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ABSTRACT

In this study of Title VII, the research and dissemination activities carried out between 1958 and 1968, the educational advances and changes made , and the strengths and weaknesses of the administrative procedures are investigated, analyzed, researched, and assessed. Activities carried out in the conduct of the study were: (1) thorough research and analysis of the literature and similar data on Title VII; (2) on-site observation of selected institutions where a number of studies had been conducted; (3) distribution and evaluation of field and mail interviews of project directors and other personnel associated with Title VII; and (4) convening an advisory group to assist in formulating assessment guidelines and recommendations for future policies. The report includes discussions of the following topics: legislation, expenditures of monies, Title VII impact on university media departments and university related organizations, results of journal and convention program reviews, research methodology, the impact of Title VII on five educational media, the foundations and media, results of a survey and questionnaire, administrative and management analysis, and past experience as a guide in future programs and legislation. For overview of this document see ED 042 065. (DB)

A STUDY OF

THE IMPACT OF RESEARCH ON UTILIZATION OF MEDIA FOR EDUCATIONAL PURPOSES

SPONSORED BY

NDEA TITLE VII 1958-1968

FINAL REPORT

Robert T. Filep

United States Office of Education
Contract No.
OEC-0-9-420246-3462(010)

July 15, 1970

Institute for Educational Development

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the staff regarding the Foundation's work on educational
television.

Original source data for a number of chapters in this report
were supplied by several individuals working at various times
on the project staff. In each instance, their contributions
have been carefully modified and amplified under the aegis
of the project director. Those who provided information,
analyses, etc., for the quarterly reports of the project
which later grew into the indicated final chapters of this
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The project director also wishes to acknowledge the latitude
and freedom afforded by Sidney P. Marland, IED's president
and Project Principal Investigator to pursue the project with
minimal constraints and occasional guidance. His contributions
as an Advisory Committee member were invaluable; his construc-
tive advice and counsel in his role as "Captain" of IED's ship
were always timely and on target.

This task was started early in the Spring of 1969 and the unfortunate death of Dr. James D. Finn, Chairman of the Department of Instructional Technology at the University of Southern California, at that time, deprived the project of the benefit of his involvement. His Gaelic wit and wisdom were sorely missed. In the sense that he was a key partici-pant (both directly and indirectly) in many of the Title VII projects, his influence was ever present in this assessment. By virtue of being a great teacher, and one of the first who saw the potential benefits and shortcomings of technology in education, his influence has had an indelible impact on this endeavor.

Robert T. Filep

El Segundo, California
July 15, 1970

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INTRODUCTION

Rationale and Objectives

The past is prologue--the events of the 50's and 60's
inevitably will influence American society in the 70's as
it educates its young. Thus, the federal legislation that
was devoted to strengthening education during the 60's will
also help to shape education during the current decade. This
will be particularly evident in legislation dealing with new
approaches to teaching and curriculum design and with a fuller
school utilization of the knowledge derived from recent audio-
visual and technological developments. To plan and cope with
the advances to be made in education during the 70's, it is
valuable to review what has gone before.

Until 1958, only two major pieces of legislation aimed at
improving and strengthening American education on a broad
front had become law. In 1958, the National Defense Education
Act (NDEA) was passed, marking a turning point in the history
of federal aid to education and providing a base from which
more ambitious and extensive programs would be launched in
the 60's.

A study of the total effect of the National Defense Education
Act would be both interesting and useful. Within the NDEA,
however, the section identified as Title VII is of a more
manageable size for assessment and study than the total act,
and has certain characteristics worthy of careful analysis
and close scrutiny. Total expenditures under this title were
$40.3 million for more than 600 projects over ten years. This
is in contrast to well over a billion and one-half dollars
spent and the thousands of projects supported under the rest
of the act.

Administratively, Title VII is interesting because it was
"categorical" legislation in support of research and the
dissemination of the research findings in the fields of
instructional media and technology. It did not provide,
however, for large-scale "purchase of innovative materials,
equipment, or facilities." Furthermore, it contained the
unusual provision that a committee comprised of representatives
from the lay and educational communities would evaluate
proposals for research grants and contracts.

For the above reasons, and for the still more important factor
that Title VII was closely related to the state of ferment
characteristic of education during the late 1950's and 1960's,

the U. S. Office of Education requested that this study of
Title VII be conducted. The objective was to discover what
can be learned from its impact and from the administrative
problems involved in its implementation and operation. In
addition, this study will be used to guide future legislation
and future programs of a similar nature.

*The overall objective of this project was to review the
research and dissemination activities carried out under Title
VII between 1958 and 1968 and to assess the educational ad-
vances and changes made under its auspices.*

*Secondly, this study also evaluates the strengths and weak-
nesses of the administrative procedures required by the
legislation. Specific recommendations are made regarding
policies and practices for future programs of this nature.*

These objectives were investigated, analyzed, researched,
and assessed by way of:

- Thorough research and analysis of the literature
  and similar data available on Title VII.

- On-site observation of selected institutions where
  a number of studies had been conducted under this
  title of the act.

- Distribution and evaluation of field and mail
  interviews of project directors and other
  personnel associated with Title VII.

- Convening an advisory group to assist in formulating
  assessment guidelines and recommendations for future
  policies. (See Figure 1)

Because Title VII can be neither adequately evaluated nor
fully understood without considering it in reference to
the educational activity prevalent in its time, one should
first say something about the state of ferment characterizing
the period.

Title VII and the Changing Nature of American Education

The years since Title VII came into existence in 1958 have
been a time of unprecedented ferment in American education.
Much of this can be traced to the shock wave that went through
the American people at the launching of the first Soviet
Sputnik in October 1957. Much, but not all. The seeds of

IMPLICATIONS
FOR FUTURE
PROGRAMS

| ADMINISTRATION AND LEGISLATION |

| IMPACT INDICES |

| RESEARCH, DEVELOPMENT AND APPLICATION |

IMPACT EVALUATION
IN RELATION TO
OBJECTIVES

PROFILE
"WHAT CAN WE
COUNT AND
MEASURE ?"

CHARACTER
"WHAT DO WE
SEE & FEEL ?"

"WHITE" PAPER
"IN CONTEXT,
WHAT DID IT
MEAN ?"

EXTRAPOLATIONS

PEOPLE

PRODUCTS

PROGRAMS

EXPENDITURES

CRITICAL THEMES

ATTITUDES

TRENDS

ANALYSIS & SYNTHESIS
AREAS

RAW DATA
RESEARCH MATRIX & ANATOMY
INCIDENCE OF CITATIONS
LITERATURE

ADVISORY COMMITTEE
MINUTES OF OE ACTIVITIES
NATIONAL SCENE

INTERVIEWS AND
QUESTIONNAIRES
SITE VISITS

EXAMPLES OF IMPACT
PROJECT
TREND
IDEATIONAL
CATALYTIC

FIG. 1. TITLE VII STUDY RATIONALE

educational change and the subsequent dissatisfaction with the slowness of change had been planted long before.

A famous series of studies at Columbia Teachers College in the late 1930's had concluded that it took about 50 years--after method and materials had been thoroughly developed--to diffuse a new idea or practice through the American school system.[1]

By 1946, this estimate had been revised to 25 years.[2] Many critics, within and without the schools and colleges, had challenged the basic assumptions of the educational system and its effectiveness in teaching--among other things--basic skills in mather   cs and science. The challenge of Sputnik to this growing c stioning and re-examination was to suggest that the Soviet Union might be moving ahead of this country in the teaching of mathematics and science. This national concern and the wave of doubt it cast tended to bring to a focus the question of whether American education might need to be revitalized and improved by means of swift and vigorous action.

The challenges and demands thrown at the American educational system in those years of ferment were neither technical nor tactical: they were basic and broad in scope. They had to do with fundamental doubts concerning excellence--how good is American education compared to that of other systems, especially that of the Soviet Union?; relevance--how well is it meeting the needs of the American people, and of their different educational groups?; productivity--is there any rise in accomplishments and achievements in proportion to constantly and rapidly rising costs?; and accountability-- what is being done to assess the system in terms of the above excellence, relevance, and productivity?

The response to questions of these kinds was a great deal of self-searching in the schools, a new interest within the scientific and scholarly community in contributing to the quality of education at all levels, and an impressive burst of activity (much of it financed by federal funds)--in re- vising curricula, preparing new materials, trying new tech- nologies, educating and re-training teachers, and researching basic educational problems and methods.

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[1] Mort, P. R. and Cornell, F. G. *American schools in transition*. New York: Teachers College, Columbia University, 1941.

[2] Mort, P. R. and Pierce, T. M. *Measuring community adaptability*. School Executive, 1947, 66, pp. 35-36.

Riding the tide of this educational upsurge and ferment, has been a main current of change in the form of a growing reliance on a systematic approach to education. The significance of this development can best be seen against the background of the traditional privacy of the classroom and the assumed self-sufficiency of the teacher.

In America, as elsewhere, the teacher has typically had to play an all-purpose role--lecturing, drilling, discussing, counseling, disciplining, course-structuring, record-keeping, and performing other activities. Even in highly-sophisticated educational systems, a teacher usually has been responsible for all of the teaching of one class of students, at least within the elementary school context. He or she has been expected to know the substance of the elementary curriculum--science, language, mathematics, social studies, communication skills, and fine arts. And, in addition, has had to serve as dean of students, examiner, counselor, and registrar of records.

These roles and the assumed self-sufficiency of each and every teacher to handle them competently, if not expertly, evolved from the tradition and fond nostalgia of the "one room schoolhouse." In those one room schools, a teacher often had to direct and supervise, if not teach, for as many as eight grades, with the result that most teaching was by book and blackboard. The textbook usually governed the content of the curriculum and, in an early stage of the development of school systems, the teacher was also expected to serve as the textbook.

This heavy load of roles and the use of a teacher's time and responsibility have long been questioned and criticized. Edward L. Thorndike of Columbia University said in 1912, long before the major modern advances in educational technology, that "A human being should not be wasted in doing what 40 sheets of paper or two phonographs can do."[3] There has been a long history of effort to bring additional learning resources into the classroom and to encourage a variety of learning activities in addition to the traditional pattern of listen-study-recite. Increasing use of additional learning resources has grown partly out of the rising amount of attention and time being captured by the audiovisual media in American life, and the adaptation of these and other media as learning resources for the schools. For instance, U.S. children now spend about as much time watching home television during their first 12 or 15 years of life as they spend in school.

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[3]Thorndike, Edward L. *Education*. New York: The Macmillan Company, 1912, p. 167.

Title VII
National Defense Education Act

HISTORICAL
OUTLINE

Passed by the House, 212 to 85, 131 not voting,
Passed by the Senate 66 to 15, 15 not voting.

Signed into law by President Eisenhower,
September 2, 1958.

Designed to "encourage research and experi-
mentation in the more effective utilization
of television, radio, motion pictures, and
related media" (including, by later amendment,
printed and published materials).

Expended in 10 years some $40.3 million on
approximately 600 grants and contracts.

Allowed to lapse on 30 June 1968, when its
functions were authorized principally under
other legislation.

Another source for change in the teacher's role has grown out of the increased recognition and realization of the wide range of individual differences among students and from the attempt to cope with--and adapt and adjust to--these variations and other cultural, social, and intellectual differences.

Today's sophisticated learning resources bear a relationship to the traditional textbook as widely different as Apollo 13 to the first flight by the Wright Brothers! The acceptance of the new resources has been so widespread that it is now difficult to imagine a classroom totally lacking in film-strips, motion pictures, tape recorders, transparencies, overhead projectors, instructional television and radio, programmed self-instructional materials in many forms, practice kits, and similar devices. Such facilities not only enormously enrich the content of the curriculum, they also provide new techniques of working with it, as well as point to exciting ways in which the student can vary and guide his own study and practice. These innovations free the teacher from such time-consuming activities as individual language practice and arithmetic drill, and supplement his effectiveness in critical areas of his primary duties: teaching.

These new resources did not receive overnight acceptance. Instructional films, for example, have been available for many decades, but their use was negligible until the launching of Sputnik sparked an unprecedented concern and dissatisfaction with the learning devices and practices of the time. In 1958, the annual expenditure of elementary and secondary schools for audiovisual equipment was about $62 million; in 1968, it was about $253 million. In 1958, there were about 50 language laboratories in American secondary schools; in 1963, about 5,000. And still, the actual penetration of such teaching resources is very slight. The obstacles are many, including inappropriateness of materials, lack of funds and facilities, and defense of the classroom as the last bastion of humanism. The Commission on Instructional Technology, for example, reported recently that no more than five percent, and perhaps as little as one percent, of class hours in American schools, are presently given over to audiovisual instruction.[4]

Despite the slow growth, however, of new approaches like team teaching and the relatively slow acceptance of additional learning resources, the new role of the teacher is becoming clearer. Recently, this new role for the classroom teacher

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[4]Commission on Instructional Technology. *To Improve Learning.* Committee on Education and Labor, House of Representatives, March 1970.

has been clearly and sharply defined as first and foremost
that of an effective and enriched guide of learning rather
than a "jack of all trades but master of none." This role
is that of a manager of a system of learning activity with-
in the classroom. No longer is the teacher expected to do
everything. Rather, now he is expected to guide his students
to the particular combination of learning activities and
resources that best meet their needs at any given time.

To do this, the teacher needs support: resources such as
movie projectors; language laboratories; instructional tele-
vision and films; the chance to share knowledge about his
specialties with other teachers; and the help of semipro-
fessionals with routine duties. Increasingly, the teacher
is coming to think of his job as an educational specialist
who channels, combines, and brings an interrelated system
of learning resources to bear on the needs and interests
of the students.

The trend of this system-related approach centers on the
idea of individualizing instruction so that students can
work at their own pace with maximum motivation as a general
pattern of education. This has been accepted very slowly,
because schools are typically organized for group rather
than individual pacing. Nothing less than a completely
revised curriculum and completely revised school procedures
would make individualized instruction on a broad scale
possible. In a few experimental schools, however, and
within limited sectors of the curriculum, individualized
instruction has made some progress. The ungraded school
is becoming more common.

Programmed instructional materials have been the precursor
to large scale, individualized instruction. And these have
had to follow an even rougher road to adoption, because ex-
cellent programs have been in short supply and also because
the programmed instruction method directly challenges the
very nature of instruction rather than merely affecting
classroom efficiency. In fact, programmed instruction re-
quires a statement of very specific performance objectives
for teaching and assessment. Planning for instruction,
testing, and accountability are central to such a programming
process; the overall approach provides a strategy whereby a
teacher can tell how well the program is doing, and both the
teacher and the student can tell how well the student is doing.
Performance contracting endeavors are one by-product of this
approach.

This current argument for individualization of instruction
parallels the movement toward upgrading and updating curricula,
which gained so much impetus from Sputnik. If American students

were not learning by the best and newest methods, especially
in mathematics and science, why not? If many of them were
going through school without really learning how to read,
why not? Thus in these years of ferment, beginning in 1958,
there has been a number of national curricular revisions
involving leading scholars in each field, based on the
original pattern of the Physical Science Study Committee.
The "new math" has swept the schools, concerned attention
has been given to finding improved ways to teach reading,
and so on.

If the process of programmed instruction was harmonious
with the movement toward individualization, then instructional
films and television, improved text materials, and ingenious
practice and demonstration devices were typical of the move-
ment to update curricula. These were intended to bring learning
experiences to the student that the teacher could not provide.
But it was found that to update curricula, it was necessary
to update teachers too. Therefore, there has been intensive
activity in teacher training and special attention given to
teacher training institutions.

