should be used when: a. the experience presented vicariously contributes to the lecture; b. they provide student motivation; and c. they present the material more effectively than the teacher can.

Analysis of data.--Item A of the motion picture films

aspect of the Evaluative Checklist dealing with the use of

motion pictures to enhance lecture, to provide motivation and

for effective presentation of material is designed to elicit

judgmental responses regarding the extent to which a teacher's

use of motion picture films meets the criteria stated above.

Table 21 shows the percentage of teachers in each of the

three full-time faculty size categories which were judged by

Evaluative Checklist respondents as being in the low, middle,

or higher ranges of educational media utilization. Thirty

per cent of the respondents in schools with four to six full-

time faculty members judged the use of motion picture films

to enhance lecture, to provide motivation and for effective

presentation of material to be in the low range, 56 per cent

in the middle range, and 11 per cent in the higher range.

Forty-five per cent of the respondents in schools with seven

to ten full-time faculty members judged the use of motion

picture films to enhance lecture, to provide motivation and

for effective presentation of material to be in the low range,

40 per cent in the middle range, and 15 per cent in the higher

range. Thirty-six of the respondents in schools with four to

six full-time faculty members judged the use of motion picture

films to enhance lecture, to provide motivation and for effec-

tive presentation of material to be in the low range, 44 per

cent in the middle range, and 20 per cent in the higher range.

Evaluative judgment.--The data cited indicated that

TABLE 21

PERCENTAGE OF SCHOOLS IN EACH RANGE OF EDUCATIONAL MEDIA USE OF "MOTION PICTURE FILMS" AS MEASURED BY THE EVALUATIVE CHECKLIST

| Educational Media Utilization Aspects | Range of Educational Media Utilization | | | | | | | | |
| | Low | | | Middle | | | Higher | | |
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
A. Use of Motion Picture Films to Enhance Lecture, to Provide Motivation, and for Effective Presentation of Material	30	45	36	59	40	44	11	15	20
B. Use of Motion Picture Films for Verbalization and Motion, for Modification of Time, Size, and Space, and for Review and Summarization	67	38	52	22	46	36	11	16	12
C. Use of Eight Millimeter Motion Picture Films for Small Group or for Individual Instruction and for Inexpensive Local Production	84	86	95	12	13	4	4	1	1

Source: Evaluative Checklist, Section 8

Column (1) = 4-6 full-time faculty members
Column (2) = 7-10 full-time faculty members
Column (3) = 11-15 full-time faculty members

103

the teachers included in this study were neither weak nor strong in the use of motion picture films to enhance the lecture, to provide motivation, and for effective presentation of material.

Use of Motion Picture Films for Verbalization and Motion, for Modification of Time, Size, and Space, and for Review and Summarization

Criterion 16.--Motion picture films should be used when: a. combination of verbalization and motion are essential to the learning process; b. the modification of time, size, and space needed; and c. summarization and review are needed.

Analysis of data.--Item B of the motion picture aspect of the Evaluative Checklist dealing with the use of motion picture films for verbalization and motion, for modification of time, size, and space, and for review and summarization is designed to elicit judgmental responses regarding the extent to which a teacher's use of motion picture films meets the criteria stated above. Table 21 shows the percentage of teachers in each of the three full-time faculty size categories which were judged by Evaluative Checklist respondents as being in the low, middle, or higher range of educational media utilization. Sixty-seven per cent of the respondents in schools with four to six full-time faculty members judged the use of motion picture films for verbalization and motion, for modification of time, size, and space, and for review and summerization as being in the low range, 22 per cent in the middle range, and 11 per cent in the higher range.

Thirty-eight per cent of the respondents in schools with seven

to ten full-time faculty members judged the use of motion

picture films for verbalization and motion, for modification

of time, size, and space, and for review and summerization as

being in the low range, 46 per cent in the middle range, and

16 per cent in the higher range. Fifty-two per cent of the

respondents in schools with eleven to fifteen full-time

faculty members judged the use of motion picture films for

verbalization and motion, for modification of time, size, and

space, and for review and summerization as being in the low

range, 36 per cent in the middle range, and 12 per cent in

the higher range.

Evaluative judgment.--The data cited indicated that

the teachers included in this study were weak in the use of

motion picture films for the combination of verbalization and

motion when it is essential to the learning process, for

modification of time, size, and space, and for review and

summerization.

Use of Eight Millimeter Motion Picture Films for
Small Group or for Individual Instruction and
for Inexpensive Local Production

Criterion 17.--Eight millimeter motion picture films
should be used: a. when cost is a factor in procurement; b.
when sound is not essential; and c. only for small group and
individual instruction.

Analysis of data.--Item C of the motion picture films

aspect of the Evaluative Checklist dealing with the use of

eight millimeter picture films for small group or individual instruction and for inexpensive local production is designed to elicit judgmental responses regarding the extent to which a teacher's use of eight millimeter motion picture films meets the criteria stated above. Table 21 shows the percentage of teachers in each of the three full-time faculty size categories which were judged by Evaluative Checklist respondents as being in the low, middle, or higher range of educational media utilization. Eighty-four per cent of the respondents in schools with four to six full-time faculty members judged the use of eight millimeter motion picture films for small group or for individual instruction and inexpensive local production as being in the low range, 12 per cent in the middle range, and 4 per cent in the higher range. Eighty-six per cent of the respondents in schools with seven to ten full-time faculty members judged the use of eight millimeter motion picture films for small group or for individual instruction and inexpensive local production as being in the low range, 13 per cent in the middle range, and 1 per cent in the higher range. Ninety-five per cent of the respondents in schools with eleven to fifteen full-time faculty members judged the use of eight millimeter motion picture film for small group or for individual instruction and for inexpensive local production as being in the low range, 4 per cent in the middle range, and 1 per cent in the higher range.

Evaluative judgment.--The data cited indicate that
the teachers included in this study were weak in the use of
eight millimeter motion picture films for small group or for
individual instruction and for inexpensive local production.

The Extent to Which Department of Audiovisual
Instruction, National Education
Association Standards Are Met

Standards for Instructional Materials

Official DAVI standards contain guidelines for three
types of instructional materials: sixteen millimeter films,
thirty-five millimeter filmstrips, and sound recordings. The
extent to which schools included in this study met the stand-
ards for instructional materials of these three types is pre-
sented in this section. DAVI standards appear in Appendix I.

The basic standards for sixteen millimeter motion
picture films may be met by a school in two ways: (1) by
providing the school with a collection of 500 college level
titles plus two per instructor over five hundred. In addi-
tion, teacher education institutions should have the basic
film collection recommended for elementary and secondary
schools (1,000 titles), and (2) by averaging three film
rentals per instructor per course. All of the schools met
this basic standard. The advanced standard for sixteen
millimeter motion picture films may be met by a school in two
ways: (1) one thousand college level titles plus three per
instructor over 500, plus elementary and secondary basic
collection in teacher education institutions, and (2) an

average of five film rentals per instructor per course. All schools met this standard. The basic standard for filmstrips may be met by a school in only one way, two thousand titles with duplicates as needed. The basic standard for recordings (tapes and discs, but not electronic lab materials) of one thousand tapes and discs was not met by any of the schools, nor was the advanced standard of two thousand tapes and discs met by any of the schools.

Table 22 gives a summary of the materials available to teachers in accredited American graduate library schools. This information was furnished by the Inventory Check Sheet.

Standards for Equipment

The official DAVI standards contain guidelines for several types of equipment. The extent to which schools included in this study met the DAVI standards for equipment is presented in this section. DAVI standards appear in Appendix I.

Sixteen Millimeter Motion Picture Projectors

The official DAVI basic standard for sixteen milli-meter projectors is one per twelve teaching stations in multi-purpose institutions. All schools included in this study are multipurpose institutions. The basic standard is met by all the schools. The advanced standard of one sixteen millimeter motion picture projector per eight teaching stations is met by one, or 8 per cent, of the schools in Range 1, three, or 23 per cent, of the schools in Range 2, and six, or

TABLE 22

NUMBER AND PERCENTAGE OF ACCREDITED AMERICAN LIBRARY SCHOOLS
WHICH MEET DAVI INSTRUCTIONAL MATERIALS STANDARDS

Type of Materials	Basic Standard						Advanced Standard					
	(1)		(2)		(3)		(1)		(2)		(3)	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Films, 16 mm	12	100	13	100	8	100	3	25	6	46	8	100
Filmstrips	12	100	13	100	8	100	6	50	9	69	8	100
Recordings	2	17	4	31	4	50	0	0	0	0	0	0

Source: Inventory Check Sheet for Accredited American Graduate Library
Schools

Column (1) = 12 schools in Range (1)

Column (2) = 13 schools in Range (2)

Column (3) = 8 schools in Range (3)

75 per cent, of the schools in Range 3.

Eight Millimeter Motion Picture Projectors

The official DAVI basic standard for eight millimeter projectors of one to three sound projectors per institution was met by two, or 17 per cent, of the schools in Range 1, four, or 31 per cent, of the schools in Range 2, and seven, or 88 per cent, of the schools in Range 3. None of the schools met the advanced standard of one eight millimeter sound projector per five teaching stations.