Throughout these developments, the calls for accountability
have been heard more loudly and more insistently. These
requests have been resisted bitterly by humanists and others
who argue, with some justification, that the effects of
education cannot, at least presently, be measured fully.

Accountability and evaluation have been accepted only
grudgingly and reluctantly by school administrators who
have to face the taxpayers. It has been resisted by teachers
and makers of educational materials who fear unfavorable or
uncomfortable comparisons. But the demand for an accounting
grows. What are the new tax dollars accomplishing? How
effective are the new curricula and the new technologies?
Are our students learning as well as other students? Are
we making the most effective use of our teaching and are
we employing the most productive technologies? And lastly,
how can the community participate in setting the goals and
objectives that are desired, i.e., set the criteria for
accountability?

The outcome of these inquiries has been to arouse a new
interest in using and improving the methods of program
evaluation, evidenced by the establishment of several
university research units devoted to the study of such
evaluative approaches and by the writing of requirements
for assessment into the more recent federal educational
legislation.

This was the nature of the ferment in education. It could be described as an early stage of educational revolution. As John Gardner, former Secretary of Health, Education and Welfare (HEW), recently said:

"We have already developed and tested many of the new ingredients of a new era in education. But the pieces of the educational revolution are lying around unassembled."[5]

When these pieces are assembled, this assembly will undoubtedly be done in terms of a new technology and philosophy of education which reflects, tacts, meets and answers the fast changing needs of our society. The critical need to assemble and combine human resources and talents with technological advances and knowledge by using a systems approach to solving educational problems was much talked about within and outside Title VII during the 1960's. The need for such advances in the process and systematic approach to educational problems was described by the Commission on Instructional Technology, in its 1969 report which indicated the necessity of finding----

"...a systematic way of designing, carrying out, and evaluating the total process of learning and teaching, in terms of specific objectives, and employing a combination of human and nonhuman resources to bring about more effective instruction."[6]

The objectives of the National Defense Education Act were formulated and set forth in an atmosphere of national emergency. Science and technology were to be rallied to increase the national security, and every American child able to absorb the new technology was to be offered the opportunity to be educated to his capacity. It was decided that throughout their school career each student's counseling for vocations was to be increased. Especially in science, mathematics, and modern languages, students should have the advantages

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[5]Gardner, John W. Conversation with the staff of the Commission on Instructional Technology, July 1969. Quoted in *To Improve Learning*, A Report to the President and the Congress of the United States by the Commission on Instructional Technology, Washington, D. C., 1970, p. 38.

[6]*To Improve Learning*, pp. 5 and 38.

of the latest instructional resources. This is where Title
VII came in: *"to mobilize the latest and most effective
communication technologies in support of classroom learning."*
(See Figure 2.)

It is fair to say that a strong emphasis o.. utilization,
a summing up of what had already been found out about new
instructional technologies, identification of most promising
avenues for further study, scientific evaluation of the
effectiveness of educational media and materials--were all
salient and uppermost in the minds of the legislators who
dealt with Title VII.

As Title VII came out of the two Houses of Congress and the
conference committee, it retained the emphasis on research
that would be practically useful in improving teaching
through the use of media and in "getting such knowledge"
into circulation.

Fig. 2. Distribution of Title VII Expenditures by Instructional Medium

Combination of
Media

$15.8

Television

$9.4

Programmed
Instruction

$4.8

Other
Media

$6.1

Motion
Pictures
$2.8

Still
Projection
$0.4

Auditory Media
$1.2
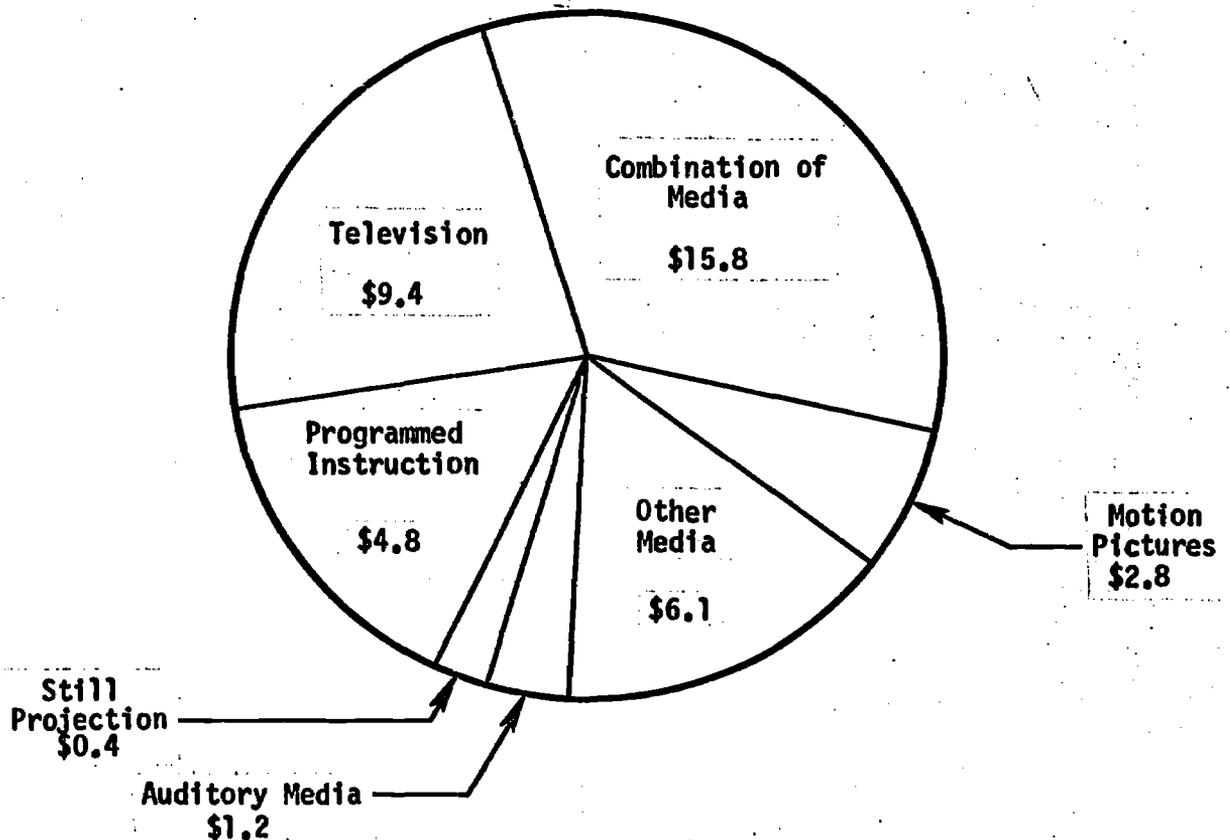
Thus Title VII came into effect on September 2, 1958, with
high hopes of what it could accomplish by mobilizing and
channeling knowledge to make education more effective.
For an outline of the content and structure of Title VII,
see Title VII Provisions in Brief, Page 18.

How Title VII Was Administered

The legislation did not provide for a permanent staff,
although it did contain liberal provisions for employing
consultants. The few permanent employees, whom the Office
of Education was able to assign to the administration of
Title VII, were therefore supplemented by specialists in
the field of instructional media brought in from the uni-
versities on one and one-half year, or shorter appointments.
Field readers were employed primarily for Part A projects,
and were compensated as consultants. This made, on the
one hand, for the infusion of fresh ideas and viewpoints;
on the other, for frequent turnover of administrative
personnel.

The relation of the Advisory Committee to Part A of Title
VII was somewhat different from its relation to Part B.
The committee reviewed all proposals for grants and con-
tracts under Part A (the research program), and took formal
action on them at its meetings. The Commissioner of Education
was empowered to support only those projects specifically
approved by the committee, but he retained the right to
question some proposals which they approved. The committee
exerted no such binding authority over Part B (dissemination)
projects. Its advice was sought on Part B proposals, but
support for them was not contingent upon the committee's
approval. In practice, therefore, the Office of Education
Title VII staff had greater leeway with the dissemination
than with the research program.

Figure 3 is a representational organization chart of Title
VII's location in the U. S. Office of Education. Prior to
the enactment of NDEA, the office's capability in media had
been limited to a radio script and film distribution group.
These functions and personnel were absorbed into the Title
VII activity. Once established, the Title VII function had
a number of locations on the USOE tables of organization.
In fact, in its later years, its functions were distributed
across a number of bureaus.
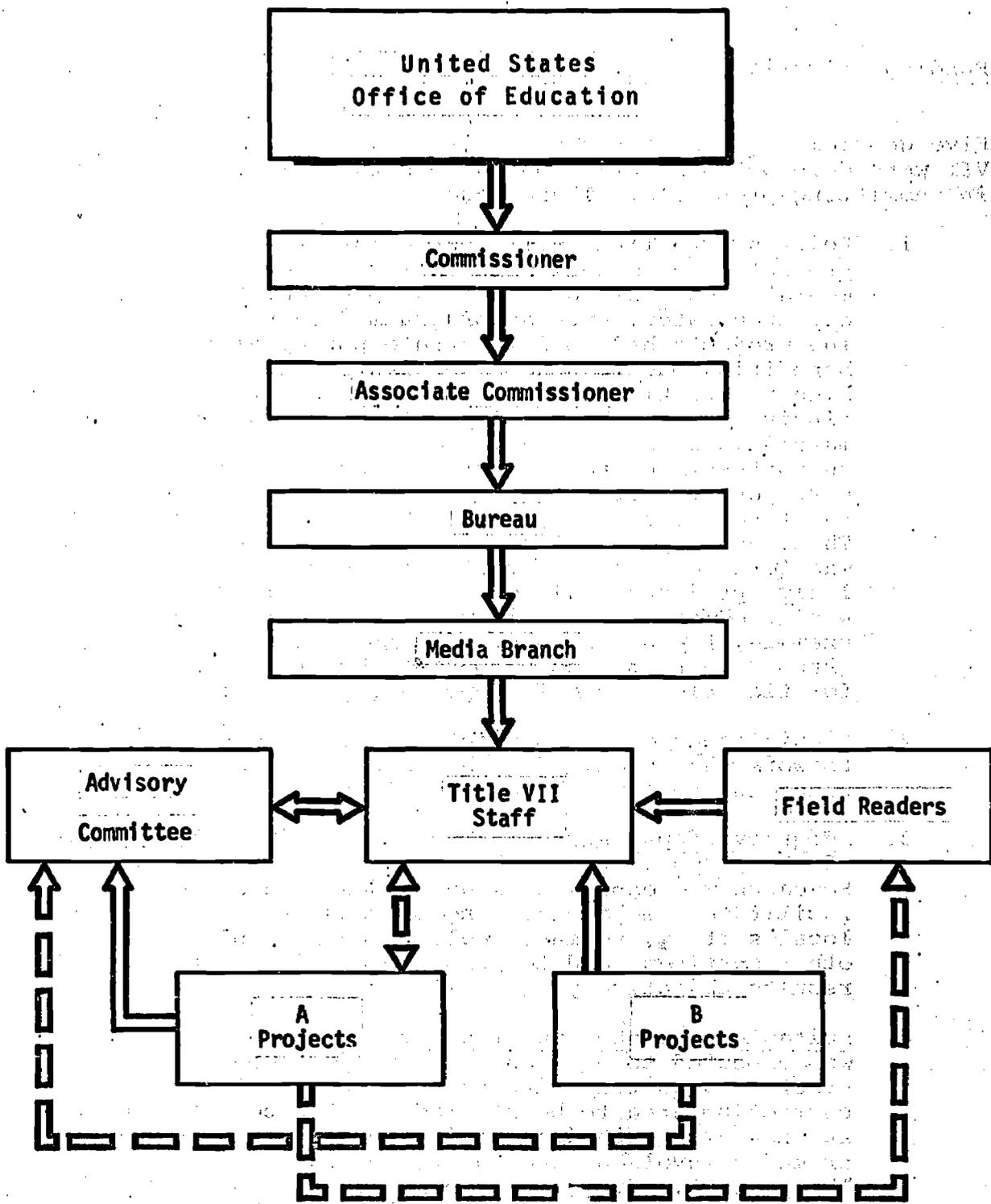
Fig. 3. Schematic Organizational Chart of Title VII's "location" in the U. S. Office of Education

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Funding Criteria

Five general criteria for support of projects under Title VII were developed and distributed to persons interested in submitting proposals. These were:

1. Relevance to Title VII program intent. The projects had to deal with "newer educational media"--those cited in the law plus any that appeared later, such as programmed instruction. The projects had to demonstrate potential for benefiting public schools or institutions of higher education. Proposals which dealt exclusively with the development of instructional materials were not considered eligible for support--except to the extent necessary to carry out research or to report or demonstrate the findings of research on the new materials. Thus, development of curricular materials per se was foreclosed and shut off from support. Similarly, projects dealing with the administrative use of educational media were ineligible. For example, the development of computers for programmed learning was supported, but their use for flexible scheduling apparently was not.

2. Significance of the project. Priority was given to work that promised to be of national significance and to contribute valuable new information.

3. Adequacy of procedures. The scientific quality of the proposed research was carefully evaluated. Research was expected to be so designed as to facilitate the generalizing of results beyond a local setting, to make replication possible in other settings, and to permit measuring of the results objectively and reliably.

4. Suitable personnel and facilities. Each proposal was expected to show that the project would be staffed adequately with persons competent in the curriculum area to be studied, in the educational and research methodology, in the use of the medium or media involved, and in other areas relevant to the project. It was also expected that necessary research equipment and materials would be shown to be available. Ordinarily, Title VII funds were not to be used for purchase of equipment, although in certain cases 20 percent per year of the cost of essential equipment was regarded as acceptable.

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5. Economic efficiency. Projects were to be
    evaluated in terms of their cost compared
    with the cost of alternative approaches to
    the same task.

As Part A proposals were developed they were sent to field
readers for detailed comments and evaluation. In the later
years of the Title VII program, these readers were brought
to Washington, D. C., twice a year, to discuss the projects
with the Office of Education staff. Abstracts of all
proposed projects and complete copies of all the proposals
recommended favorably by the field readers were sent to
the Advisory Committee in advance of meetings with a recom-
mendation by the office staff. On the first day of a com-
mittee meeting, all the proposals recommended by the readers
and the staff, together with any additional projects that
two or more committee members asked to have discussed, were
set aside, reread, and individually rated by each committee
member at the conclusion of the day's meeting. During the
remaining days of the meeting, each proposal was discussed
and formally acted upon. The committee could approve a
project subject to negotiation between the Office of Edu-
cation staff and the contractor of the proposal regarding
desired changes in research design or budget. It could
disapprove a project with or without comments.

The Title VII staff members within the Office of Education
were required to provide an adequate and usable summary
and evaluation of Part A proposals, and then to serve as
negotiators and contract monitors for the projects that
were to be funded. With Part B, the Title VII staff had
greater leeway. It would initiate discussion of projects
with prospective contractors, and it could fund projects
on its own decision, subject to the restrictions of the
Act and the procedures of the office. In many instances,
external opinions were solicited regarding a proposal prior
to a decision. A shift to pre-specified program priorities
and areas occurred during the later years of Title VII.

The Legislated Advisory Committee

The function and importance of the Advisory Committee
changed somewhat as the position of Title VII was altered
within the Office of Education. During the first four
years, when the new program was getting under way and
before the system of field readers, long-term consultants,
and staff evaluations was fully built, the committee was

expected to review proposals and assist in establishing
guidelines for the operation of Title VII. During this
time, members of the committee--many of whom held strong
opinions regarding the future of Title VII--reported that
they often felt frustrated. This frustration seemed to
have two main causes: first, discussion of technical
details was carried on at the expense of policy discussions,
and secondly, the USOE commissioners did not share the com-
mittee's optimism regarding the future of instructional media.
In the beginning, however, committee members did feel a greater
sense of being useful and being depended on, than in later
years when other media oriented programs gradually "absorbed"
Title VII.

Between 1962 and 1965, the Office of Education was given
vastly increased responsibilities for administering federal
funds and programs, and was in a perpetual state of reorgani-
zation to meet these new obligations. This was a period of
uncertainty both for the office staff and for the committee.
The reorganization of 1965 diffused the Title VII projects
throughout the office and left the committee with somewhat
less than a clear mandate. For the last three years of
Title VII's existence, the resources of the Advisory Committee
were called upon more often for policy recommendations than
for help with the details of administration. Thus, members
were able to realize the committee's most useful function--
policy advice--only toward the end.

The Study Section

As the Office of Education gained experience with Title VII,
it added a new administrative element: an Educational Media
Study Section. This was made up of scholars from various
disciplines who had been active in the study of instructional
media. The initial purpose of this group was to furnish
guidance in the selection of priority areas for research,
thus providing a sense of direction rather than diffusing
research under Title VII. This group met rather infrequently,
but exerted considerable influence on the program. This in-
fluence predominated because some of its members were also
members of the committee, and also it could offer advice
directly to the staff. It commissioned several papers that
summed up research in various important areas and pointed
toward urgently needed additional research.

Toward the end of Title VII, the Study Section and the
Advisory Committee together submitted to the Commissioner
a set of far-reaching recommendations for the development

of instructional media research. One of these was for a major review of the state of the art in instructional media supplementary to the report of the Carnegie Commission on Educational Television. Provision was made for carrying out this study under the Public Broadcasting Act. The recommended review was one of the last projects financed under Title VII, and was completed in late 1969 by a distinguished commission--the Commission on Instructional Technology.

Title VII
National Defense Education Act

PROVISIONS
In brief

Part A authorized the Commissioner of Education, through
grants or contracts, to "conduct, assist, and foster
research and experimentation...including the development
of new and more effective techniques and methods: (1) for
utilizing and adapting motion pictures, printed and published
materials, videotapes and other audio-visual aids, film
strips, slides and other visual aids, recordings (including
magnetic tapes) and other auditory aids, and radio or tele-
vision scripts for such purposes; (2) for training teachers
to utilize such media with maximum effectiveness; and (3)
for presenting academic subject matter through such media."

Part B authorized the Commissioner to "disseminate information
concerning new educational media, including the results of
research and experimentation conducted under Part A to state
or local educational agencies, for use in their public ele-
mentary or secondary schools, and to institutions of higher
education" by entering into contracts for "(1) studies and
surveys to determine the need for increased or improved uti-
lization of (instructional media)....; (2) catalogs, reviews,
bibliographies, abstracts, analyses of research and experi-
mentation, and such other materials as are generally useful
in the encouragement and more effective use of (instructional
media)...."; (3) (upon request) providing "advice, counsel,
technical assistance and demonstrations to state or local
educational agencies and institutions of higher education
undertaking to utilize such media."

The Advisory Committee was to consist of the Commissioner,
as chairman, a representative of the National Science
Foundation, and three persons from each of the following
constituencies: (1) individuals identified with the
sciences, liberal arts, or modern foreign languages in
institutions of higher education; (2) individuals engaged
in teaching or supervision of teaching in elementary or
secondary schools; (3) individuals of demonstrated ability
in the utilization or adaptation of (instructional media);
and (4) individuals representative of the lay public who
have demonstrated an interest in the problems of communi-
cation media. The Committee was to (1) advise, consult
with, and make recommendations to the Commissioner on
matters relating to the utilization and adaptation of
(instructional media), and on matters of basic policy
arising in the administration of Title VII; (2) review
all applications for grants-in-aid under Part A, and
certify approval to the Commissioner of any such projects
which it believes are appropriate for carrying out the
provisions of Title VII; (3) review all proposals by the
Commissioner to enter into contracts under Title VII and
certify approval of any such contracts which it believes
are appropriate under Title VII.

Appropriations were authorized in the amount of $3 million
for the first year and $5 million for each of the nine
succeeding years.

LEGISLATION: TITLE VII, ITS AMENDMENTS, AND RELATED LAWS

Historical Background

As the 1950's opened it became apparent that the United
States was exerting herself mightily just to keep from
falling behind in the field of education.   After World War
II the country found itself amidst spiraling inflation and
the 16 or 17 years of neglect of the schools, incurred dur-
ing periods of depression and war, had to be made up.   Yet
this recovery had to be accomplished while dealing with the
combined impact of both the wartime baby boom, whose vanguard
began arriving for classes in the late 1940's, and the sudden
and pervasive information explosion.[1]   To cope with both of
these problems, local tax rates were increased, innumerable
bond issues were floated, permissible levels of district in-
debtedness were constantly raised, and small, inefficient
school districts were merged.   "Scholars and pamphleteers,
often working with funds provided by major private foundations,
addressed themselves with increasing fervor to the patent
inadequacies of the educational system and to possible new
directions."[2]   Some suggested obtaining federal funds to
bridge the gap, but given the American tradition of allowing
only state and local responsibility for schools, proponents
of federal aid to education were labeled as constituting a
threat to states' rights.   Only an apparent national emergency

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[1]Stephen Bailey and Edith Mosher.   *ESEA: The Office of
Education Administers a Law*, pp. 4-11.

[2]*Ibid.*, p. 5.   See also Charles E. Wilson, *A study of the
Background and Passage of the National Defense Education
Act*, pp. 10-31.

could overcome resistance accumulated over nearly 200 years.[3]

In the 1950's, a frightening new age was emerging, dominated by science and the military. The political climate was dominated by cold war apprehensions. These fears culminated in October of 1957 when Sputnik raised the specter of a hail of Soviet warheads and dramatized unexpected educational successes.

Preceding this Russian technical feat and the apparent threat of superiority in the field of Soviet education, the Office of Education had composed a number of commissions and other groups to examine the problems facing United States education. These were in response to a number of emerging "postwar" educational problems.

In 1956, for instance, President Eisenhower appointed a Commission on Education Beyond the High School. Reporting the schools' heavy burden due to wartime births, the commission stressed the need for increasing, by means of federal support, the quantity and quality of both teachers and the

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[3]*American resistance to federal control or support of state and local affairs originated as a reaction against colonialism, and this bifurcation was carefully spelled out in the Constitution. Aversion to federal involvement has been particularly intense in the field of education. The gradual evolution toward acceptance of national concern and assistance began with the Ordinance of 1785, which set aside township lands for schools. In 1862, the Morrill Land Grant Act laid the basis for many state colleges, and the Smith-Hughes Act of 1917 assisted state efforts in developing vocational education. In 1950, federal assistance to areas affected by the proximity of large federally-related enterprises (called "impacted areas") was initiated. These major precedents combined with acceptance of federal participation in other kinds of programs--the post office, federal law enforcement systems, and county agencies. With the New Deal had come the WPA, the Civilian Conservation Corps, the Rural Electrification Administration, and the Farm Home Loan Corporation. Social Security, of course, provided direct payment to individuals. Yet the National Defense Education Act of 1958 and subsequent bills through the 60's, did constitute outstanding breakthroughs into an area particularly treasured as a local right and responsibility namely: education.*

school facilities.[4] And in 1957 and 1958, the Office of
Education stepped up its production of data and reports,
most notably of publications related to higher education.[5]
A task force was appointed[6] in 1957 to study the "Report
of the President's Commission on Education Beyond the
High School," and afterwards to draft the administration's
official policy toward school aid measures. During the
completion of this process, the members of the Commission
exchanged ideas with the Senate and House Committees re-
sponsible for educational legislation at their end of the
Capitol;[7] this interplay materially affected the character
of the act that was finally signed into law, and was part
of the process leading toward greater federal involvement
in education.

Origin and Legislative Background of the National Defense Education Act

Sputnik undeniably was the symbolic lift-off vehicle for
the National Defense Education Act (NDEA), which carried
a profusion of subsequent bills in its wake. But the
history of sporadic federal legislation in the field of
education, the gradual extension of federal participation
in local activities in other fields, and the scientific
demands imposed on the nation by the cold war with its
constant impetus to encourage the burgeoning of technolo-
gies were all necessary conditions for concern over the
state of American education as well as the consequent
search for extraordinary innovative methods and resources
for change and improvement.

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[4]*Ibid.*, p. 59. Specific recommendations were: (1) con-
tinuation of low-cost loans for construction of dining
halls, dormitories, and the like; (2) making available
urban land freed by slum clearance programs for use by
public education agencies; (3) constituting a new program
of matching grants-in-aid for public and private college
classroom and laboratory construction; (4) suggesting that
the federal establishment pay fully and equally all costs
borne by institutions in connection with research done for
the federal government; and (5) revision of the tax laws
to reward donations to educational institutions.

[5]William Stanley Hoole, NDEA, *A Brief Chronology*, pp. 9, 27.

[6]Marion B. Folsom, Secretary of the Department of Health,
Education, and Welfare, appointed the task force, headed
by Commissioner of Education Lawrence G. Derthick.

[7]William Stanley Hoole, *op. cit.*, pp. 24-52.

In the 1950's, a number of prominent as well as lesser-known Americans put forth their nostrums for education's maladies. They were joined by several committees and panels established to diagnose and prescribe for the field's specialized ills. These groups, public and private, influenced and interacted with the White House, the Congress, and with people at the departmental level in the federal government, as well as with Office of Education personnel.[8] The National Education Association (NEA) led a phalanx of organizations seeking school aid legislation.[9]

President Eisenhower, influenced by James Conant's commentary about the deficiencies and needs in American education brought to public notice by the launch of Sputnik, proposed a stronger act than had ever before been contemplated by concerned administration officials.

Some Congressmen also saw in Sputnik an opportunity to accomplish the educational changes they had long sought. Senator Lister Hill, the seasoned proponent of health and education legislation, seized upon the "science gap" and its implications for national defense to carry the Congressional vote on education reform. His perceptions were shared by Representative Carl Elliott, and the two Alabamans set to work, with the help of able legislative drafting on the part of members of the Senate Subcommittee on Education.[10]

Shortly after the administration's "Education Development Act of 1958" was introduced, Senator Hill and Representative Elliott presented the "National Defense Education Act" to Congress.[11] The administration's bill contained no section dealing with educational media; that of Messrs. Hill and

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[8]Wilson, *op. cit.*, pp. 10-31.

[9]*Ibid.*, pp. 160-161. The impressive roster of organizations included the National Congress of Parents and Teachers, many labor unions, the National Council of Churches, the National Association for the Advancement of Colored People, the American Jewish Congress, and Protestants and Other Americans United for Separation of Church and State. Arrayed in opposition were the U. S. Chamber of Commerce, the National Association of Manufacturers, the American Medical Association, the Farm Bureau, the American Legion, and several others.

[10]Wilson, pp. 29-31.

[11]S 3187 and HR 10381.

Elliott did--specifically, it contained <u>Title X - Research</u>
<u>and Experimentation in More Effective Utilization of Tele-</u>
<u>vision, Radio, Motion Picture, and Related Media for Edu-</u>
<u>cational Purposes.</u> This title (which was to later become
Title VII) provided for the creation of an institute in
the U. S. Office of Education for research and experimen-
tation to develop and evaluate projects involving radio,
television, motion pictures, and other auditory and visual
aids of potential value to state and local educational
agencies and to institutions of higher education. It
assigned the Commissioner of Education (in cooperation
with the Advisory Council on New Educational Media) to
conduct educational research or to implement it through
the Institute by contracts with grants to public or non-
profit agencies. It recommended that motion pictures,
kinescopes, educational or school television station
equipment or TV cameras, videotapes, radio and TV scripts,
etc., should be acquired and made available upon request
to state and local educational agencies. For these pro-
grams the expenditure of $5 million was proposed for the
first year and $10 million for each of the succeeding five
years.

Title X of the bill was primarily the work of a diligent
legislative analyst, Frederick R. Blackwell, of the Senate
Labor and Welfare Committee's Subcommittee on Education,
with considerable substantive data and ideas provided by
C. R. Carpenter of Pennsylvania State University. Through
lengthy discussions with researchers and media and school
practitioners, and through visits to locations using in-
structional media, Blackwell drafted what was to become,
with minor revisions by the Senate-House Committee of
Conference, the Title VII provision of NDEA.[12]

Thus, under Title X (eventually to be Title VII), science
and technology were envisioned as a means to, as well as
an end of, instruction. The use of media (available
communications technology) was apparently acceptable as
an ingredient of the total effort; it evoked comparatively
little specific floor debate from the legislators them-
selves, or from those who testified before Congressional
committees.

[12]Information leading to this account was assembled from the
Congressional Record, committee reports, and interviews with
legislative staff and other persons involved with the develop-
ment of the legislation. Although popular myth suggests that
certain members of the audiovisual industry drafted what became
the <u>final</u> House version of the section, it was difficult to ob-
tain any factual evidence of this in legislative documents or
in interviews with legislative staff.

Debate and Testimony

Much of the debate on the total NDEA centered around the
perceived merits or dangers of federal aid to education,
but the national emergency issue finally took precedence
over fear of federal government control.   In addition,
questions of scholarships and loans, counseling, education
in foreign languages and area studies, technical and voca-
tional education, upgrading teachers' salaries, and the
need for school buildings were debated, often from the
perspective of persistent national issues--conspicuously as
regarded civil rights and aid to private and parochial schools.[13]

The educational media title brought industry into the legis-
lative scene as a new and increasingly influential component
of the education lobby.   Perhaps the most important, and
certainly the lengthiest, testimony to both House and Senate
Committees was given by Maurice B. Mitchell, president of
Encyclopedia Britannica Films, Inc.   Within a few moments of
taking the stand, Mitchell showed a three-quarters of a minute
long film demonstrating what happens to a bird when it flies.
More than a dozen of these brief amendments to the title,
such as including AV materials and equipment in other sec-
tions of the bill as well as in the Title VII section dealing
with "school demonstrations of media use"; he also supported
the concept of research and experimentation in Title VII.
Conspicuous by its absence from his testimony was any mention
of organizing an Institute to study media.[14]

Mitchell's testimony is singled out for his demonstrative
use of the media, but he was only one of many other represen-
tatives of education, industry, foundations, and professional
associations who spoke in support of the "media title".
Typical of these others was C. R. Carpenter[15] who lamented
that "capabilities of the mass mediums of communication
have been largely developed and applied in the United States

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[13]*Legislative History*, PL 88-864 (HR 13247).

[14]*Hearings*, U. S. Congress, House 85th Congress, First
Session, 1958.   Subcommittee on Education and Labor.
January 8, 1958 through April 3, 1958, p. 1714; see also:
Hearings, U. S. Senate, 85th Congress, First Session,
1958.   Committee on Labor and Public Welfare, p. 1278.

[15]Professor and head of the Department of Psychology as well
as Director of the Division of Academic Research and Sciences
at Pennsylvania State University.

for purposes other than education, [and noted] that their
full employment can effectively solve some, but not all,
of the problems of our numerous and complex educational
systems."[16] Two members of the "American Scientific
Establishment,"[17] Detlev Bronk and Edward Teller, also
spoke in support of communications media in their testi-
mony; this is noteworthy insofar as the scientific community
exerted considerable influence in Congress at that time.