Automatic Slide Projectors

The official DAVI basic standard for automatic slide projectors is one per ten teaching stations. Three, or 25 per cent, of the schools in Range 1 met this standard, five, or 39 per cent, of the schools in Range 2 met this standard, and five, or 63 per cent, of the schools in Range 3 met this standard. The advanced standard of one per six teaching stations was met by one, or 8 per cent, of the schools in Range 1, one, or 8 per cent, of the schools in Range 2, and three, or 38 per cent, of the schools in Range 3.

Filmstrip or Combination Filmstrip-Slide Projector

The official DAVI basic standard of one per ten teaching stations was met by all schools; however, the advanced standards were not met by any of the schools.

$3\frac{1}{4}$ x 4 Overhead Projector

The official DAVI basic standard of two per

institution was not met by any of the schools; neither were the advanced standards of one per building.

10 x 10 Overhead Projector (classroom type)

The official DAVI basic standard of one per four teaching stations was met by eleven, or 92 per cent, of the schools in Range 1, ten, or 77 per cent, of the schools in Range 2, and seven, or 88 per cent, of the schools in Range 3. The advanced standard of one per teaching station was met by two, or 17 per cent, of the schools in Range 1, four, or 31 per cent, of the schools in Range 2, and five, or 63 per cent, of the schools in Range 3.

Opaque Projectors

The official DAVI basic standard of three to six per institution was met by four, or 33 per cent, of the schools in Range 1, nine, or 69 per cent, of the schools in Range 2, and seven, or 88 per cent of the schools in Range 3. None of the schools met the advanced standard of eight to twelve per institution.

TV Receivers

The official DAVI basic standard of one per each twenty-four viewers where programs available or projection TV as needed was not met by any of the schools, nor was the advanced standard of one per teaching station.

Record Players

The official DAVI basic standard of one per

twenty-five teaching stations was met by all the schools;
the advanced standard of one per fifteen teaching stations
was also met by all schools.

Tape Recorders

The official DAVI basic standard of one per five
teaching stations was met by all schools; however, no school
met the advanced standard of one per two teaching stations.

Projection Carts

The official DAVI standard of one per three to six
pieces of equipment was met by all schools, but none of the
schools met the advanced standard of one per two to four
pieces of equipment.

Radio Receivers

The official DAVI standard of three available in
central locations was met by three, or 25 per cent, of the
schools in Range 1, two, or 15 per cent, of the schools in
Range 2, and four, or 50 per cent of the schools in Range 3.
None of the schools met the advanced standard.

Projection Screens

The official DAVI standard of one per teaching station
was met by eight, or 67 per cent, of the schools in Range 1,
eleven, or 85 per cent, of the schools in Range 2, and by
eight, or 100 per cent, of the schools in Range 3. There
were no advanced standards given.

Closed Circuit TV

The official DAVI standard of one per studio per
institution capable of distribution of programming to each
teaching station was met by all schools. There were no ad-
vanced standards given.

Table 23 gives a summary of the materials available
to teachers in accredited American graduate library schools.
This information was furnished by the Inventory Check Sheet.

TABLE 23

NUMBER AND PERCENTAGE OF ACCREDITED AMERICAN LIBRARY SCHOOLS
WHICH MEET DAVI EQUIPMENT STANDARDS

Type of Equipment	Basic Standard						Advanced Standard					
	(1)		(2)		(3)		(1)		(2)		(3)	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
16mm Projectors	12	100	13	100	9	100	1	8	3	23	6	75
8 mm Projectors	2	17	4	31	7	88	0	0	0	0	0	0
2 x 2 Slide Projectors (automatic)	12	100	13	100	9	100	0	0	0	0	0	0
Filmstrip or Combination Filmstrip-Slide Projector	12	100	13	100	9	100	0	0	0	0	0	0
$3\frac{1}{4}$ x 4 Projectors (overhead)	0	0	0	0	0	0	0	0	0	0	0	0
Overhead Projectors 10 x 10	11	92	10	77	8	100	2	17	4	31	5	63
Opaque Projectors	4	33	9	69	7	88	0	0	0	0	0	0
TV Receivers	0	0	0	0	0	0	0	0	0	0	0	0
Record Players	12	100	13	100	8	100	12	100	13	100	8	100
Tape Recorders	12	100	13	100	27	100	0	0	0	0	0	0
Projection Carts	25	100	28	100	20	100	0	0	0	0	0	0
Radio Receivers (AM-FM)	3	25	2	15	4	50	0	0	0	0	0	0
Projection Screens	8	67	11	85	8	100	*	*	*	*	*	*
Closed Circuit TV	12	100	13	100	8	100	*	*	*	*	*	*

Source: Inventory Check Sheet for Accredited American Graduate Library Schools

Column (1) = 12 schools in Range (1)
Column (2) = 13 schools in Range (2)
Column (3) = 8 schools in Range (3)

*No specific guideline stated in the DAVI Standards

CHAPTER IV

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

The purposes of this chapter are to summarize, to state major findings, to state conclusions, and to make recommendations for further study.

Summary

This study was designed to determine the extent to which educational media are used in the teaching of library science in accredited American graduate library schools and to analyze the judgments of library science teachers relative to how well they are using educational media in terms of established criteria.

The plan of attack on the problem called for four major steps: (1) the developing and validating of evaluative criteria relating to the use of educational media based on professional literature and a jury of highly competent authorities in the educational media field; (2) the developing of an Evaluative Checklist and an Inventory Check Sheet; (3) the ascertaining of the status of the use of educational media in teaching library science in accredited American graduate library schools; and (4) the evaluating of the use

of educational media in the teaching of library science in
accredited American graduate library schools in relation to
established criteria. The survey method and appraisal
technique were used in treating the data, formulating opin-
ions, and ascertaining facts. The participants in this
study consisted of the thirty-three directors and the two
hundred fifteen full-time teachers in accredited American
graduate library schools.

Data were obtained by means of an Evaluative Check-
list and an Inventory Check Sheet which were sent to all
directors and full-time teachers. A review of professional
literature and a jury of authorities in the educational media
field were the basis for the establishment of the criteria
used in the Evaluative Checklist. Official DAVI standards
were used in the development of the Inventory Check Sheet.
These were the two data-gathering devices.

Major Findings

The major findings of this study are as follows:

1. The basic educational media (equipment and mate-
rials) are available to teachers in accredited American grad-
uate library schools.

2. Teachers in accredited American graduate library
schools feel that educational media play neither a weak nor
strong role in effective instruction.

3. Weak provisions for inservice education in the
use of educational media are made in accredited American

graduate library schools.

4. Educational television is not used as a teaching medium to any significant degree in accredited American graduate library schools.

5. Teaching machines and/or programmed learning materials are not used in teaching to any significant degree in accredited American graduate library schools.

6. Recordings are not used in teaching to any significant degree in accredited American graduate library schools.

7. Opaque materials (excluding books) are not used in teaching to any significant degree in accredited American graduate library schools.

8. Slides are not used in teaching to any significant degree in accredited American graduate library schools.

9. Filmstrips are not used in teaching to any significant degree in accredited American graduate library schools.

10. Overhead transparencies are used in teaching to a moderate degree in accredited American graduate library schools.

11. Motion picture films (sixteen millimeter) are used in teaching to a moderate degree in accredited American graduate library schools.

12. The variable of institutional size does not play a significant role in the use of educational media in the teaching of library science in accredited graduate library

schools. The use of educational media was generally at the same level in all institutions regardless of their size.

Conclusions

The following conclusions are based on the data revealed in Chapter IV. They are based on the evaluation of data obtained in this study relative to use of educational media by teachers in accredited American graduate library schools and on the criteria developed through professional literature and a jury of educational media authorities.

1. Through the use of professional literature and a nationwide jury of educational media authorities, the criteria developed for this study are reasonably adequate for evaluating the use of educational media in the teaching of library science in accredited American graduate library schools and could be useful as a guide in evaluating media use in the teaching of other disciplines.

2. Within the limitations of this study, the analysis of data revealed in Chapter IV constitute the strong, neither strong nor weak, and weak points of the use of educational media in the teaching of library science in accredited American graduate library schools. Of the nine educational media areas evaluated, none are strong, three are neither weak nor strong, and six are weak. The subsidiary conclusions regarding the nine major aspects of this study are:

   a. Of the two characteristics pertaining to the general aspect of the use of educational media in the teaching of library science in accredited American graduate library schools, the role of educational media in

instruction is neither weak nor strong, and provisions for inservice education in the use of educational media is weak.

b. All of the characteristics pertaining to the educational television aspect of the use of educational media in the teaching of library science in accredited American graduate library schools are weak.

c. All of the characteristics pertaining to the teaching machines and/or programmed learning materials aspect of the use of educational media in the teaching of library science in accredited American graduate library schools are weak.

d. All the characteristics pertaining to the recordings aspect of the use of educational media in the teaching of library science in accredited American graduate library schools are weak.

e. All the characteristics pertaining to the opaque materials aspect of the use of educational media in the teaching of library science in accredited American graduate library schools are weak.

f. Of the three characteristics pertaining to the overhead transparencies aspect of the use of educational media in the teaching of library science in accredited American graduate library schools, all three are neither weak nor strong.

g. All the characteristics pertaining to the slides aspect of the use of educational media in the teaching of library science in accredited American graduate library schools are weak.

h. All the characteristics pertaining to the filmstrip aspect of the use of educational media in the teaching of library science in accredited American graduate library schools are weak.

i. Of the three characteristics pertaining to the motion picture films aspect of the use of educational media in the teaching of library science in accredited American graduate library schools, one is neither strong nor weak, and two are weak.

Recommendations

On the basis of the data obtained from this study, the following recommendations are believed to be defensible.

1. That each school's institutional educational media center or some other appropriate authority provide a program to cope with the evident existence of teacher inertia in the use of educational media since such media (equipment and materials) are available for teacher use in accredited American graduate library schools.

2. That each school's institutional educational media center or some other appropriate authority provide for an orientation of teachers in accredited American graduate library schools to the unique role and contribution of educational media to instruction.

3. That each school's institutional educational media center or some other appropriate authority provide for inservice education in the use of educational media, including new instructional devices and materials, whereby teachers in accredited American graduate library schools may be prepared to communicate through the use of educational media. The preparation of teachers to communicate through the use of educational media is essentially a common process of:

    a. structuring a concept of the aspects of the communication process in which media will play a part;

    b. identifying the qualities of media as they affect the communication process and the interactions of these qualities with learning objectives and learner characteristics;

    c. selecting and shaping the form and mode of the media which are to be used;

    d. providing optimum conditions for learners to attend to the media; and

e. providing opportunities for learner feed-back, which in turn, modifies further use.

4. That this study be made available to the deans and faculties of participating institutions in order that they may appraise the effectiveness of their instructional programs.

Recommendations for Further Study

It is suggested that the following investigations would aid considerably in the accumulation of data and information needed to determine the scope and role of educational media in the teaching of library science.

1. It is recommended that further study be made in the development and refinement of a precise instrument for determining educational media utilization criteria. The instrument used to determine the criteria for this study may not be precise enough to distinguish minute differences in utilization aspects of educational media, even though it is believed to be adequate for this study.

2. It is recommended that further study be made using all graduate library schools for the purpose of comparing educational media use in the teaching of library science in accredited American graduate library schools and non-accredited American graduate library schools.

3. It is recommended that a subsequent study be made four years hence to determine the extent to which educational media are used in the teaching of library science in accredited American graduate library schools at that time.

4. It is recommended that a study be made to investigate the attitudes and concepts which are held by library science teachers concerning the role and importance of educational media in instruction.

5. It is recommended that a study be made to investigate the educational media background and preparation of library science teachers.

6. It is finally recommended that further investigations be made in the area of inservice training opportunities in the use of educational media for library science teachers since the data in Chapter III revealed that less than half of the schools provide adequate inservice training opportunities for their teachers.

123

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APPENDIX A

SOURCES OF CRITERIA STATEMENTS

All statements from any of the following sources are followed by "(1)":

A-V Communication Review. Washington, D. C., Division of
    Audiovisual Instruction, National Education Association.
        Volume 11, 1963, Numbers 1-6.
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    Audiovisual Instruction, National Education Association.
        Volume 10, 1965, Numbers 1-9.
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NEA Journal, Washington, D. C., National Education Association.
        Volume 53, 1965, Numbers 1-9.
        Volume 54, 1966, Numbers 1-2.

All statements from any of the following sources are followed by "(2)":

Educational Screen A-V Guide. Chicago, Illinois.
        Volumes 44, 1966, Numbers 1-4.

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All statements from any of the following sources are followed by "(3)":

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All statements from any of the following sources are followed by "(4)":

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    1962.

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    Western Carolina College, 1965.

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    1960.

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All statements from the following source are followed by "(6)":

Association for Student Teaching. Audio-Visual Materials in Teacher Education. Twenty-Ninth Yearbook. Lock Haven, Pennsylvania: Association for Student Teaching, 1950.

All statements from the following source are followed by "(7)":

Fulton, William Ray. Criteria Relating to an Educational Media Program. Developed for the United States Office of Education. Norman, Oklahoma: The University of Oklahoma, 1965, as part of a study performed pursuant to a contract with the U. S. O. E., under the provisions of Title VII, Public Law 85-864.

All statements from the following source are followed by "(8)":

Schwartz, John Charles, Jr. "Evaluative Criteria for an Audiovisual Instructional Program." Unpublished Doctor's Dissertation, Department of Education, University of California at Los Angeles, 1949.

APPENDIX B

TENTATIVE CRITERIA FOR THE USE OF EDUCATIONAL MEDIA IN

TEACHING WITH CODE NUMBERS INDICATING SOURCES

FROM WHICH THEY WERE TAKEN

General

1. Educational media should be used when they contribute to the clarity of a particular lesson, and subsequently, to the improvement of instruction. (1),(7),(5)

2. Continuous inservice education in the use of educational media should be carried on as a means of improving instruction. (1),(4),(5),(7)

3. Continuous inservice education should be carried on in such areas as new instructional devices, materials, techniques and the important role and value of educational media to instruction. (1),(5),(7)

Educational Television

4. Educational television should be used in the academic areas that cannot be staffed by the local school district because of the fact that teachers are unavailable or the budget is limited. (1),(2),(3),(5)

5. Educational television should be used when the content of the telecast is of such a nature that it will facilitate understanding of a subject. (1),(2),(3),(4),(5)

6. Educational television should be used when a unit of material is common to the needs of a large group. (1),(3), (4),(5)

7. Educational television should be used when current events contribute to the learning process. (1),(3),(4),(5)

8. Educational television should be used when the group being taught is too large or is otherwise of such a nature that the type of instruction made possible by television would be impossible by normal or routine means. (1),(4), (5),(6)

9. Educational television should be used when its value to the subject matter taught is such that it justifies the expense. (1),(2),(3),(5)

Teaching Machines and/or Programmed Learning Materials

10. Teaching machines and/or programmed learning materials should be used when quick reinforcement of subject matter is necessary. (1),(2),(3),(5)

11. Teaching machines and/or programmed learning materials should be used when individualized instruction is needed. (1),(2),(3),(5)

12. Teaching machines and/or programmed learning materials should be used when factual information is to be presented to pupils in a minimum length of time. (1),(2),(3),(5)

13. Teaching machines and/or programmed learning materials should be used with gifted children who have self-motivation in one or many subjects. (1),(2),(3),(4),(5)

14. Teaching machines and/or programmed learning materials should be used when there exists a wide range of intelligence among students, thus enabling them to progress at their own rate. (1),(3),(4),(5)

15. Teaching machines and/or programmed learning materials should be used when immediate reinforcement is necessary at the precise level of achievement that is needed for the individual. (1),(3),(4),(5)

16. Teaching machines and/or programmed learning materials should be used when more individual instruction is needed by certain pupils than others, and when it is desirable for students to progress at their own particular rate of learning. (1),(3),(4),(5)

17. Teaching machines and/or programmed learning materials should be used when a tutor to present material and reinforce learning is not available, and particularly in such cases as when gifted or retarded children are involved. (1),(3),(5), (6)

18. Teaching machines and/or programmed learning materials should be used when the information to be presented lends itself to a logically organized, sequential system of learning and that information is essentially unchanging and unopen to debate. (1),(2),(5)

19. Teaching machines and/or programmed learning materials should be used when basic drill and routine matters of instruction need to be presented to students in a minimum length of time and when this activity is restricting the teacher in relation to other duties and potentialities. (1),(2),(4),(5)

20. Teaching machines and/or programmed learning materials should be used when the intellectual stratification of the class tends to make the simultaneous achievement of maximum uniform instruction and highest possible individual achievement impossible. (1),(3),(4)

21. Teaching machines and/or programmed learning materials should be used when their supplementation of other study units will be directly contributive to the desired concept formation. (1),(3),(4),(5)

22. Teaching machines and/or programmed learning materials should be used in subject areas where information lends itself to routine tasks of instruction. (1),(3),(4)

Recordings

23. Recordings should be used when repeated audio-experiences are essential to the learning process. (1),(3),(4),(5)

24. Recordings should be used to enliven, enhance, and vivify impressions of the material being processed. (1),(3),(4),(5)

25. Recordings should be used when this is the only way that pupils can experience good music; non-musical recordings should be used to provide students with experiences in good narration of literary works. (1),(3),(4),(6)

26. Recordings should be used to capture original sounds and preserve them for later use. (1),(3),(4)

27. Recordings should be used to overcome barriers of time and distance when particular voices are essential to a unit of study. (1),(3),(4),(5)

28. Tape recordings should be used when it is desirable for the student to hear his own sound reproduction. (1),(3),(4),(5)

29. Tape recordings should be used in a study which needs self-criticism, such as learning a foreign language. (1),(3),(4)