NDEA Activities at USOE

Despite the welter of bills introduced into Congress during
January-June 1958, it soon became obvious that the chief
contenders were those being sponsored by the Administration
and Messrs. Hill and Elliott. Realizing that some sort of
compromise was inevitable, in late February, HEW Assistant
Secretary Richardson addressed a memorandum to his colleagues
on the subject of "major points of compromise with the Hill-
Elliott bill," seeking their "suggestions for revisions."
This tentative document revealed the close kinship of the
two pieces of legislation and the apparent willingness of
the Administration to "go along" with reasonable "modification
or supplementation of S 3163.[18]

On May 6th, in a memo describing the principal issues raised
between the Elliott and the Administration bills, the USOE
Director of Laws and Legislative Branch characterized Title
VII as "seriously questionable." Another memo dated May 16
indicated that the final fate of the media section had still
not been determined when the two bills were merged in the
House. On May 23, the compromise bill was reported out in
the House with $8 million allotted for research in audiovisual
educational media.[19]

The NDEA bills were submitted to a joint House-Senate committee.
On August 21, 1958, the Conference Report indicated the reso-
lution of the differences in the House and Senate versions.
The revised version clearly established the Advisory Committee
(a Senate recommendation) and limited the conduct of the pro-
gram to grants or contracts. The Commissioner of Education

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[16]*Hearings*, U. S. Senate, 1958, *op. cit.*, pp. 1288-96.

[17]Term suggested by D. S. Greeneburg, *The Politics of Pure
Science*, p. 3.

[18]Holle, *op. cit.*, p. 122.

[19]*Ibid.*, pp. 123-155.

was deterred from carrying out any research or experimentation directly in the Office of Education. The last vestige of an OE based Institute was laid to rest.

When Senator Hill and Congressman Elliott introduced identical bills in their respective Houses, they had called for $5 million to be spent on the media title for the first year and $10 million for each of five successive years, for a total of $55 million.

The House scaled this down to a flat $2 million for four years, for a total of $8 million. The Joint Committee report recommended $3 million for the first year and $5 million for each of the next three years, or a total of $18 million.[20]

The Senate passed the NDEA by a vote of 66 yeas, 15 nays, 15 not voting; in the House the vote was 212 yeas, 85 nays, 313 not voting.[21] The National Defense Education Act of 1958 was signed into law by the President on September 7, 1958. Media had become a member of the education family vital to the national defense.

Legislative History of NDEA, Title VII, Following Its Enactment

By 1961, the act which provided a heretofore unheard of level of federal financial support for education was slightly over two years old, and ready for Congressional renewal. Experience had been gained in media research and dissemination; Title VII of the NDEA received considerable support from the educational community and the audiovisual industry. Industry had recognized a vast new market, the classroom, and begun its career as an important segment of the Congressional education lobby.

The Report of the Task Force Committee on Education was received by President-elect Kennedy on January 6, 1961. The Task Force Committee proposed NDEA extension for five years, and suggested that a new phase of assistance be initiated through federal support to the states for construction of ETV networks.[22]

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[20]House of Representatives, Report No. 2688, August 21, 1958, pp. 32-33.

[21]*Congressional Record - House*, August 22, 1958, p. 17916, and *Congressional Record - Senate*, August 22, 1958, p. 17586.

[22]*New York Times*, January 7, 1961 (Task Force Committee appointed by Secretary of Hew, Arthur Flemming).

Speaking to a joint session of Congress, President Kennedy ex-
pressed the urgencies of the early sixties. He noted that Am-
erican classrooms had an overflow of two-million children,
taught by 90,000 teachers who were "not properly qualified,"
that one-third of the secondary school students qualified for
college could not enter and that "we lack the scientists, the
engineers, and the teachers our world obligations require."[23]

Support for extension and revision of Title VII was more
conspicuous in committee hearings than in 1958. The Division
of AudioVisual Instruction (DAVI) of the National Education
Association (NEA) proposed providing grants to state de-
partments of education for programs at local and regional
levels to disseminate information about new educational media
through demonstrations, workshops and consultation, and also
establishing institutes for school media specialists and other
supervisory personnel. DAVI proposed the extension of NDEA for
another five years. This amendment was widely supported by
industry, education, and the Office of Education.[24]

The National AudioVisual Association (NAVA) testified in
favor of including teaching machines, test grading machines,
and other AV aids under Title III, and urged that Title VII
be extended to the local school level.[25]

Consultants to the Secretary of HEW and the U. S. Commissioner
of Education also submitted testimony during the hearings.
In their majority report, they recommended that the rate of
authorization for Title VII be increased by $5 million to
provide more support for demonstrations and related activi-
ties, and that the Federal Communications Commission be
requested to continue to reserve television channels currently
used for noncommercial broadcasting until further evidence

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   House of Representatives Document #73. 87th Congress,
First Session, January 30, 1961. "The State of the Union"
(Kennedy recommended NDEA extension for only one year).

24*Hearings,* 87th Congress, First Session, U. S. Senate,
Committee on Labor & Public Welfare. (N.1. throughout.)
See especially: Don White, National AudioVisual Associa-
tion, pp. 141-4; Wilbur Edwards, Encyclopedia Britannica,
pp. 443-6; John Cuddington, Office of Education, p. 147.
See also *Hearings,* 87th Congress, First Session, U. S.
Congress, House of Representatives, Committee on Education
and Labor, parts 1 and 2.

25*Ibid.,* Senate, pp. 141-144.

was available as to the educational effectiveness of the medium.[26]

The 1961 hearings saw the beginning of attempts to include provisions for printed and published materials within Title VII.[27] Edward Booher, President of the McGraw-Hill Book Company, proposed that textbooks, reference works and maps be added. Encyclopedia Britannica opposed this, as did Sterling McMurrin, Commissioner of Education, who felt that "the vital thrust and purpose of the program would be dulled." McMurrin suggested that Title VII "might conceivably be discontinued" in the future if all important knowledge about employing the new media in education were considered to be available.[28]

The National Library Association, supported by NAVA, requested provision of funds for school libraries, including AV materials.[29] Both the National Council of Teachers of English[30] and the Modern Language Association[31] tied language learning to use of electronic and AV aids, including teaching machines, tape recordings, and ETV.

The Senate Committee on Labor and Public Welfare, in its Report, called Title VII a "frontier" undertaking, and noted that "a promising start has been made, but more time and

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[26]*Ibid.*, pp. 559-561.

[27]*Ibid.*, pp. 361 and 746. Eight years later, McMurrin became the chairman of the Commission on Instructional Technology, which, partially under Title VII funds, would explore the role of technology in education.

[28]*Hearings,* 87th Congress, First Session, U. S. Congress, House of Representatives, 1961. Committee on Education and Labor, parts 1 and 2, p. 126.

[29]*Operation of the NDEA and Proposals for Its Extension* 87th Congress, First Session, 1961, p. 87 ff. See also p. 93 ff for digest of NDEA studies and reports regarding Title VII.

[30]87th Congress, First Session. U. S. Senate. N.l., *op. cit.*, p. 370.

[31]*Ibid.*, p. 285.

funds are needed to bring this effort to fruition."[32]
NDEA, with Title VII unchanged, was renewed for two
years.[33]

The educational use of television was promoted also by
the Senate Committee on Interstate and Foreign Commerce
in the 87th Congress. The ETV Facilities Act amended the
Communications Act of 1934 to establish a program of federal
matching grants for the construction of television broad-
casting facilities to be used for educational purposes.
The House Committee on Rules delayed its passage; President
Kennedy supported it.[34]

President Kennedy's message to Congress in 1963 proposing a
draft bill to "strengthen and improve educational quality
and educational opportunities in the nation" was extraordi-
narily comprehensive. By 1963, the impetus for educational
reform previously provided by Sputnik had been replaced by
the impetus of the war baby population boom and fear of short-
falls in quantity and quality of educational opportunity.[35]
Eventually, two separate laws contained many of the Presidential
proposals: PL 88-204, the "Higher Education Facilities Act,"[36]
and PL 88-210, the "Vocational Education Act"--the latter
encompassing, as Part B, the extension of the NDEA.

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[32]*Senate Report No. 652.* 87th Congress, First Session,
1961, p. 34. In the Senate, S 2393 became PL 87-344 by
yeas: 80, nays: 7; the vote in the House was yeas 342,
nays 18.

[33]*Legislative History*, PL 87-344 (S 2393), 1961.

[34]*Legislative History*, ETV Facilities Act (Pl 87-447)
(S 205) 87th Congress, Second Session, 1961.

[35]*Hearings Before the Subcommittee on Education and
Welfare of the Committee on Labor and Public Welfare*,
United States Congress. Senate, 88th Congress. First
Session, 1963 p. 213. Testifying, Anthony J. Celebrezze,
Secretary of Health, Education and Welfare, expressed the
national mood: "It took a Russian Sputnik in 1957 to jolt
the country out of its tranquillized state" of complacency
about the educational system in the United States.
Celebrezze spoke about shortages of qualified teachers,
intensified by pressures of population growth, failure of
25 to 40 percent of able high school graduates to continue
to college, need for adult education, and special education
for the handicapped, as he urged federal support to stimulate
local action.

[36]A "bricks and mortar" bill.

Stressing the "need for change" in education, the Willis Committee and Commissioner of Education Francis Keppel[37] included a recommendation that "the production of instructional materials for vocational courses be recognized as vital to an effective national program," and that one or more properly equipped instructional materials laboratories be established under the Office of Education.[38] Although he claimed no personal experience with media usage, Keppel considered the whole area of new media as one of lively debate serving a useful purpose in stimulation of progress.[39]

NEA urged the extension and strengthening of Title VII. NAVA endorsed this, expressing concern that insufficient funds had been supporting the amendment to introduce institutes that would train teachers, librarians, educational media specialists and school administrators in the use of the new educational media.[40] The president of the American Textbook Publishers Institute gave testimony favoring inclusion of the textbook provision in Title VII.[41]

In conference, the Senate and House expressed substantial agreement with the Senate,[42] and in the final version of the bill, NDEA Title III was amended to include test-grading equipment and "specialized equipment for audiovisual libraries"; and NDEA Title VII was amended to include "printed and published materials" along with television, radio, and other teaching aids. NDEA was extended through June 30, 1965.[43]

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[37]Keppel, later, was to become very involved with the media and educational technology as the president of a major corporation dealing in this area.

[38] Hearings, 88th Congress, First and Second Sessions, 1963. U. S. Congress, House of Representatives, Vol. 3, pp. 107-108.

[39]Ibid., p. 17.

[40]Ibid., pp. 165-166.

[41]Ibid., p. 161.

[42]Enactments by the 88th Congress Concerning Education and Training, 1963-1964. Washington, D. C.: U. S. Government Printing Office, October 1964, pp. 71-73.

[43]Ibid., pp. 71-75.

In the second session of the 88th Congress, NDEA, including
Title VII, was amended and extended for another three years
on October 16, 1964.[44] The impact of Title VII, Section B,
was, however, diminished by the addition in NDEA of Title
XI, designed specifically to encourage institutes for teachers,
including school librarians, and educational media specialists.
Thus, the provision under Section B of Title VII for training
manpower for the media field was recognized as limited. More
training programs were required and Title XI was created to
fill this need.

Table 1 compares the increases in appropriations for Title
VII when compared to the overall increase for all programs
under NDEA. The level of support for Title VII was "ever-
changing" but essentially the same when compared with over-
all NDEA appropriations which continued to increase.

Table 1

APPROPRIATIONS

TITLE VII vs. TOTAL NDEA - (1959-1969)

	TITLE VII (A & B)	TOTAL NDEA
1959	$1,600,000	$115,300,000
1960	3,100,000	159,700,000
1961	4,730,000	187,480,000
1962	4,770,000	211,627,000
1963	5,000,000	229,450,000
1964	5,000,000	250,788,000
1965	4,963,000	348,603,000
1966	4,000,000	412,608,000
1967	4,400,000	446,357,000
1968	4,400,000	*Spread into ESEA, etc.*

Transformed into Cooperative
Research Act

Transmitting his education program to the first session of
the 89th Congress, President Johnson proposed "that we de-
clare a national goal of full educational opportunity."
He designated education, from pre-school through university,
as "the number-one business of the American people," and
proposed a series of specific actions to the Congress.[45]

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[44]*Legislative History, PL 88-665 (S 3060)*, 1964.

[45]*House of Representatives Document #45*, 89th Congress,
First Session, January 12, 1965.

The subsequent Elementary and Secondary Education Act
(ESEA) of 1965 (PL 89-10) and the Higher Education Act
(HEA) of 1965 (PL 89-329) embody most of the presidential
proposals. Together they brought innovation to all levels
of formal education, and changed the American pattern of
federal aid to education. ESEA moved toward the American
ideal of universally equal education by emphasizing special
programs for the "disadvantaged," and was the largest effort
to date toward federal involvement in elementary and
secondary education. HEA strengthened developing collegiate
institutions, introduced a national Teachers Corps, brought
the new media to the institutions of higher education, and
provided assistance to libraries.

On the day of the Presidential education message, admin-
istration bills were simultaneously introduced in the House
and Senate as "The Elementary and Secondary Education Act
of 1965."46

In hearings, Commissioner of Education, Francis Keppel,
mentioned the innovative accomplishments of Title VII
of NDEA as "increasingly a part of modern education";
he also stressed the bill's emphasis on strengthening state
departments of education (probably in anticipation of
objections).47

Title VII of NDEA and the ETV Facilities Act had generated a
constituency and a full-blown lobby for education by media.
These new special-interest groups turned out to testify in both
House and Senate. Testimony emphasized the usefulness of
media, especially TV, in inner city education, the importance
of training teachers for effective use of media, and of assuring
the availability of up-to-date materials. Representatives of
school systems already using ETV praised its usefulness as
an aid to the teacher for conveying information, facts, ideas,
and concepts. Title III—supplementary education centers and
services—was the media focus. Congressmen expressed their

46*Legislative History PL 89-10 (HR 2362)*, 1965. Representative
Carl Perkins of Kentucky introduced HR 2362, and S 370 was
introduced by Senator Wayne Morse of Oregon for himself and
35 other Senators. See also: *Enactments by the 89th Congress
Concerning Education and Training,* First Session, 1965.
Washington, D. C.: U. S. Government Printing Office, 1966,
pp. 6-9; *Hearings Before the Senate Committee on Labor and
Public Welfare,* 89th Congress, First Session, 1965, pp. 31 ff.

47*Hearings Before the General Subcommittee on Education of
the Committee on Education and Labor,* House of Representatives,
89th Congress, First Session, Vol. 1, p. 82.

appreciation to the educators, noting that inexperience with
what can happen in the classroom handicapped their judgment
on use of media.[48]

One week after introduction of the ESEA, the Higher
Education Act of 1965 (HEA) was introduced;[49] it comple-
mented the ESEA, in fulfillment of the Presidential re-
quests. Following hearings in both the House and Senate,
Representative Edith Greene introduced a new Higher Edu-
cation Act bill [HR 9567, on June 30].[50]

The extensive HEA testimony urged specific mention of TV,
videotape, film and other media within the various titles
of the bill, both for library and classroom, and for con-
tinuing education of adults. The need for training teachers
in the use of the new media was defined, with emphasis on
teaching teachers to innovate. Language laboratories were
identified as critical, as were campus media centers.[51]

A conference between the House and Senate Committees finalized
the Act, which was passed on October 20 in both Houses, and
signed by the President on November 8, 1965. The conference[52]
agreed to include Title VI, the Yarborough Amendment, from
the Senate version of the bill. The amendment was intended
to improve the quality of college instruction through the
use of audiovisual materials. Describing this addition,
the Senate report noted that children who had been in the
sixth grade in 1958, when the content and methods of their
instruction began to be radically changed by NDEA Title VII,

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[48]*Ibid.*, throughout. See also *Hearings Before the Senate
Subcommittee on Labor and Public Welfare*. 89th Congress,
First Session, Vols. 3 and 4, 1964.