30. Tape recordings should be used to evaluate oral work done by pupils in order that constructive criticism can be given and the student can have the opportunity to improve. (1),(4),(5)

31. Tape recordings should be used to bring the actual words of contemporary artists or the voice of celebrated performers to the classroom. (1),(3),(4),(5)

Opaque Materials

32. Opaque materials should be used when non-transparent materials need to be shown for group observation and/or evaluation. (1),(3),(5)

33. Opaque materials should be used to project images of non-transparent materials when the making of a transparency is impractical or impossible. (1),(3),(4),(5)

34. Opaque materials should be used to enlarge small size still pictures to a large scale on the chalkboard, butcher paper, or construction paper. (1),(3),(4),(5)

35. Opaque materials should be used when there is not time to prepare transparencies or when the material is not suited for reproduction. (1),(3),(4),(5)

Overhead Transparencies

36. Overhead transparencies should be used especially when the teacher desires to write or mark on the projection material and the making of a transparency is practical and possible. (1),(3),(5)

37. Overhead transparencies should be used when detailed study of a particular fact of a subject is necessary. (1), (3),(4),(5)

38. Overhead transparencies should be used when it is necessary to show the development of a whole from separate parts or the cumulative growth of a whole needs to be studied. (1),(3),(4),(5)

39. Overhead transparencies should be used when the lecture and illustrations need to run concurrently without the teacher losing eye contact with the class. (1),(3),(4),(5)

Slides

40. Slides should be used when prolonged projection of a still picture is desired. (1),(3),(4)

41. Slides should be used when the easily procurable slides can individually fit into the teaching purpose or when they can be arranged in such an order as to be meaningful. (1), (5),(6)

42. Slides should be used for drill exercises. (1),(3),(5), (6)

43. Slides should be used to evaluate and review materials learned on field trips, in laboratory experiments and during class activities. (1),(3),(6)

44. Slides should be used when the orderly presentation of the subject matter is arranged by the teacher. (1),(3),(4), (5)

Filmstrips

45. Filmstrips should be used when a series of sequential photographs is to be shown and motion is not essential to concept formation. (1),(4),(5)

46. Filmstrips should be used when presenting programmed materials at varying speeds. (1),(3),(5)

47. Filmstrips should be used in full class participation units because the filmstrip may be stopped by frames and each frame may be easily seen and readily discussed. (1),(4),(5), (7)

Motion Picture Films

48. Motion picture films should be used when no other media can do the job as well and motion is essential to learning. (1),(3),(4),(5)

49. Motion picture films should be used when both sound and motion are necessary to the understanding of the lesson presented. (1),(3),(6)

50. Motion picture films should be used for the multiple purposes of the material to be presented ties in with the lecture, when it presents the material more effectively than the teacher can, or when visual motion and sound are important to the concept being taught. (1),(3),(4),(5),(6)

51. Motion picture films should be used to reconstruct past events. (1),(3),(4),(5)

52. Motion picture films should be used when creating realistic learning situations which closely simulate the original situation. (1),(3),(4),(5)

53. Motion picture films should be used to promote positive changes in students' interest, learning efficiency, retention of learning and reading performance. (1),(3),(4),(5),(6)

54. Eight millimeter motion picture films should be used when the teacher wishes to produce his own teaching film material. (1),(2),(4)

55. Eight millimeter motion picture films should be used to record school events, community-school project, or classroom activities for later use. (1),(2),(3),(4),(5)

56. Eight millimeter motion picture films should be used when motion and sequence are essential, yet sound may be omitted. (1),(2),(4),(6)

57. Eight millimeter motion picture films should be used when motion is needed to present an understanding of a certain concept but no acceptable sixteen millimeter film is available; the teacher could find and record for his own particular record and thus get exactly and only that material needed for a particular lesson or demonstration. (1),(2), (3),(4)

58. Eight millimeter motion picture films should be used in dealing with subject matter suitable for small group instruction. (1),(3),(4),(5),(6)

APPENDIX C

MEMBERS OF THE JURY VALIDATING CRITERIA

Mr. Lee W. Cochran
Audio-Visual Director
University of Iowa
Iowa City, Iowa

Mr. John Dome, Director
Audio-Visual Services
Miami University
Oxford, Ohio

Dr. Donald Ely
Director Educational Media
Syracuse University
Syracuse, New York

Mr. Otis McBride
Audio-Visual Education
Florida State University
Tallahassee, Florida

Dr. Ernest Tieman
Audio Visual Director
University of Texas
Austin 12, Texas

Mr. William Gnaedinger
Audio-Visual Center
Washington State University
Pullman, Washington

Dr. Murray Phillips
Director of Audio-Visual Education
Hofstra University
Hempstead, L. I., New York

Mr. John A. Pritchett, Jr.
Director Audio-Visual Services
Appalachian State Teachers College
Boone, North Carolina

Mr. Vigga B. Rasmusen
Director Audio-Visual Services
Wisconsin State University
La Crosse, Wisconsin

Dr. Robert de Kieffer
Bureau of Audio-Visual Instruction
University of Colorado
Boulder, Colorado

Mr. Leroy Simonson
Fort Dodge Community College
Fort Dodge, Iowa

Mr. Robert Snider
Division of Audiovisual Instruction
National Education Association
1201 16th Street N. W.
Washington, D. C.

APPENDIX D

LETTER OF INVITATION TO PROSPECTIVE JURORS

Niemann Apartment D-21
Norman, Oklahoma
January 6, 1966

_____
_____
_____
_____

Dear_____:

　　　This letter is written to ask if you will participate in a study involving the validation of criteria for evaluating the use of educational media in teaching by acting as a member of a jury of experts, along with nine other professional persons from across the nation. Such participation will not take more than thirty minutes of your time.

　　　This study, under the general direction of Dr. W. R. Fulton, Professor of Audio-Visual Education at the University of Oklahoma, is being initiated to evaluate the use of educational media in teaching. This necessitates the establishment and validation of criteria for the purpose of evaluation.

　　　If you deem it possible to serve in this capacity, a tentative list of criteria will be sent to you. You will be requested merely to mark in the appropriate column on the list the response indicating your feeling as to whether or not the statement should be retained or omitted in the final criteria.

　　　Will you please check the enclosed card and return it at your earliest convenience. Your time and consideration will be greatly appreciated.

Sincerely yours,

Herman L. Totten

HLT:cnl

Enclosure

APPENDIX E

RESPONSE CARD

_____I will serve on the jury.

_____I will not serve on the jury.

_____
Signature

APPENDIX F

QUESTIONNAIRE ON THE USE OF EDUCATIONAL

MEDIA IN TEACHING

January, 1966

The statements below are possible criteria for the use of educational media in teaching.

Your estimate of each criterion, with respect to its importance in teaching, should be in terms of its application to a general or theoretical situation without regard to exceptional conditions.

Directions: Please check (x) in the appropriate column the response indicating your feeling as to whether or not the statement should be retained or omitted in the final criteria.

Retain	Omit	GENERAL
___	___	1. Educational media should be used when they contribute to the clarity of a particular lesson, and subsequently, to the improvement of instruction.
___	___	2. Continuous inservice education in the use of educational media should be carried on as a means of improving instruction.
___	___	3. Continuous inservice education should be carried on in such areas as new instructional devices, materials, techniques and the important role and value of educational media to instruction.

Additional comments, suggestions or criteria

_____

_____

_____

_____

_____

Retain Omit

Educational Television

____ ____ 4. Educational television should be used in the academic areas that cannot be staffed by the local school district because of the fact that the teachers are unavailable or the budget is limited.

____ ____ 5. Educational television should be used when the content of the telecast is of such a nature that it will facilitate understanding of a subject.

____ ____ 6. Educational television should be used when a unit of material is common to the needs of a large group.

____ ____ 7. Educational television should be used when current events contribute to the learning process.

____ ____ 8. Educational television should be used when the group being taught is too large or is otherwise of such a nature that the type of instruction made possible by television would be impossible by normal or routine means.

____ ____ 9. Educational television should be used when its value to the subject matter taught is such that it justifies the expense.

Additional comments, suggestions or criteria

_____

_____

_____

_____

Teaching Machines and/or Programmed Learning Materials

____ ____ 10. Teaching machines and/or programmed learning materials should be used when quick reinforcement of subject matter is necessary.

____ ____ 11. Teaching machines and/or programmed learning materials should be used when individualized instruction is needed.

____ ____ 12. Teaching machines and/or programmed learning materials should be used when factual information is to be presented to pupils in a minimum length of time.

Retain Omit

____ ____ 13. Teaching machines and/or programmed learning materials should be used with gifted children who have self-motivation in one or many subjects.

____ ____ 14. Teaching machines and/or programmed learning materials should be used when there exists a wide range of intelligence among students, thus enabling them to progress at their own rate.

____ ____ 15. Teaching machines and/or programmed learning materials should be used when immediate reinforcement is necessary at the precise level of achievement that is needed for the individual.

____ ____ 16. Teaching machines and/or programmed learning materials should be used when more individual instruction is needed by certain pupils than others, and when it is desirable for students to progress at their own particular rate of learning.

____ ____ 17. Teaching machines and/or programmed learning materials should be used when a tutor to present materials and reinforce learning is not available, and particularly in such cases as when gifted or retarded children are involved.

____ ____ 18. Teaching machines and/or programmed learning materials should be used when the information to be presented lends itself to a logically organized, sequential system of learning and that information is essentially unchanging and unopen to debate.

____ ____ 19. Teaching machines and/or programmed learning materials should be used when basic drill and routine matters of instruction need to be presented to students in a minimum length of time and when this activity is restricting the teacher in relation to other duties and potentialities.

____ ____ 20. Teaching machines and/or programmed learning materials should be used when the intellectual stratification of the class tends to make the simultaneous achievement of maximum uniform instruction and highest possible individual achievement possible.

____ ____ 21. Teaching machines and/or programmed learning materials should be used when their supplementation of other study units will be directly contributive to the desired concept formation.

Retain   Omit

_____ _____ 22. Teaching machines and/or programmed learning materials should be used in subject areas where information lends itself to routine tasks of instruction.

Additional comments, suggestions or criteria

_____

_____

_____

_____

Recordings

_____ _____ 23. Recordings should be used when repeated audio-experiences are essential to the learning process.

_____ _____ 24. Recordings should be used to enliven, enhance, and vivify impressions of the material being processed.

_____ _____ 25. Recordings should be used when this is the only way that pupils can experience good music; non-musical recordings should be used to provide students with experiences in good narration of literary works.

_____ _____ 26. Recordings should be used to capture original sounds and preserve them for later use.

_____ _____ 27. Recordings should be used to overcome barriers of time and distance when particular voices are essential to a unit of study.

_____ _____ 28. Tape recordings should be used when it is desirable for the student to hear his own sound reproduction.

_____ _____ 29. Tape recordings should be used in a study which needs self-criticism, such as learning a foreign language.

_____ _____ 30. Tape recordings should be used to evaluate oral work done by pupils in order that constructive criticism can be given and the student can have the opportunity to improve.

_____ _____ 31. Tape recordings should be used to bring the actual words of contemporary artists or the voice of celebrated performers to the classroom.

Additional
comments,
suggestions
or criteria

_____

_____

_____

_____

Retain   Omit

Opaque Materials

_____ _____ 32. Opaque materials should be used when non-transparent materials need to be shown for group observation and/or evaluation.

_____ _____ 33. Opaque materials should be used to project images of non-transparent materials when the making of a transparency is impractical or impossible.

_____ _____ 34. Opaque materials should be used to enlarge small still pictures to a large scale on the chalkboard, butcher paper, or construction paper.

_____ _____ 35. Opaque materials should be used when there is no time to prepare transparencies or when the material is not suited for reproduction.

Additional
comments,
suggestions
or criteria

_____

_____

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Overhead Transparencies

_____ _____ 36. Overhead transparencies should be used especially when the teacher desires to write or mark on the projection material and the making of a transparency is practical and possible.

_____ _____ 37. Overhead transparencies should be used when detailed study of a particular fact of a subject is necessary.

_____ _____ 38. Overhead transparencies should be used when it is necessary to show the development of a whole for separate parts or the cumulative growth of a whole needs to be studied.

Retain Omit

_____ _____ 39. Overhead transparencies should be used when
the lecture and illustrations need to run con-
currently without the teacher losing eye contact
with the class.

Additional
comments,   _____
suggestions   _____
or criteria   _____
               _____

Slides

_____ _____ 40. Slides should be used when prolonged projection
of a still picture is desired.

_____ _____ 41. Slides should be used when the easily procurable
slides can individually fit into the teaching
purpose or when they can be arranged in such
an order as to be meaningful.

_____ _____ 42. Slides should be used for drill exercises.

_____ _____ 43. Slides should be used to evaluate and review
materials learned on field trips, in laboratory
experiments and during class activities.

_____ _____ 44. Slides should be used when the orderly presenta-
tion of the subject matter is arranged by the
teacher.

Additional
comments,   _____
suggestions   _____
or criteria   _____
               _____

Filmstrips

_____ _____ 45. Filmstrips should be used when a series of
sequential photographs is to be shown and motion
is not essential to concept formation.

_____ _____ 46. Filmstrips should be used when presenting pro-
grammed materials at varying speeds.

Retain Omit

_____ _____ 47. Filmstrips should be used in full class partici-
pation units because the filmstrip may be
stopped by frames and each frame may be easily
seen and readily discussed.

Additional   _____
comments,
suggestions   _____
or criteria
                _____

                _____

Motion Picture Films

_____ _____ 48. Motion picture films should be used when no
other media can do the job as well and motion
is essential to learning.

_____ _____ 49. Motion picture films should be used when both
sound and motion are necessary to the under-
standing of lesson presented.

_____ _____ 50. Motion picture films should be used for the
multiple purposes of the material to be pre-
sented ties in with the lecture, when it pre-
sents the material more effectively than the
teacher can, or when visual motion and sound
are important to the concept being taught.

_____ _____ 51. Motion picture films should be used to recon-
struct past events.

_____ _____ 52. Motion picture films should be used when creat-
ing realistic learning situations which closely
simulate the original situation.

_____ _____ 53. Motion picture films should be used to promote
positive changes in students' interest, learn-
ing efficiency, retention of learning and read-
ing performance.

_____ _____ 54. Eight millimeter motion picture films should be
used when the teacher wishes to produce his own
teaching film material.

_____ _____ 55. Eight millimeter motion picture films should be
used to record school events, community-school
project, or classroom activities for later use.

Retain   Omit

56. Eight millimeter motion picture films should be used when motion and sequence are essential, yet sound may be omitted.

57. Eight millimeter motion picture films should be used when motion is needed to present an understanding of a certain concept but no acceptable sixteen millimeter film is available; the teacher could find and record for his own particular record and thus get exactly and only that material needed for a particular lesson or demonstration.

58. Eight millimeter motion picture films should be used in dealing with subject matter suitable for small group instruction.

Additional comments, suggestions or criteria

_____

_____

_____

_____

APPENDIX G

Niemann Apt. D-21
Norman, Oklahoma
January 3, 1966

_____
_____
_____
_____

Dear Sir:

Thank you very much for serving on the jury and the prompt return of the acceptance card mailed to you previously.

For the completion of this phase of the study you will find enclosed a questionnaire containing the tentative list of criteria for your response.

Your time and continued cooperation are greatly appreciated. An immediate response would be sincerely appreciated.

Sincerely yours,

Herman L. Totten

/t

Enclosure

APPENDIX H

COVER LETTER SENT TO DIRECTORS BY DR. FRANK J. BERTALAN,

DIRECTOR, SCHOOL OF LIBRARY SCIENCE,

UNIVERSITY OF OKLAHOMA

March 1, 1966

_____, Director

_____

_____

_____

Dear_____:

May I call upon you and your staff to help one of our graduate
students, Mr. Herman Totten, in a special project which I hope
may have some usefulness for all library schools? Assuming
that perhaps you may be able to participate in this project
and in order to save time, I have taken the liberty to
enclose the forms needing execution.

You are aware, I am sure, of the importance of the utilization
of educational media in teaching. The data gathered and
analyzed from this instrument will be used in a doctoral
dissertation entitled, "An Analysis and Evaluation of the Use
of Educational Media in the Teaching of Library Science in
Accredited American Graduate Library Schools."

The need for such a study as this has been voiced by several
authorities in the field: Schick and Frantz in an article
entitled "Library Science Research Needs," published in the
Journal of Education for Librarianship, III (Spring, 1963),
p. 284, and in 1965, Sidney L. Jackson in "Review of Current
Research," Journal of Education for Librarianship, V (Winter,
1965), p. 205.

At first glance, the enclosed instrument will appear weighty.
It has been pre-tested, however, and requires about fifteen
minutes to complete.

Since the investigator, Mr. Totten, has selected an extremely
small sample for his research, he does need a return from all
the accredited library schools. The project has an early
deadline. In view of this, I would appreciate it if you
would encourage your faculty members to return the completed
instrument as soon as possible.

_____, Director
Page 2
March 1, 1966

If you would like to have the results of the study and so
indicate, I will be happy to see that they are forwarded to
you upon completion of the research. Thank you for your time
and consideration in this study.

Cordially yours,

Frank J. Bertalan
Director

FJB:cnl

Encl.

APPENDIX I

COVER LETTER SENT TO ALL DIRECTORS AND FULL-TIME TEACHERS

<div align="right">
Niemann Apt., D-21
Norman, Oklahoma
March 1, 1966
</div>

Dear Fellow Library Educator:

As a library educator you are aware of the importance of the utilization of educational media in teaching. I am carrying on research at the University of Oklahoma which will enable me to make an evaluation of educational media utilization in the teaching of library science in American accredited graduate library schools.

The purpose of this study is to supply data for a doctoral dissertation under the direction of Dr. William A. Fulton, Professor of Education, at the University of Oklahoma.