[49]In the Senate as S 600 by Senator Morse, and in the House
as HR 3220 by Representative Powell.

[50]*Legislative History*, PL 89-329 (HR 9567).

[51]*Hearings Before the House Subcommittee on Education
of the Committee on Education and Labor*, House of Repre-
sentatives, 89th Congress, First Session, 1965, Vols. 2
and 3; and *Hearings Before the Subcommittee on Education
of the Committee on Labor and Public Welfare*, United States
Senate, 89th Congress, First Session, Vol. 4, 1965.

[52]*House of Representatives*, Rep. No. *1178*. 89th Congress,
First Session, October 19, 1965.

would have found "a regression in instruction, instructional media, and instructional techniques" without Title VI.[53] Title VI provided a continuation of technological supplements in education at the college level; it offered to higher education what Title III of the ESEA offered at the elementary and secondary levels. Part A of the amendment provided for equipment grants, and Part B for faculty development programs. Title III of HEA included sharing of radio stations and computer facilities among developing institutions.

By 1965 more extensive and all-encompassing pieces of legislation took their place alongside the NDEA of 1958. With much higher levels of funding, they would require a massive reorganization of the administrative agency. Title VII, both by commission and omission, aided in the birth of programs in the field of educational technology; but in the 1965 reorganization of the U. S. Office of Education, it lost its specific identity and became merged with other programs, perhaps at a time when it could have begun to disseminate directly the fruits of the first five years of effort. Table 2 shows the growth and development of related programs between 1958 and 1968.

In 1966, the question of "books vs. bullets" became the critical issue for educators, who had become accustomed to and begun to rely upon a regular supply of federal funds, in particular for innovative projects and for programs to assist the poor and the disadvantaged. The educators' lobby rallied to Senate and House Committees to testify against cutbacks in federal funding during hearings on extension of ESEA and HEA.

Discussing the bills (HR 13160 and HR 13161) to extend ESEA another four years with the General Subcommittee on Education of the House, HEW Secretary John W. Gardner spoke of the supplementary education centers and services as promising "to do more to bring innovation and quality to dark corners of American education than any other legislative invention of our time."[54]

53
  Senate Report #673, 89th Congress, First Session, September 1, 1965, pp.56-57.

54
  Hearings Before the General Subcommittee on Education of the Committee on Education and Labor, House of Representatives, 89th Congress, Second Session, Vols. 3 and 4, 1966, p. 30.

TABLE 2.

MAJOR LEGISLATION FOR SUPPORT OF NEW MEDIA AND TECHNOLOGY

(includes legislation affecting or directly relevant to Title VII, NDEA)

TITLE	DATE SIGNED	LAW NO. (BILL NO.)	INTRODUCED BY	EFFECT ON MEDIA	DIRECT EFFECT ON TITLE VII
National Defense Education Act	Sept 7 58	PL 88-864 (HR 13247)	Hill Elliott	III-strengthening math, science, language instruction	Established Title VII
NDEA Amendments 1961	Oct 3 61	PL 87-344 (S 2393)	Hill Elliott		2-year NDEA extension
ETV Facilities Act	May 1 62	87-447 (S 205)	Magnuson (Committee Interstate & Foreign Commerce	ETV construction; matching grants with states	--
Vocational Education Act of 1963 (NDEA Amendments)	Dec 18 63	88-210 (HR 4955)	Perkins	III-includes test grading and av library equipment	1-year NDEA extension VII: to include "printed and published materials"
NDEA Amendments of 1964	Oct 16 64	88-665 (S 3060)	Morse	Title XI-institutes for teachers; includes "educational media specialists" + school librarians, English & social science	3-year NDEA extension
Elementary &Secondary Education Act	Apr 11 65	89-10 (HR 2362)	Morse Perkins	Titles I, II, III, IV Amends Cooperative Research Act	--
Higher Education Act of 1965	Nov 8 65	89-329	Morse Powell Green	Title VI: A. equipment:AV + TV B. faculty dev. - institutes	--
Elementary &Secondary Education Amendments 1966	Nov 3 66	89-750 (HR 13161	Perkins Morse	ESEA VII: "Dissemination of information by Commissioner to State, local, educational agencies + others Amends Coop Research Act research through contracts as well as grants and consolidates research authority. new Title VI: education of the handicapped Title III: Adult Education Act of 1966 (grants to ... ETV stations, use of innovative: methods, system materials ..	--
Higher Education Amendments of 1966 (NDEA Amendments)	Nov 3 66	89-752 (HR 14644)	Green	NDEA III: includes industrial arts	VII through FY 68
Educational Professions Development Act	June 29 67	PL 90-35	Perkins	Higher Education Act Amendment: V-c: educational media "including educational + instructional tv and radio"	--
Public Broadcast Act of 1967	Nov 7 67	PL 90-129	Magnuson (Commerce + Communications)	ETV construction Corporation for Public Broadcasting	--
Elementary &Secondary Education Amendments 1967	Jan 2 68	PL 90-247	Brademas Morse	ESEA VI: Education of Handicapped Act: research, production, distribution educational media ESEA III: emphasis on innovative Amends Cooperative Research Act	NDEA VII; no change from appropriations through June 30 1968
Higher Education Amendments of 1968	Oct 16 68	90-575 (S 3769)		Title VIII (new): Networks for Knowledge Higher Education Act VI: Instructional computers eligible; new section 1206 "Dissemination of Information by Commissioner"	NDEA VII: permitted to expire (also VB + XI)

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An Office of Education representative noted that 19 of the
34 approved state plans provided for up to 25 percent of
Title II allotments on films, tapes, and other instructional
materials.[55] In its written reply to the questions of Senator
Morse, the Office of Education explained its dissemination
of research findings under the legislative authority of the
ESEA of 1965, and stressed two programs that had their origins
in Title VII projects:

1. The National Program of Educational Laboratories,[56]
    regionally based, and providing links between edu-
    cational research and the classroom implementation
    of programs based on that research, and

2. The Educational Resources Information Center (ERIC),
    designed to acquire, abstract, index, store, retrieve,
    and disseminate on a nationwide basis "the most im-
    portant and significant educational research and
    innovative educational ideas to educators through-
    out the nation."[57]

Commissioner of Education Harold Howe presented his fiscal
information using visual aids. He pointed to the effec-
tiveness of programmed instructional materials developed
under Title VII, and mentioned research at Harvard directed
toward understanding the effect of psychological, social,
cultural, ethnic, and other differences on the learning
process.[58]

Witnesses calculated the cost per child for instructional
materials as approximately $6.00, and deplored the effect
of increasing costs of books and materials as diluting the
effectiveness of government assistance. The importance of
keeping library and media materials up-to-date was stressed,

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[55]*Ibid.*, p. 165.

[56]The blueprint for these had come out of a Title VII-B
project. The labs were provided by the Cooperative Research
Act amendments of Title IV of ESEA.

[57]*Hearings Before the Subcommittee on Education of the
Committee on Labor and Public Welfare,* United States
Senate, 89th Congress, Second Session, Vols. 3, 4 and 5,
1966, pp. 285-286.

[58]*Ibid.*, p. 650.

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and a new plateau of considering media usage as a process, a technology, or a new methodology was attributed to Congressional support.[59]

The Higher Education Amendments of 1966, including NDEA amendments, became PL 89-752 in November 1966. Title VII remained unchanged.

In his message on Education and Health in America,[60] President Johnson told the 90th Congress, "Noncommercial TV can bring its audience the excitement of excellence in every field," and recommended that the Congress enact the Public TV Act of 1967 to triple the current appropriation and to create a Corporation for Public TV, to support non-commercial TV and radio. He also recommended legislation to authorize a major study of instructional TV. The President directed that the NSF, working with the Office of Education, establish an experimental program "for developing the potential of computers in education."[61]

The Higher Education Act, the ESEA, and the ETV Facilities Act came up for amendment in 1967. Cutbacks in funding again disturbed the legislators and witnesses.

The ETV Facilities Act became the Public Broadcasting Act of 1967, through the Committee for Commerce and Communications.[62]

While testifying on the amendments to the ESEA, Commissioner of Education Harold Howe noted the work of the 11 Research and Development Centers, of the 20 Educational Laboratories (ESEA Title IV), and of their companion project for dissemination of findings--ERIC. He praised the use of new educational media and also noted the more than 40 two-to three-day workshops and three six-week institutes to provide teacher training in the most advantageous use of a multi-media approach. He ex-plained NDEA Title VII and noted that, of the approximately 375 projects supported under Part A, 215 were completed and of the 253 supported under Part B, 195 were completed. The Office of Education did not request extension of the auth-orization for Title VII, but Howe said, "its activities may

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[59] *Hearings*, Senate and House, 1966, *op. cit.*, throughout.

[60] February 28, 1967.

[61] *Hearings Before the General Subcommittee on Education of the Committee on Education and Labor*, House of Repre-sentatives, 90th Congress, First Session, 1967, p. 25.

[62] *Legislative History*, PL 90-129.

be funded under the authorization for the Cooperative Research Program.[63]   The Office of Education made special note of its inclusion of all handicapped persons within media programs.[64]

DAVI failed to mention NDEA Title VII in its written testimony, but supported "in full" the extension of ESEA Title III for five years and discouraged the subsumption of Title III into ESEA Title V on the grounds that "the educational media field, a wide range of educational innovations, and the schools themselves [would] suffer as a consequence."   Its representative urged that programs for the preparation of media specialists under Title XI of NDEA not be decreased.   He quoted Congressman John Brademas:

> *We vote money for these vast programs on the blithe assumption that the highly trained professional and scientific personnel required to perform this research will drop out of the skies.*[65]

Senator Morse, in a statement prepared for the Senate Committee on Appropriations, urged that the full $5 million be requested for NDEA Title VII, protesting the 12 percent cut and suggesting that the $600,000 be spent on training of teachers in the use of the new media.   He distinguished between this proposal and the Title XI NDEA authorization providing for institutes for educational media specialists: "Classroom teachers...could be better prepared skillfully to use the media in their subject matter courses."[66]

Senator Morse referred to "those who teach our teachers" in justifying his request for continued support of HEA Title VI, and its indirect effect on primary and secondary education.[67]   He also suggested that the Bureau of the Budget's failure to support Title VII of NDEA was an

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[63] *Hearings,* House, 1967, *op. cit.*

[64] *Ibid.,* p. 67.

[65] *Ibid.,* p. 196, Vol. 4.   Ronald Uhl testifying for DAVI.

[66] *Hearings Before the Subcommittee on Education of the Committee on Labor and Public Welfare,* U. S. Senate, 90th Congress, First Session, 1967, Part 3, pp. 1274-1296.

[67] *Ibid.,* p. 1286.

"oversight"--a 1966 amendment had provided a modest $2 million program for disseminating information in the field of education.[68]

Title VII, still defended by congressmen, was beginning to lose its lobby, by those who saw larger provision of assistance for media development in ESEA and HEA, and who realistically observed that the administration would no longer give full support to Title VII.

The 1968 Amendments to the Higher Education Act of 1965 included a new Title VIII--"Networks for Knowledge." Title VIII was intended to "encourage colleges and universities to share, to an optimal extent, through cooperative arrangements, their technology and other educational and administrative facilities and resources...."[69]

Projects to be supported included:

1. The joint use of facilities such as classrooms, libraries, or labs, including books, materials and equipment; also providing access to specialized library collections through the preparation of suitable media for electronic or other taped transmission of materials;

2. The establishment and joint operation of closed-circuit TV or equivalent transmission facilities;

3. The establishment and joint operation of electronic computer networks and programs to be made available for such purposes as financial and student records, student course work, or transmission of library materials.[70]

Commissioner Howe referred to the nearly 1,300 consortia existing between institutions of higher learning, and explained that the new Title VIII of HEA was designed to encourage such resource-sharing.[71]

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[68]*Ibid.*, p. 1295

[69]*Enactments of the 90th Congress Concerning Education and Training,* Second Session, 1968, pp. 114-115.

[70]*Ibid.*

[71]*Hearings of the Subcommittee on Education of the Committee on Labor and Public Welfare,* U. S. Senate, 90th Congress, Second Session, Vol. 1, 1968, p. 838.

DAVI suggested "subjective quality standards" be applied
in evaluating proposals under Title VI-A of HEA and noted
that within Title VII of NDEA, Part A had been "successfully
absorbed" under the Cooperative Research Act. Part B of
Title VII providing for dissemination of the new media and
its research, had not been continued,

> nor, in our judgment will it be adequately handled
> through ERIC. It is our opinion that Part B of this
> section has never been administered in ways that have
> effectively reflected the intent of the Congress.
> Although the ERIC centers will indeed make pertinent
> educational research more readily available to the
> educational community, such research is not reported
> in a form which can be readily interpreted and applied
> by busy school administrators.[72]

The DAVI representative urged revitalization of Title VII-B
through the Educational Professions Development Act or other
appropriate means, to benefit regional Research and Develop-
ment Centers, and, most importantly, school people themselves.

The Institute Program of Title VI-B of the Higher Education
Act of 1965, was observed as doing "Much to revitalize and
expand the interest and leadership of higher institutions
in teaching and learning methods and materials," and holding
potential for "continued broadening and strengthening" of
education from primary through adult levels."[73]

Commissioner Howe explained the Networks for Knowledge and
suggested that it had originated when he and Secretary
Gardner agreed two years previously that the developing
networks "seemed to neglect the professor in his classroom."[74]

The National Association of Educational Broadcasters (NAEB)
expressed enthusiasm for the concept of Networks for Educa-
tion and they noted that the "central theses of NAEB's edu-
cational communications concept [is] that electronic com-
munications systems designed for institutional cooperation

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[72]Ibid. Charles Shuller testifying, pp. 849-60.

[73]Ibid.

[74]Hearings Before the Special Subcommittee on Education
of the Committee on Education and Labor, House of Repre-
sentatives, 90th Congress, Second Session, 1968, p. 122.

reach optimum efficiency if they are multiple-purpose
facilities rather than separate, unrelated technical
arrangements."[75]

NAEB saw the Networks for Knowledge in context with the
Public Broadcasting Act of 1967 and its Corporation for
Public Broadcasting which had provided the prerequisites
for Networks, and suggested that copyright laws be revised
to facilitate the exchange of materials within the Networks.
(Again, portions of the NAEB efforts were supported by Title
VII grants.)

Another witness noted that, among the lessons learned from
federally-supported educational media programs, "such as
NDEA VII, ... is [the fact] that software is far more im-
portant and should have higher priority than hardware."[76]

The Senate Committee on Labor and Public Welfare recommended
extension of NDEA Title VII for four years, through fiscal
year 1972, with $5 million appropriated for each of the years.
The Conference Report, however, included major changes af-
fecting the use of educational technology:

1.   The Higher Education Act of 1965 was amended by
      a new Section 1206 entitled "Dissemination of
      Information." This empowered the Commissioner
      to prepare and disseminate reports on programs
      and research and experimentation conducted under
      NDEA, the Higher Education Facilities Act, and
      other acts.