The study poses two major questions: (1) To what extent are educational media used in the teaching of library science? and (2) What are the judgments of library science teachers relative to how well they are using them in terms of established criteria?

The answer to these and other questions requires certain information that only you can supply. I would like to point out that this is not a comparative study, but a total study of the United States. Neither you nor the college or university that you represent will be referred to by name.

I know that I am sending the enclosed instrument to you at a very busy time of the school year. I beg your indulgence because the schedule set for the completion of this investigation demands that I contact all participating personnel and request that all instruments be completed and returned to me within the next few weeks. The small size of my sample makes it imperative that I secure a one hundred per cent return; therefore, your cooperation is most essential. Will you please fill out the enclosed instrument and return it as soon as possible? A self-addressed stamped envelope is enclosed for your convenience. Your response will make a distinct contribution to this study. Your prompt attention to this will be greatly appreciated.

<div align="right">
Sincerely yours,

Herman L. Totten
</div>

HLT:cnl
Encl.

APPENDIX J

AN INSTRUMENT FOR EVALUATING THE USE OF

EDUCATIONAL MEDIA IN TEACHING

The use of educational media varies markedly from one teacher to another. Some teachers need fewer media because of the nature of their field. Others have greater need for media because of their methods of teaching. Some use media at a high level of sophistication while the level of utilization of others may be less sophisticated. These and other factors enter into the determination of the adequacy of the use of educational media in a given situation. Likewise, these elements make it difficult to establish precise guidelines for judging a particular teaching situation. Nevertheless, there are fundamental principles which appear to be common to the use of all educational media. This instrument, structured around these principles, is presented in the hope that it will make it easier to evaluate the use of educational media in teaching.

The instrument is based on the assumption that the proper use of educational media as an integral part of the instructional program will bring about an improvement of instruction. Effective use of educational media is greatly facilitated by their availability. The status of the use of educational media is not likely to be known without periodic evaluation. The use of this instrument should greatly facilitate such an evaluation by providing useful guidelines for making judgments concerning use.

The term educational media as used in this instrument means all equipment and materials traditionally called audio-visual materials and all of the newer media such as television, overhead projectuals, and programmed materials. Likewise, the terms media and educational media are used interchangeably to mean both instructional equipment and instructional materials.

Criteria have been included at the beginning of each set of items in the instrument. The validity of your judgments will be greatly enhanced if careful study is made of the criteria before responding to the items.

PERSONNEL INFORMATION

Name: _____

Position: _____

Institution: _____

City: _____

AN EVALUATIVE INSTRUMENT

After you have carefully studied the criteria, circle one of the numbers at the left of the statement that most nearly represents the situation in your teaching position. If the statement accurately describes your teaching situation, mark one of the middle squares, 2, 5, or 8. If, in your estimation, the situation is below what is described, circle number 1, 4, or 7; if above, circle 3, 6, or 9. In any event, circle only one of the numbers, 1 through 9.

EXAMPLE:

1 2 3 In my teaching situation, I rarely make use of educational media.

4 ⑤ 6 In my teaching situation, I make occasional use of educational media.

7 8 9 In my teaching situation, I use educational media whenever they are needed in the learning process.

1. GENERAL

CRITERIA

°Educational media should be used when they contribute to the clarity of a particular lesson and, subsequently, to the improvement of instruction.

°Continuous inservice education in the use of educational media, including new instructional devices and materials, should be carried on as a means of improving instruction.

A. The Role of Educational Media in Instruction

1 2 3 In my teaching situation, I rarely use educational media even though they might contribute to the clarity of a particular lesson.

4 5 6 In my teaching situation, I make occasional use of educational media when they contribute to the clarity of a particular lesson.

7 8 9 In my teaching situation, I make extensive use of educational media when they contribute to the clarity of a particular lesson.

B. Provisions for Inservice Education in the Use of Educational Media

In my teaching situation, there is rarely inservice education in the use of educational media or new
1 2 3 instructional devices.

In my teaching situation, there is occasional inservice education in the use of educational media and instruc-
4 5 6 tional devices.

In my teaching situation, there is frequent inservice education in the use of educational media and instruc-
7 8 9 tional devices.

2. EDUCATIONAL TELEVISION

CRITERIA

°Educational television should be used to disseminate information from sources that are not readily available.

°Educational television should be used to present live current events as they are happening when the pictorial aspect of the presentation enhances learning.

°Educational television should be used for:

    a. inservice education when a unit of material is of such a nature that it lends itself to mass dissemination to widely dispersed audiences;

    b. learning groups which are sufficiently large to justify the cost.

A. Dissemination of Information by Educational Television

In my teaching situation, educational television rarely
1 2 3 is used to disseminate information.

In my teaching situation, educational television is
4 5 6 occasionally used to disseminate information.

In my teaching situation, educational television is
7 8 9 often used to disseminate information.

B. Pictorial Current Events Depicted by Educational Television

        In my teaching situation, educational television is rarely used to depict current events even though the
1 2 3 pictorial aspect may be valuable or enhance learning.

        In my teaching situation, educational television is occasionally utilized to depict current events when the
4 5 6 pictorial aspect is valuable and enhances learning.

        In my teaching situation, educational television is often used to depict current events when the pictorial
7 8 9 aspect is valuable and enhances learning.

C. Use of Educational Television to Reach Widely Dispersed Audiences

        In my teaching situation, educational television is rarely used for inservice education or to disseminate information to widely scattered audiences even though the learning groups are large enough to justify the
1 2 3 cost.

        In my teaching situation, educational television is occasionally used for inservice education or to disseminate information to widely scattered audiences when the learning groups are large enough to justify
4 5 6 the cost.

        In my teaching situation, educational television is often used for inservice education and to disseminate information to widely dispersed audiences when the
7 8 9 learning groups are large enough to justify the cost.

3. TEACHING MACHINES AND/OR PROGRAMMED LEARNING MATERIALS

CRITERIA

  °Teaching machines and/or programmed learning materials should be used when:

    a. the diversity of ability levels is present;

    b. immediate reinforcement of subject matter can be accomplished as satisfactorily as by the teacher.

  °Teaching machines and/or programmed learning materials should be used for:

    a. the learning of routine skills;

> b. the learning of factual information when such
> information can be presented in a logical and
> sequential manner;
>
> c. the enhancement of individual instruction.

A. Use of Teaching Machines and/or Programmed Learning
Materials in the Immediate Reinforcement of Subject
Matter

     In my teaching situation, teaching machines and/or
programmed learning materials are rarely used when
the diversity of ability levels is present or in the
1 2 3 immediate reinforcement of subject matter.

     In my teaching situation, teaching machines and/or
programmed learning materials are occasionally used
when the diversity of ability levels is present or in
4 5 6 the immediate reinforcement of subject matter.

     In my teaching situation, teaching machines and/or
programmed learning materials are often used when the
diversity of ability levels is present or in the
7 8 9 immediate reinforcement of subject matter.

B. Use of Teaching Machines and/or Programmed Learning
Materials in Learning Routine Skills and Factual
Information

     In my teaching situation, teaching machines and/or
programmed learning materials are rarely used in the
learning of routine skills and factual information or
1 2 3 to enhance individual instruction.

     In my teaching situation, teaching machines and/or
programmed learning materials are occasionally used in
the learning of routine skills and factual information
4 5 6 and to enhance individual instruction.

     In my teaching situation, teaching machines and/or
programmed learning materials are often used in the
learning of routine skills and factual information to
7 8 9 enhance individual instruction.

4. RECORDINGS

CRITERIA

°Recordings should be used when repeated audio experiences enliven, enhance, and vivify impressions of the material presented.

°Recordings should be used to provide students with:

    a. realistic and accurate musical experiences;

    b. unique narrative experiences;

    c. original sound reproduction;

    d. particular voices of the past in order to overcome time and distance when these voices enhance the learning process.

A. Use of Recordings to Enliven, Enhance, and Vivify Impressions of Materials

    In my teaching situation, recordings are rarely used to enliven, enhance, and vivify impressions of material being presented.

1 2 3

    In my teaching situation, recordings are occasionally used to enliven, enhance, and vivify impressions of material being presented.

4 5 6

    In my teaching situation, recordings are often used to enliven, enhance, and vivify impressions of material being presented.

7 8 9

B. Use of Recordings to Provide Realistic and Accurate Musical and Unique Narrative Experiences, to Capture Original Sounds, and to Overcome Barriers of Time and Distance

    In my teaching situation, recordings are rarely used to provide realistic and accurate musical and unique narrative experiences to capture original sounds, and to overcome barriers of time and distance when partic-

1 2 3 ular voices enhance the learning process.

    In my teaching situation, recordings are occasionally used to provide realistic and accurate musical and unique narrative experiences, to capture original sounds, and to overcome barriers of time and distance

4 5 6 when particular voices enhance the learning process.

In my teaching situation, recordings are often used
to provide realistic and accurate musical and unique
narrative experiences, to capture original sounds, and
to overcome barriers of time and distance when partic-
7 8 9   ular voices enhance the learning process.

5. OPAQUE MATERIALS

CRITERIA ·

°Opaque materials should be used when non-transparent
materials will contribute to:

   a. group observation and/or evaluation;

   b. economy of time when it is unfeasible to prepare
      material for use with another medium.

°Opaque materials should be used to:

   a. enlarge small size still pictures to a large
      scale on various surfaces for reproduction;

   b. project three dimensional objects.

A. Use of Opaque Materials for Non-Transparent Materials
   to be Used for Group Observation and Economy of Time

In my teaching situation, opaque materials are rarely
used for non-transparent materials shown for group
observation and/or evaluation or for economy of time
when it is unfeasible to prepare material for use
1 2 3   with another medium.

In my teaching situation, opaque materials are
occasionally used for non-transparent materials shown
for group observation and/or evaluation or for economy
of time when it is unfeasible to prepare material for
4 5 6   use with another medium.

In my teaching situation, opaque materials are often
used for non-transparent materials shown for group
observation and/or evaluation or for economy of time
when it is unfeasible to prepare material for use
7 8 9   with another medium.

B. Use of Opaque Materials to Enlarge Small Size Still
Pictures and to Project Three Dimensional Objects

In my teaching situation, opaque materials are rarely
used to enlarge small size still pictures to a large
scale on various surfaces for reproduction and to
1 2 3 project three dimensional objects.

In my teaching situation, opaque materials are occa-
sionally used to enlarge small size still pictures to
a large scale on various surfaces for reproduction and
4 5 6 to project three dimensional objects.

In my teaching situation, opaque materials are often
used to enlarge small size still pictures to a large
scale on various surfaces for reproduction and to
7 8 9 project three dimensional objects.

6. OVERHEAD TRANSPARENCIES

CRITERION

°Overhead transparencies should be used when:

a. it is necessary to show the development of a
whole from separate parts or the cumulative
growth of a whole;

b. it is desirable to write or mark on the projec-
tion material at the time of projection;

c. the teacher wishes to present illustrations while
facing the class.

A. Use of Overhead Transparencies to Show Development of
Wholes from Parts or the Cumulative Growth of a Whole,
to Write on Projection Material at the Time of Pro-
jection, or to Present Illustrations while the Teacher
Is Facing the Class

In my teaching situation, overhead transparencies are
rarely used to show the development of a whole from
separate parts or the cumulative growth of a whole,
to write or mark on the projection material at the
time of projection, or to present illustrations while
1 2 3 the teacher is facing the class.

In my teaching situation, overhead transparencies are occasionally used to show the development of a whole from separate parts or the cumulative growth of a whole, to write or mark on the projection material at the time of projection, or to present illustrations
4 5 6 while the teacher is facing the class.

In my teaching situation, overhead transparencies are often used to show the development of a whole from separate parts or the cumulative growth of a whole, to write on the projection material at the time of projection, or to present illustrations while the teacher
7 8 9 is facing the class.

7. SLIDES

CRITERION

   °Slides should be used when:

   a. it is desirable to reduce material for the purpose of easy storage and retrieval for future use;

   b. it is desirable to document field trips and laboratory experiments.

A. Use of Slides for Reduction in Size for Easy Storage and Retrieval and to Document Field Trips and Laboratory Experiments

In my teaching situation, slides are rarely used to reduce material for the purpose of easy storage and retrieval for future use or to document field trips
1 2 3 and laboratory experiments.

In my teaching situation, slides are occasionally used to reduce material for the purpose of easy storage and retrieval for future use or to document field trips
4 5 6 and laboratory experiments.

In my teaching situation, slides are often used to reduce material for the purpose of easy storage and retrieval for future use or to document field trips
7 8 9 and laboratory experiments.

8. FILMSTRIPS

> **CRITERION**
>
> °Filmstrips should be used when motion is not essential
> and when it is desirable to stop and discuss
> individual frames.

    A. Use of Filmstrips for Photographs of a Sequential
       Nature and for Discussion of Individual Frames

In my teaching situation, filmstrips are rarely used
when motion is not essential or when it is desirable
1 2 3 to stop and discuss individual frames.

In my teaching situation, filmstrips are occasionally
used when motion is not essential or when it is
4 5 6 desirable to stop and discuss individual frames.

In my teaching situation, filmstrips are often used
when motion is not essential or when it is desirable
7 8 9 to stop and discuss individual frames.

9. MOTION PICTURE FILMS

> **CRITERIA**
>
> °Motion picture films should be used when:
>
>   a. the experiences presented vicariously contribute
>   to the lecture;
>
>   b. they provide student motivation;
>
>   c. they present the material more effectively than
>   the teacher can.
>
> °Motion picture films should be used when:
>
>   a. the combination of verbalization and motion are
>   essential to the learning process;
>
>   b. the modification of time, size, and space is
>   needed;
>
>   c. summarization and review are needed.

°Eight millimeter motion picture films should be used:

    a. when cost is a factor in procurement;

    b. when sound is not essential;

    c. only for small group and individual instruction.

A. Use of Motion Picture Films to Enhance Lecture, to Provide Motivation and for Effective Presentation of Material

In my teaching situation, motion picture films are rarely used to enhance lectures, to provide student motivation, or to present material more effectively
1 2 3 than the teacher can.

In my teaching situation, motion picture films are occasionally used to enhance lectures, to provide student motivation, or to present material more
4 5 6 effectively than the teacher can.

In my teaching situation, motion picture films are often used to enhance lectures, to provide student motivation, or to present material more effectively
7 8 9 than the teacher can.

B. Use of Motion Picture Films for Verbalization and Motion, for Modification of Time, and for Review and Summarization

In my teaching situation, motion picture films are rarely used when verbalization and motion are essential to the learning process, when modification of time, size, and space is needed, or for the purpose
1 2 3 of review and summarization.

In my teaching situation, motion picture films are occasionally used when verbalization and motion are essential to the learning process, when modification of time, size, and space is needed, or for the purpose
4 5 6 of review and summarization.

In my teaching situation, motion picture films are often used when verbalization and motion are essential to the learning process, when modification of time, size, and space is needed, or for the purpose of
7 8 9 review and summarization.

C. Use of Eight Millimeter Motion Picture Films for Small Group or for Individual Instruction and for Inexpensive Local Production

In my teaching situation, eight millimeter motion picture films are rarely used for small group or individual instruction, when inexpensive local production is desirable, or when sound is not essen-
1 2 3   tial to the learning process.

In my teaching situation, eight millimeter motion picture films are occasionally used for small group or individual instruction, when inexpensive local production is desirable, or when sound is not essen-
4 5 6   tial to the learning process.

In my teaching situation, eight millimeter motion picture films are often used for small group or individual instruction, when inexpensive local production is desirable, or when sound is not essential to
7 8 9   the learning process.

APPENDIX K

INVENTORY OF EDUCATIONAL MEDIA AVAILABLE

TO LIBRARY SCIENCE TEACHERS

Location: Institution _____

        City _____

Size of Full-Time Faculty_____

Please indicate the number of the following types of Educational Media that are available to you and your full-time teaching faculty.

	Number
16mm Projectors	_____
8mm Projectors	_____
2 x 2 Slide Projectors (automatic)	_____
Filmstrip or Combination Filmstrip-Slide Projectors	_____
3¼ x 4 Overhead Projectors	_____
10 x 10 Overhead Projectors	_____
Opaque Projectors	_____
TV Receivers	_____
Record Players	_____
Tape Recorders	_____
Projection Carts	_____
Radio Receivers (AM-FM)	_____
Projection Screens	_____
Closed Circuit TV	_____

Please indicate and give number of any of the following types of Educational Media that are available to you.

(   ) Films, 16mm   _____

(   ) Filmstrips   _____

(   ) Recordings   _____

_____
Name and Title of Person Reporting

APPENDIX L

QUANTITATIVE STANDARDS FOR AUDIOVISUAL PERSONNEL,
EQUIPMENT AND MATERIALS

(Higher Education Section Only)

Developed by Dr. Gene Faris and Dr. Mendel Sherman,
Audiovisual Center, Indiana University
as part of a study conducted under the auspices of the
United States Office of Education
National Defense Education Act, Title VII, Part B program

Adopted By

The Department of Audiovisual Instruction, NEA
at the Board of Directors Meeting
in Washington, D. C. on October 30, 1965

and

The Association of Chief State School Audiovisual Officers
at the Executive Board Meeting in Chicago
on December 14, 1965

Published By

Department of Audiovisual Instruction
National Education Association
1201 Sixteenth Street, N. W.
Washington, D. C., 20036

January, 1966

	BASIC	ADVANCED
Radio Receivers (AM-FM)	3 per building 1 per building should be battery operated. 1 set all-wave for language use.	1 per 10 teaching stations
Projection Screens	One permanently mounted screen per classroom. No smaller than 70 x 70 with keystone elimination. Screen for auditorium and/or large group instructional area.	One permanently mounted screen per classroom plus portable screens as needed. Permanent screen no smaller than 70 x 70 with keystone elimination. Screen for auditorium and/or large group instructional area.
Local Production Equipment per Building	Dry Mount Press and Tacking Iron Paper Cutter Transparency Production Equipment 16mm Camera 8mm Camera Rapid Process Camera Equipped Darkroom Spirit Duplicator Primary Typewriter Copy Camera and Stand Light Box 35mm Still Camera Film Rewind Film Splicer (8mm and 16mm) Tape Splicer	Add to basic list: Slide Reproducer Second Type of Transparency Production Equipment Mechanical Lettering

PERSONNEL GUIDELINES (HIGHER EDUCATION)

One full-time audio-visual director with supporting staff as needed as program develops. Director might add personnel in the areas of administration, graphics, film production, audio production, ITV, teaching, etc. Start with full-time secretary and add secretarial help as needed.