2.   Titles VII, V-B and XI of NDEA were among those
      titles permitted to expire.

3.   Activities of Part B of Title VI of the Higher
      Education Act were moved to EPDA. Instructional
      computers became eligible under Title VI. The
      Commissioner of Education was required to consult
      with NSF about policy governing purchase of equip-
      ment for education in the natural and physical
      sciences.[77]

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[75]*Ibid.* Studies of information networks were undertaken in
Oregon, Texas, Minnesota, Indiana, Iowa, Illinois, Missouri,
and New York; p. 833. James Fellows testified for NAEB.

[76]*Ibid.* John Meaney, Notre Dame University, p. 859.

[77]Higher Education Amendments of 1968. Conference Report.
House of Representatives Report #1919, 90th Congress,
Second Session, September 25, 1968.

A germinal program of modest proportions, NDEA Title VII had had its day.

Conclusions

Title VII of the National Defense Education Act served as an innovative instrument, whose thrust was carried on through other, larger, educational legislation. Before Title VII, educational use of the new technological means of instruction was an obscure concept: Limited experience in this field before 1958 produced a small supply of testimony to its effectiveness. However, the traditional classroom with its traditional teacher using traditional texts--one of the most favored American symbols--was an image that resisted change.

For the Congressmen themselves, most of whom came from professions other than education, the classroom was familiar only by memory; one may judge that the sparsity of questioning and debate over Title VII in its early years was due in some part to the lack of knowledge sufficient to provoke inquiry in depth.

Industry played a two-sided role in Title VII. On the one hand, seeing the classroom as a new and vast market, representatives of business lobbied educators and congressmen with their attractive new wares; Title VII might have faded more quickly without their efforts to develop it. On the other hand, they were businessmen and their primary concern was not to integrate technology into the classroom toward the full intellectual development of students; they, therefore, often concentrated on selling isolated pieces of technology, rather than on revolutionizing education through the use of the new media. The shortage of software, for example, may be blamed upon problems of copyright, but without an adequate choice of appropriate films, slides, etc., provided by the industry, no revolution in education was possible. In other words--the shortage was *not* due to copyright problems but was simply an industry shortage. There were not enough validated instructional sequences to place in the machines.

Educators themselves were attracted by, but unfamiliar with, the new media. Presumably the war baby boom and the logistical problems brought on by overcrowded classrooms and new school construction kept educators overloaded with the burdens of sheer maintenance. But educators, and schools of education retained many of the American symbolic concepts of education; innovation via TV in the classroom was not a serious option for many in the early days.

The concept of educational use of media was slow to take hold in the Office of Education as well. Able but inexperienced personnel were assembled to pilot the program, and commitment to it did not prevail throughout the office. Thus OE may be said to have assumed a functionary, rather than a leadership, role in the life of Title VII.

Despite these handicaps, Title VII may be judged to be a success. Convinced innovators in Congressional education committees, in industry, and among educators, kept it alive and moved its influences into broader educational legislation.

The turning point for the media came in 1965, with the Elementary and Secondary Education Act, and the Higher Education Act. Their various titles in turn provided for media use throughout the years of formal education, and for the first time a large lobby testified in Congress. Although the size and scope of the acts were such as to begin to overwhelm and diffuse any specific impact of Title VII projects, it is obvious that without the existence of Title VII, the support and experience with media would have been lacking. The education lobby would not have concentrated on the new technology as much as it in fact did.

By the mid-1960's, the skeletal ideas provided under NDEA Title VII, parts A and B, were being translated into more ambitious programs, and modified to provide greater fiscal support for purchasing the new media and technology. The new legislation increased monies for training and established new vehicles to conduct research and dissemination.

Congressional testimony in 1968 provides a striking contrast to 1958, both in scope and level of commitment to educational technology and in a funding level encompassed by all the acts that perhaps even the original architect of Title VII could not have predicted. (Table 3 reflects the approximate levels of appropriations for media during the life of Title VII.)

Title VII served as a forerunner of more extensive ideas and programs. These led to its absorption in a much larger administrative structure within USOE, and eventually to its demise, with the emergence of other programs with larger budgets and greater support. (See Table 4.) It lost its specific identity just when it might have begun to disseminate directly the fruits of the first five years of effort.

TABLE 3

ESTIMATED OBLIGATIONS FOR INSTRUCTIONAL (audiovisual) MATERIALS [developed from U.S.O.E. Reports]

FISCAL YEAR	1959-1962	1963	1964	1965	1966	1967	1968	1969	1970*
NDEA III	$		$ 6,514,800	$ 5,993,900	$5-6,000,000	$ 9,000,000	$ 10,444,780	$ 10,000,000	0
NDEA I					30,000,000				0
NDEA II					12,000,000				0
ETV FACILITIES		6,440,000	6,440,000	6,440,000	6,440,000	6,440,000	0	4,000,000	4,000,000
CAPTIONED FILMS FOR DEAF		?	645,000	645,000	1,703,000	1,110,230	1,037,289	1,920,000	2,220,000
VOCATIONAL EDUCATION			5,000	17,100	42,000	80,000	100,000	150,000	165,000
PUBLIC LIBRARIES - COMMUNITY SERVICE			6,000	43,900	110,000	922,000	1,000,000 +21,000 Adult Ed	1,000,000 +25,000 Adult Ed	490,000 +25,000 Adult Ed
HIGHER EDUCATION I					6,000	6,060	6,060	6,000	6,000
HIGHER EDUCATION II					160,000	6,126,672	6,369,219	6,730,000	3,365,000
HIGHER EDUCATION VI					700,000	4,000,000	5,190,159	6,600,000	0
ESEA I					30,000,000	15,000,000	24,500,000	22,000,000	22,000,000
ESEA II					12,000,000	21,400,000	23,000,000	14,000,000	0
ESEA III					5,000,000	7,000,000	8,000,000	8,500,000	6,030,000
TEACHER EDUCATION					82,000	82,000	82,000	83,500	88,000
HANDICAPPED R. & D					21,935	42,510	21,935	19,680	18,724

NO SEPARATE BREAKDOWNS AVAILABLE, AVERAGE ANNUAL EXPENDITURE 50 MILLION (under 1959-1962)

* Revised Nixon Estimates

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TABLE 4
CHRONOLOGY OF LEGISLATION AFFECTING EDUCATIONAL USE OF THE MEDIA

(includes major and minor legislation - 1958 - 68)

1958	PL 85-864	National Defense Education Act-Title VII
1961	PL 87-344	NDEA Amendments
1962	PL 87-447	ETV Facilities Act
	PL 87-715	Educational and Training Films for the Deaf
	PL 87-786	Donations to Educational Radio and TV
1963	PL 88-204	Higher Education Facilities Act
	PL 88-210	Vocational Education Act of 1963 (and NDEA Amendments)
1964	PL 88-665	NDEA Amendments, 1964
1965	PL 89-10	Elementary and Secondary Education Act
	PL 89-329	Higher Education Act of 1965
	PL 89-258	Loan Service of Captioned Films and Other Educational Media for the Deaf
1966	PL 89-750	ESEA Amendments of 1966
	PL 89-752	Higher Education Amendments of 1966
	PL 89-634	Agreement for Facilitating International Circulation of Visual and Auditory Materials
	PL 89-651	Facilitates International Flow of Educational ... Materials
1967	PL 90-35	Educational Professions Development Act
	PL 90-129	Public Broadcasting Act of 1967
	PL 90-247	ESEA Amendments of 1967
1968	PL 90-575	Higher Education Amendments of 1968 (Networks for Knowledge Act of 1968)

1969	passed House April 27	ESEA Amendments 1969
	S 1189	Educational Technology Act (Yarborough) (no hearings as of November 5, 1969)

FACTS ABOUT THE EXPENDITURE OF MONIES:

ONE PROFILE OF THE ACT

The $40.3 million expended under Title VII was divided almost
evenly between Part A (research) and Part B (dissemination).
The ratio was approximately 48 percent to 52 percent in favor
of Part B (see Figure 1). Certain large dissemination grants
were made toward the end of Title VII which affected the final
ratio (for example, over $1 million went to the instructional
television libraries, and $1 million to help develop the
children's television program "Sesame Street," a project de-
signed to provide preschool instruction primarily to culturally
disadvantaged youngsters). From 1958 through 1962, the major
expenditures were on Part A. When the research results began
to be reported in 1963, the weight of spending shifted to
Part B since there was now more knowledge, techniques, etc.,
to disseminate (see Figure 1).

The amount of money provided for Title VII bought more than
600 projects that were funded through grants and contracts.
It is necessary to state the number approximately because
the records were not in every case complete, and sometimes
it was uncertain whether a recorded grant was for continuation
of a project or for a new project.

As the next chart illustrates (Figure 2), about half of the
projects were field or laboratory research efforts (surveys,
experiments, field tests, and case studies), and another very
large group was for development, planning, and design studies.
Fifty-seven conferences and workshops were also financed under
the Title.

Where were the studies conducted? Overwhelmingly in colleges
and universities, as Figure 3 shows.

Although most of the studies were done at universities, as
subject matter the studies concentrated on elementary and
secondary, rather than on higher education. This is illus-
trated in Figure 4.

How were the studies distributed among the instructional
media? Significantly, the largest block of money was allo-
cated for combinations of media--a step toward the "systems"
approach to use of learning resources--which appeared as one
of the novel and important points of emphasis resulting from
the educational ferment of the 1960's (see Figure 5). Among
individual media, the largest amounts went to instructional
television which was moving into the schools during the life
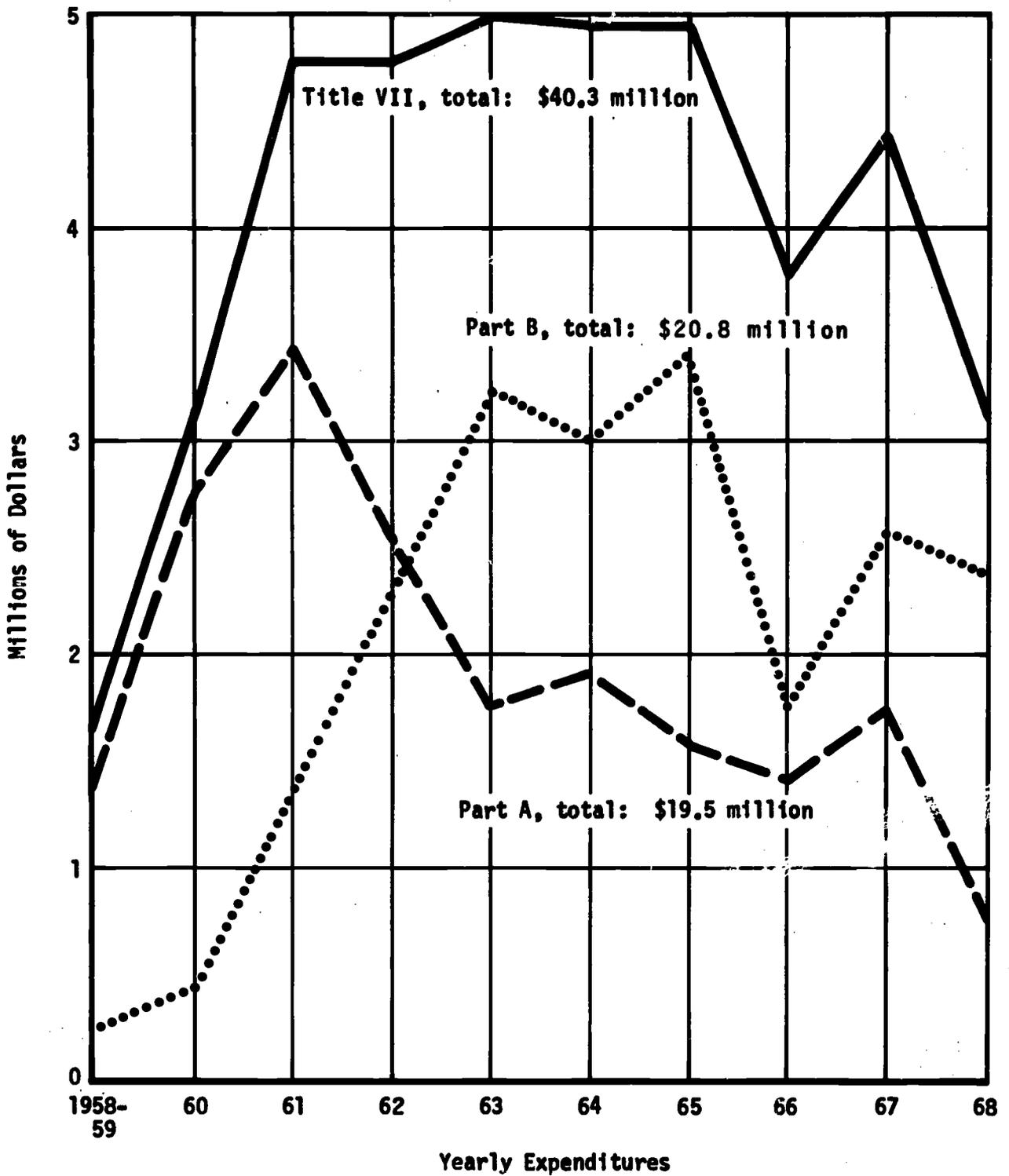
Fig.1. Expenditures on Title VII, Parts A (— — —) and B (⋯⋯⋯),
for the ten years 1958 to 1968.
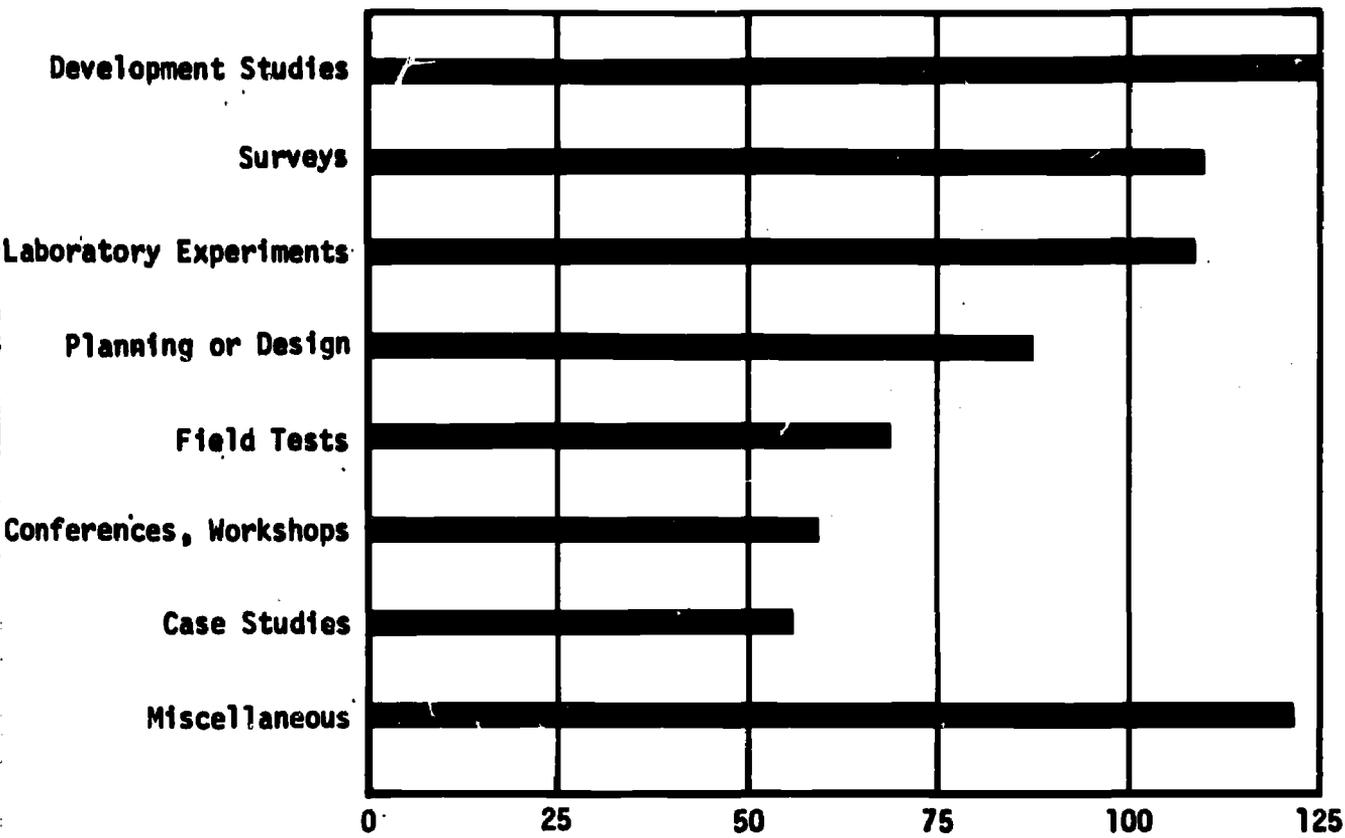
Fig. 2. Distribution of Title VII Projects by Types
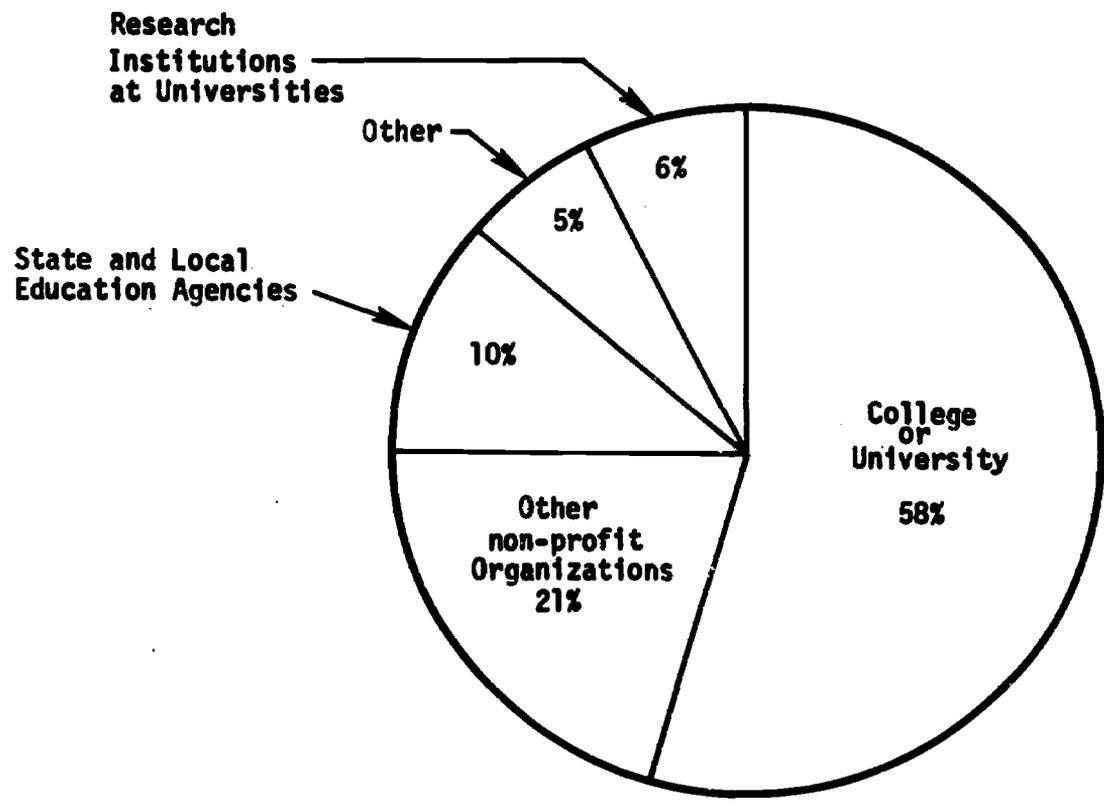
Fig.3. Distribution of Title VII Projects by Type of Organizat'on