Many colleges are creating materials centers and consequently the audio-visual program will become a part of this larger organizational pattern. Where this is happening it should be stressed that the recommendations concerning personnel remain the same with the possible addition of a director of the total materials program who could be an audio-visual communications specialist.

MATERIALS GUIDELINES (HIGHER EDUCATION)

	BASIC	ADVANCED
16mm films	500 college level titles plus 2 per instructor over 500. In addition, teacher education institutions should have the basic film collection recommended for elementary and secondary schools (1,000). OR An average of 3 film rentals per instructor per course	1,000 college level titles plus 3 per instructor over 500, plus elementary and secondary basic collection in teacher education institutions. OR An average of 5 film rentals per instructor per course.
Filmstrips	2000 titles with duplication as needed	3000 titles with duplication as needed
Recordings, Tape and Disc but not electronic lab materials	1000	2000

Due to the state of the field and the nature of certain media, it is extremely difficult, if not impossible, to develop quantitative guidelines for all types of audio-visual materials. The list below includes some of these materials. Even though quantitative guidelines are not recommended at this time for these materials, it must be recognized that they do make a unique contribution to the instructional program and must be made available for instructors' use. Each item listed must be supported with a fair share of the funds expended for media. The overall objectives of the media program should be to provide a wide variety of audio-visual materials with no one item dominating the program.

8mm Films	Transparencies and Transparency Masters	Globes
2 x 2 Slides	Study Prints	Dioramas
3¼ x 4 Slides	Maps	

MATERIALS BUDGET

To provide for a well-rounded materials program it is recommended that the basic complement of films, filmstrips and recordings be considered capital equipment and be purchased with such funds. To provide for the on-going materials program, including maintenance and replacement but not expansion, no less than 1% of the average per pupil cost in the school unit should be spent per year per student. The 1% amount would include film rentals if no basic film collection is started and subscription television (i.e., MPATI), but would not include salaries, building construction or remodeling, CCTV installations, or electronic learning centers.

To provide for an advanced materials program the 1% figure should be increased to 1.5%.

EQUIPMENT BUDGET

The capital expenditures necessary to secure the equipment recommended herein should be calculated from the price of the equipment. This figure will necessarily vary from school to school due to the range in equipment prices and the excellence of the equipment programs developed.

EQUIPMENT GUIDELINES (HIGHER EDUCATION)

	BASIC	ADVANCED
16mm Sound Projector	1 per 12 teaching stations (Multipurpose institutions)	1 per 8 teaching stations
	1 per 8 teaching stations (Single purpose institution)	1 per 5 teaching stations
8mm Projector	1 to 3 sound projectors per institution	1 per 10 teaching stations

Significant changes are occurring in the 8mm medium which do not at present justify quantitative guidelines. Because of the important contributions of these films to individual and small group learning, however, conservative quantities have been suggested. As equipment and materials become more stabilized and as sources expand, schools should increase the quantities beyond the amounts suggested in these guidelines.

	BASIC	ADVANCED
2 x 2 Slide Projector (Automatic)	1 per 10 teaching stations	1 per 6 teaching stations
Filmstrip or Combination Filmstrip-Slide Projector	1 per 10 teaching stations	1 per 5 teaching stations
Sound Filmstrip Projector	1 per 15 teaching stations	1 per 10 teaching stations
3¼ x 4 Projector (Overhead)	2 per institution	1 per building

	BASIC	ADVANCED
$3\frac{1}{4}$ x 4 Projector (Auditorium)	1 per auditorium	1 per auditorium plus arc or similar power
Filmstrip Viewer	5 to 10 at each filmstrip depository	10 to 20 at each filmstrip depository

It is assumed that viewers will be available for individual use at the depositories. As this activity increases additional viewers should be secured.

	BASIC	ADVANCED
Overhead Projector (10 x 10) Classroom Type	1 per 4 teaching stations	1 per teaching station
Overhead Projector (10 x 10) Auditorium Type	Appropriate number for large group instructional areas.	

An auditorium model overhead merely implies that the machine utilized has sufficient light output and optical capabilities to project a satisfactory image in an auditorium type situation.

	BASIC	ADVANCED
Opaque	3 to 6 per institution	8 to 12 per institution
TV Receivers	1 per each 24 viewers where programs available (or projection TV as needed)	1 per teaching station but no more than 24 viewers per set
Record Players	1 per 25 teaching stations	1 per 15 teaching stations
Tape Recorders	1 per 5 teaching stations	1 per 2 teaching stations
Projection Carts	1 per 3 to 6 pieces of equipment	1 per 2 to 4 pieces of equipment

	BASIC	ADVANCED
Light Control	Every classroom should have adequate light control. Adequate in this situation means that light can be controlled to the extent that all types of projected media can be utilized effectively.	
Video-Tape Recorders	1 per institution	1 per TV production unit
Closed-Circuit TV	1 studio per institution capable of distribution of programming to each teaching station	
	Many institutions may desire portable closed-circuit units per specialized use. Where this is the case, the portable units should be secured in addition to the basic recommendations noted above.	
Radio-Receivers (AM-FM)	3 available in central locations	Equivalent of 1 per classroom building
Projection Screens	1 per teaching station (at least 70 x 70) with provision for keystone elimination plus 1 portable screen per building. Suitable screen for auditorium - large or small group use.	
Electronic Learning Lab	1 lab per institution	As programs dictate
Local Production Equipment	Dry Mount Press and Tacking Iron Paper Cutter Transparency Production Equipment 16mm Camera, 8mm Camera 35mm Camera, Rapid Process Camera Equipped Darkroom, Copy Camera Spirit Duplicator, Light Box Primary Typewriter, Film Rewind Film Splicer, Tape Splicer	Add to basic list: Slide Reproducer Second Type of Transparency Producer Mechanical Lettering

APPENDIX M

FOLLOW UP LETTER

Niemann Apt., D-21
Norman, Oklahoma
March 21, 1966

Dear Library Educator:

A few weeks ago I sent you a letter describing the research
which I am conducting for my doctoral dissertation. This
letter also requested that you fill out an Evaluative Check-
list and return it to me. The response has been good, so if
you have mailed the Evaluative Checklist to me, please dis-
regard this communication. However, as was pointed out in
the letter, this study is concerned with the thirty-three
accredited American graduate library schools. Since the
population is relatively small, your response is essential.

I know that you are extremely busy with your work and that
this checklist came to you at a very inopportune time; how-
ever, I will be indeed grateful if you will return the com-
pleted checklist at your earliest convenience. If you need
another copy of the checklist, please let me know and I will
be happy to forward one to you.

Thank you for any consideration given me relative to this
matter.

Very truly yours,

Herman L. Totten

HLT:cnl

APPENDIX N

ACCREDITED AMERICAN GRADUATE LIBRARY SCHOOLS

1. Atlanta University, Atlanta, Georgia

2. University of California, Berkeley, California

3. University of California at Los Angeles, Los Angeles, California

4. Catholic University of America, Washington, D. C.

5. University of Chicago, Chicago, Illinois

6. Columbia University, New York, New York

7. University of Denver, Denver, Colorado

8. Drexel Institute of Technology, Philadelphia Pennsylvania

9. Emory University, Atlanta, Georgia

10. Florida State University, Tallahassee, Florida

11. University of Illinois, Urbana, Illinois

12. Indiana University, Bloomington, Indiana

13. Kent State University, Kent, Ohio

14. University of Kentucky, Lexington, Kentucky

15. Louisiana State University, Baton Rouge, Louisiana

16. University of Michigan, Ann Arbor, Michigan

17. University of Minnesota, Minneapolis, Minnesota

18. University of North Carolina, Chapel Hill, North Carolina

19. University of Oklahoma, Norman, Oklahoma

20. George Peabody College for Teachers, Nashville, Tennessee

21. University of Pittsburgh, Pittsburgh, Pennsylvania

22. Pratt Institute, Brooklyn, New York

23. Rosary College, River Forest, Illinois

24. Rutgers College, River Forest, Illinois

25. Simmons College, Boston, Massachusetts

26. University of Southern California, Los Angeles, California

27. Syracuse University, Syracuse, New York

28. University of Texas, Austin, Texas

29. Texas Woman's University, Denton, Texas

30. University of Washington, Seattle, Washington

31. Western Michigan University, Kalamazoo, Michigan

32. Western Reserve University, Cleveland, Ohio

33. University of Wisconsin, Madison, Wisconsin