of Title VII, and to programmed instruction, which was the
"new" technology of that period. Instructional films, which
had come into use several decades earlier and had been studied
extensively in the late 40's and 50's, were in third place.

Another way to look at the distribution of funds and grants
under Title VII is in terms of the kinds of topics that were
investigated. As Figure 5 demonstrates, the projects were
overwhelmingly concentrated on instructional systems and
practices, which is what the framers of the Act must have
intended. A relatively small proportion of the projects
were dedicated to more basic research in the learning process.
It is interesting to note (see Figure 8) that considerable
emphasis was placed on independent learning systems and self-
directed study, which were central to one of the chief currents
of the prevalent educational ferment--individualized instruc-
tion; and also that computer-assisted and computer-managed
instruction, both of which were just beginning to emerge at
that time, received a considerable amount of support.
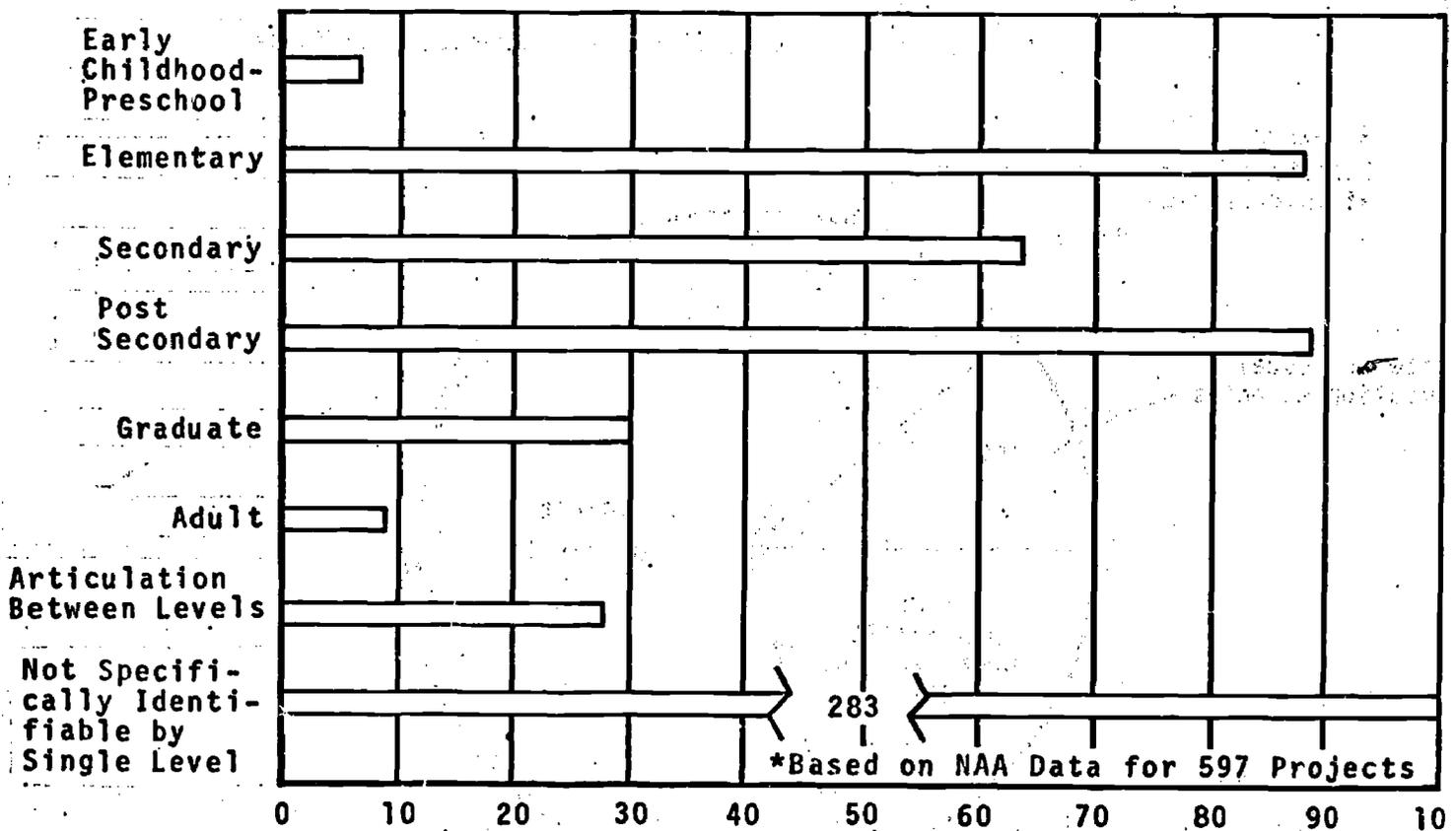
Fig.4.Title VII Projects by Education Level of Target Groups*

Instructional Facilities

Historical & Management

Educational Trends, Needs, &
  Objectives

Organization, Administration,
  Management of School Systems

Educational & Pupil Personnel

Instructional Systems & Practices
  (Not Further Specified)(IS&P)

Curriculum (IS&P)

Computer Managed and/or
  Assisted Instruction (IS&P)

Independent Learning
  Systems (non-computer) (IS&P)

ETV, ITV, Tele-Lecture (IS&P)

Self-Directed Study (IS&P)

Other Media (IS&P)

Individual Development and
Learning Processes (Not
Further Specified) (ID&LP)

Cognitive Functions (ID&LP)

Affective Domain (ID&LP)

Conceptualization (ID&LP)

Psychomotor Skills (ID&LP)

Informational Sciences

0   25   50   75   100   125   150   175

Number of Projects

Fig. 5. Approximate Proportions of Title VII Projects by Topics

TITLE VII IMPACT ON UNIVERSITY MEDIA DEPARTMENTS

AND UNIVERSITY RELATED ORGANIZATIONS

One potential impact of Title VII was its effect.on the
growth and development of media or instructional/educational
technology departments in universities.[1] Six institutions
were examined to ascertain the effect, if any, of the presence
of Title VII grants and contracts on the growth of instruc-
tional media-oriented departments. Two key criteria for
selection were employed: the fact that at present the de-
partment is of substantial size and is generally recognized
as being among the "best" in this field and/or the fact that
a considerable amount of the project monies that were re-
ceived by the indicated department during the period from
1958 to 1968 were under NDEA Title VII.

Case studies were developed for five departments and one
university-related research center. These were the University
of Southern California; Michigan State University; Teaching
Research Division, Oregon State System of Higher Education;
Syracuse University; Pennsylvania State University; and
Indiana University. In addition, a brief review of the
impact of Title VII on the National Instructional Television
Center, currently based at Indiana University, Bloomington,
Indiana, is also undertaken.

University of Southern California

The Instructional Technology Department in the School of
Education, University of Southern California, was examined
for Title VII impact. Until 1961, it was known as the Audio-
Visual Department. In addition to undergoing a change of
name, the department has made other changes and advances
within the last ten years. This decade saw approximately
$1,140,984.00 of Title VII monies which were received by the
Instructional Technology Department, and the personnel
worked on some 20 Title VII projects.

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[1]This portion of the report draws heavily on information
contributed by Dr. Charles F. Schuller, Director of the
Instructional Media Center, Michigan State University;
Dr. James H. Beaird, Director of the Teaching Research
Division of the Oregon State System of Higher Education,
Monmouth, Oregon; Dr. L. C. Larson, Associate Dean of the
School of Education, Indiana University; and Dr. Edwin Cohen,
Director, National Instructional Television Center. The
above four contributors provided detailed information
regarding their departments and groups.

The head of the department during this period, Dr. James Finn, was instrumental in securing many of the projects, and he directed both the Technology Development Project (TDP) and the Instructional Technology and Media Project (ITM). The TDP was a theoretical study and its major objectives were:

1. to develop a unified point of view by which trends in the rapidly developing technology of instruction could be understood, assessed, predicted, and assimilated into educational systems in the United States;

2. to outline the problems teachers faced when considering the trends of technological developments; and, the predictable technological developments in education; and

3. to suggest guidelines that would enable educators to use and give effective direction to those technological developments which offered the potential of greater efficiency in teaching and learning.

Monographs and occasional papers were produced to meet these objectives. Two planning contracts led to the development of the major Technological Development Project study initiated in 1960 and concluded in 1963. The University of Southern California was a subcontractor for the National Education Association, which was the principal contractor.

A later effort commencing in 1963, the ITM, was a threefold project consisting of:

1. the planning and editing of approximately ten scholarly monographs focusing on the new media;

2. the production of three motion pictures and the planning of two others, all designed to disseminate information about the use of the new media and developments in the field; and

3. the surveillance, study and reporting of technological developments as they affected American education.

This, in effect, was an attempt to continue some of the functions of the TDP, and a rapid retrieval system was developed in order to make immediately available hard to obtain reports, prototype software, equipment, etc. The project utilized a sum of $309,472 dollars.

Other Title VII projects associated with the department included:

The Southern California Automated Cataloging project: a $113,000 project to determine the feasibility of establishing a center for preparing catalogs of instructional materials for organizations in eight counties of Southern California. Standards were developed for input of material that could be used in a computer, and page layouts for a catalog were designed. A number of catalogs were converted for computer printout and the catalogs were reproduced and distributed.

A 1961 study described the practices in the fields of new educational media and audiovisual services of 50 state departments of education. Directed by Francis Noel, this $163,403 project involved developing a summary of national patterns of activities in state departments of education, as well as individual descriptive reports of each state's activities, comments and observations in reference to the role of state departments of education in media and audiovisual education activities.

Dr. William Allen, director of research, Department of Cinema, and adjunct professor, Department of Instructional Technology, played a major role in Title VII activities of the department. In addition to being editor of *Audio-Visual Communication Review*, which abstracted over 300 Title VII projects under contract to the Office of Education, he has directed and carried out nine Title VII projects totaling $423,358. These projects include two Part B (dissemination) projects of an analysis of research under Title VII and preparation of a course of study for research information theory in educational media research. Other projects dealt with the learner response, feedback, and review in a cinematic presentation, the effectiveness of different combinations of visual and verbal presentation modes, motion variables in film presentation, nonlinearity variables in cinematic presentation, and similar efforts. Significantly, the Department of Cinema and the Department of Instructional Technology--are related closely to each other as Dr. Finn was joint head of both departments from 1958 to 1965.

Thirty-four individuals have earned their Ph.D. degrees
from the Instructional Technology Department at USC. Seven
of these were prior to 1958. Five were granted during 1958
and the remainder during the last ten years, with seven
finishing by the spring of 1969. Five of these individuals
conducted Title VII projects during their studies in the
department. These projects ranged in size from $1,000.00
to $8,000.00, and one study of $49,000.00 was conducted
jointly with Dr. Allen.

The graduates have dispersed to 14 states and one foreign
country. The majority are involved in higher education,
the second largest group in public, elementary, and secondary
school activities and the third largest in non-profit research
and development efforts such as regional laboratories, etc.

The department staff of professors gradually increased during
the 1958-1968 time period from two in early 1958 to six by
1964. It has remained at this level since 1964.

With the construction of a new School of Education building,
in 1967, the department also gained new facilities. In
addition to standard classrooms, the department can operate
other specially designed areas. One of these includes a
television studio and control room. It has three floor
cameras, film chain and videotape recorder, with the
necessary control facilities for mixing a variety of sound
and image sources. In addition, many rooms are equipped
for large group multi-media and multi-screen presentations.

Course offerings have increased from 15 to 23 within the
ten-year period. More significantly, some general audio-
visual courses have been dropped and other courses have
been included that are related to mass communication theory,
instructional materials centers, multi-media presentations,
programmed instruction, designing instructional systems,
and computer managed and assisted instruction. All of these
are related activities sponsored under Title VII. It would
be fair to assume that considerable experience and knowledge
in the utilization of the technology were obtained in relation
to the Title VII projects. Along with these courses others
have been added in instructional technology theory and re-
search at the graduate level leading to the doctorate.

Student enrollment in the department has increased signifi-
cantly as Table 1 and 2 indicate. On the basis of grade
sheets turned in to the University Registrar, a count was
made of the number of students enrolled in each course in
the department each semester of the 1958-1968 period. While
these figures are totaled and do not represent a literal head
count of full or part-time students in the department, the
increasing volume speaks clearly of the growth of the department.

An actual parallel development is demonstrated by looking
at a single course: I.T.-577, "Research in Theory in
Instructional Technology" (or "Audio Visuals," as it was
known earlier). This course is a requirement for the
Master's Degree or any higher degree and also represents
the basic course for those doing any significant amount
of work in the department. The same course has been
offered throughout the Title VII period and Table 1
shows the number of students who have taken the course.

TABLE 1

STUDENT ENROLLMENT

DEPARTMENT OF INSTRUCTIONAL TECHNOLOGY

	Enrollment in One Course, "I.T.-577"	Total Enrollment in the Department*
1958 (fall only)	3	285
1959	16	646
1960	15	836
1961	16	743
1962	25	722
1963	30	745
1964	29	696
1965	65	765
1966	140	963
1967	92	841
1968	97	957
1969 (fall estimate)	61	992

*Number of registrations in all courses.

55

TABLE 2

COURSE ENROLLMENT COMPARISON

	Enrollment in One Course, "I.T.-477"	Total Enrollment in All Other Courses*
1958 (fall only)	256	29
1959	574	72
1960	749	87
1961	617	126
1962	528	194
1963	555	190
1964	467	229
1965	311	454
1966	382	581
1967	400	441
1968	354	603
1969 (fall estimate)	282	710

*Number of registrations in all courses.

Table 2 gives a picture of another interesting trend in
the department. Course number, I.T.-477, "Classroom Use
of Instructional Media," has been a part of the offerings
in the department through the Title VII period and until
the mid-60's, was required by the State of California for
teaching credential candidates. While not required by the
State today, it is used in basic teacher training and as
such provides training in methods of selection, evaluation,
and utilization of instructional media, as they are inte-
grated with curricula content. Always a substantial part
of the department, especially in the earlier years, this
course was overshadowed during the Title VII period by
newer courses directly related to the types of advances
Title VII was designed to promote. Table 1 represents
total numbers of enrollment, whereas Table 2 contrasts
I.T.-477 with all other courses. The enrollment has shifted
to such courses as "Direction of Instructional Materials
Centers," "Evaluation of Instructional Media," "Programmed
Instruction," "Educational Uses of TV," "Designing Instruc-
tional Systems," "Computer Managed and Assisted Instruction"
and other similar courses.

During the 1958-1968 period, the Instructional Technology
Department at USC did make important changes and grew
significantly. Title VII activities and monies were
present during this time. Therefore, the Title VII
efforts contributed to the growth. The presence of
Dr. Finn, Dr. Allen, other Title VII directors, along
with their supporting staffs, carried over into the
course development and teaching assignments, although
by no means providing the major support for teaching
faculty positions. As an example, in the fall of 1969,
11 instructors with supporting teaching assistants are
required to provide the courses available, while only
6 permanent professors were officially assigned to the
department. In short, the balance of the teaching per-
sonnel are drawn from "nearby" sources and projects to
complete the requirement. This has undoubtedly been the
pattern throughout the Title VII period. It would be
reasonable to assume that Title VII projects helped make
people and resources more readily available to a developing
Department of Instructional Technology.

Michigan State University

The Michigan State University (MSU) Instructional Media
Center carried on a number of Title VII NDEA projects during
the period from 1960 through approximately 1967 which totaled
approximately $1,620,055 in funding. The first of these
was a contract to study the feasibility of developing an
organization of groups with a primary interest in the field
of educational media. This was the first of a series of
contracts which led to the development of the Educational
Media Council. The EMC continues to the present time with
headquarters in Washington, D. C., and memberships from 18
national organizations including the following:

        American Book Publishers Council
        American Educational Publishers Institute
        American Library Association
        American Society for Training and Development
        Association for Supervision and Curriculum
           Development, NEA
        Department of Audiovisual Instruction
        Educational Film Library Association
        Educational Products Information Exchange Institute
        Electronic Industries Association
        Magazine Publishers Association
        National Association of Educational Broadcasters
        National Audio-Visual Association
        National Educational Television
        National Instructional Television Center

National Society for Programmed Instruction
National University Extension Association
Society of Motion Picture and Television Engineers
University Film Association

While not directly related to program developments at MSU,
the Educational Media Council helped to increase nationwide
comprehension of the inherent role of technology in the edu-
cational process, to coordinate the efforts of national or-
ganizations in this field, and to generally focus increased
attention by the USOE and by educators on both the potenti-
alities and the developmental needs of the area. MSU's
leadership in organizing the EMC had a salutary, if indirect,
effect on overall development of the IMC program.

Instructional Systems Project

A second major contract was undertaken by Michigan State
University's IMC in 1962 entitled "A Procedural and Cost
Analysis Study of Media in Instructional Systems Development."
The study was extended in 1964 and completed in 1966. During
the latter two years of the project, a model developed during
the first phase was tested out at MSU, Syracuse University,
the University of Colorado, and San Francisco State College.
Each of the institutions adapted the model to their own par-
ticular conditions and needs. Generally, the model proved
to be effective and is currently used in modified form in
numerous institutions of higher education across the country.

The Instructional Systems Development study had a distinct
local impact on the IMC's program on campus and on the pro-
fessional preparation program for media specialists. During
the initial phase of the Project, several instructional systems
efforts were initiated locally and these experienced varying
degrees of success. However, such early efforts exemplified
recognized needs for improving undergraduate instruction and
were among the factors leading to the establishment in 1965
of the University's Educational Development Program (EDP),
which included an administrative shift of the Instructional
Media Center from a peripheral service position to the Office
of the Provost of the University as a part of a newly-created
Instructional Development Service. During the 1965-70 period,
some 200 projects were conducted under EDP of which two-thirds
involved educational technology programs designed in part and
produced by the Instructional Media Center. Of these, some
15 to 20 EDP projects resulted in instructional systems of
a fairly sophisticated nature in academic subject areas
ranging from the sciences to the fine arts.

Single Concept Film Project

A project, under the direction of Dr. Elwood Miller,
directed at studying the Single Concept Film Clip was
begun in 1964 under Title VII and continued for a three-
year period. This project has provided insights in the
design and application of instructional materials including
short films. While the impact of the project on the overall
IMC program and on the professional preparation program were
less direct than that of the Instructional Systems Study,
nonetheless it provided valuable inputs about the use of
new systems of materials development and also provided the
opportunity for six research studies for graduate students.

The IMC, Instructional Systems, and Single Concept Film
projects carried on under Title VII all served to provide
opportunities for national leadership and visibility for
the IMC professional preparation program at MSU. This
probably helped provide a steady increase in the number
of high quality doctoral candidates from across the nation.
The first MSU doctorate in the professional program in
Instructional Technology was presented in 1960. The next
two doctorates were completed in 1963 and five more in 1965.
From 1966 through 1969, there were 15 degrees in Instructional
Development and Technology earned at MSU.

An estimate of the present size of the program is indicated
by the following quote from the 1968-69 IMC Annual Report:

>   "During 1968-69, the IMC provided instructional
>   staff for 40 courses enrolling 1,211 students,
>   including four federally-funded Institutes en-
>   rolling 90 students; this compares with 36 courses
>   and 1,096 students, including Institutes, offered
>   in 1967-68. Presently there are 133 majors en-
>   rolled in Instructional Development and Technology
>   as compared with 111 a year ago, including 70
>   master's candidates, 3 specialists, 57 doctoral
>   candidates, and 3 post-doctoral students."

Teaching Research Division, Oregon State System of
Higher Education

The Teaching Research Center at the Oregon College of
Education was initiated in May 1959. It has developed
into Teaching Research: A Division of the Oregon State
System of Higher Education. The substantial growth of
this unit parallels the period during which Title VII
existed.

The personnel of the group now numbers approximately 100 and its growth has been continuous as shown in Figure 1.[2]
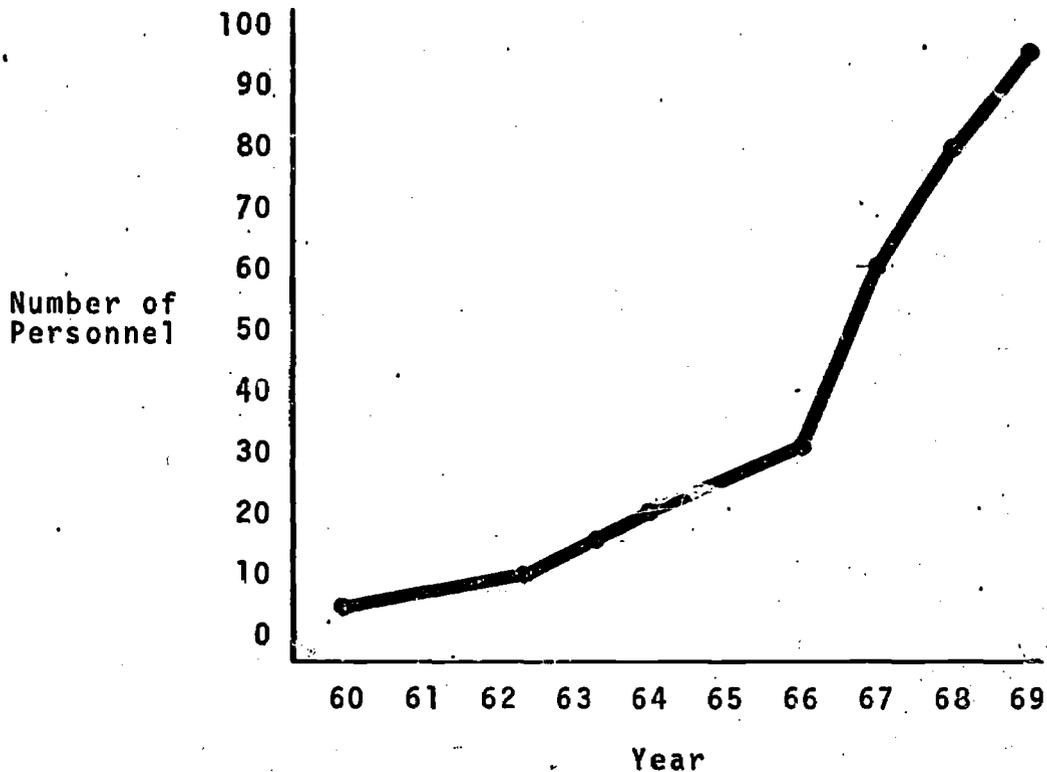
Fig. 1. Growth of the Teaching Research Division

Using the research program as a base, the division is currently organized into three units: two operational research units, and one general unit responsible for division-wide support activities. The two research units include special subgroups dealing with simulation; administration, intercultural articulation, research, evaluation, and development training; affective-cognitive techniques; special education; evaluation research; individualized instruction; computer-assisted instruction; and learning ecologies.

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[2]Reproduced from *Teaching Research: Its History and Capability*. Teaching Research, A Division of the Oregon State System of Higher Education, Monmouth, Oregon, p. 4.

Teaching Research received its initial impetus from a
grant to the Oregon College of Education in May, 1959.
This grant was made under the provisions of Title VII
of the National Defense Education Act of 1957. In 1960,
a Training Research Center was established on the campus
of Oregon College of Education.

The impact of Title VII and its influence on this particular
activity in the field of teaching research is reflected in
the following remarks from a letter by James H. Beaird.

> "As stated in the attached document, the history
> of this division can be traced directly to a Title
> VII grant made to Dr. Jack Edling in May of 1959.
> The first five grants made it possible to operate
> the division and further permitted the attraction
> of staff members who have been instrumental in the
> development of this organization.

> In the first three or four years of the division's
> existence almost all proposals prepared within the
> division were submitted to Title VII....personnel
> within this division were strongly committed to
> the use of media and to its potential for the
> improvement of instruction.

> Arguments could be developed indicating that more
> than 75 percent of our current operation can be
> traced directly to one or more Title VII funded
> activities within the division. At the same time
> it could be argued that had Title VII funding not
> been available, personnel within the divison would
> probably have located some other funding source
> and concentrated its efforts there. Be that as
> it may, Title VII was in existence and Teaching
> Research, as an organization, has grown and evolved
> largely as a result of the impetus and continued
> support given by that program. As one studies
> the division's list of projects and activities,
> one will note that no other source of funding
> has had the impact on the division's activities
> as that of Title VII.

> In terms of specifics, the activities of the
> Simulation Systems and Individualized Instruction
> Programs at Teaching Research are almost entirely
> a result of Title VII activities. Additionally,
> Dr. Del Schalock, Director of the Learning Ecologies
> Program, Mr. Bud Paulson, Director of the Evaluation
> Research Program, Mr. Dale Hamreus, Division Associate

> *Director, and myself all joined the staff as a*
> *direct result of the presence of Title VII projects.*
> *It is fair therefore to say that all of the areas*
> *which are under the influence of these individuals*
> *have in some way resulted from Title VII influence.*
> *Additionally, our program on research, evaluation,*
> *and developmental training has been heavily in-*
> *fluenced by knowledge and competency developed*
> *by many of our staff in association with Title*
> *VII projects."[3]*

The growth in total contract volume over the ten-year period
of the group is reflected in Figure 2. The titles of
many of the projects are provided below to give an idea of
the scope and diversity of the work undertaken by this group.

> Increasing prediction of teacher's classroom
> behavior through use of motion picture tests.
> ($62,000)
>
> Simulated tape interviews in counselor training.
> ($4,000)
>
> A comparative study of current educational programs
> for pre-school children. ($64,000)
>
> Educational media (TV) for the pre-school child.
> ($11,000)
>
> Media, creativity, and change. ($4,000)
>
> Interinstitutional teaching by TV in the Oregon
> State System of Higher Education. ($29,000)
>
> Using simulation techniques to change attitudes
> of education majors toward professional course
> objectives. ($4,000)
>
> A study of the effectiveness of audiovisual
> teaching materials when prepar d according to
> the principles of motivational research.
> ($60,000)
>
> Experiments with educational media designed to
> modify attitudes. ($36,000)
>
> Group vs. individual pacing in programmed
> instruction. ($3,000)

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[3] Letter from Dr. James Beaird, December 1, 1969.

Thousands of
Dollars

1200
1100
1000
900
800
700
600
500
400
300
200
100

Total $ Expended

State $ Available

59 60 61 62 63 64 65 66 67 68 69

Year
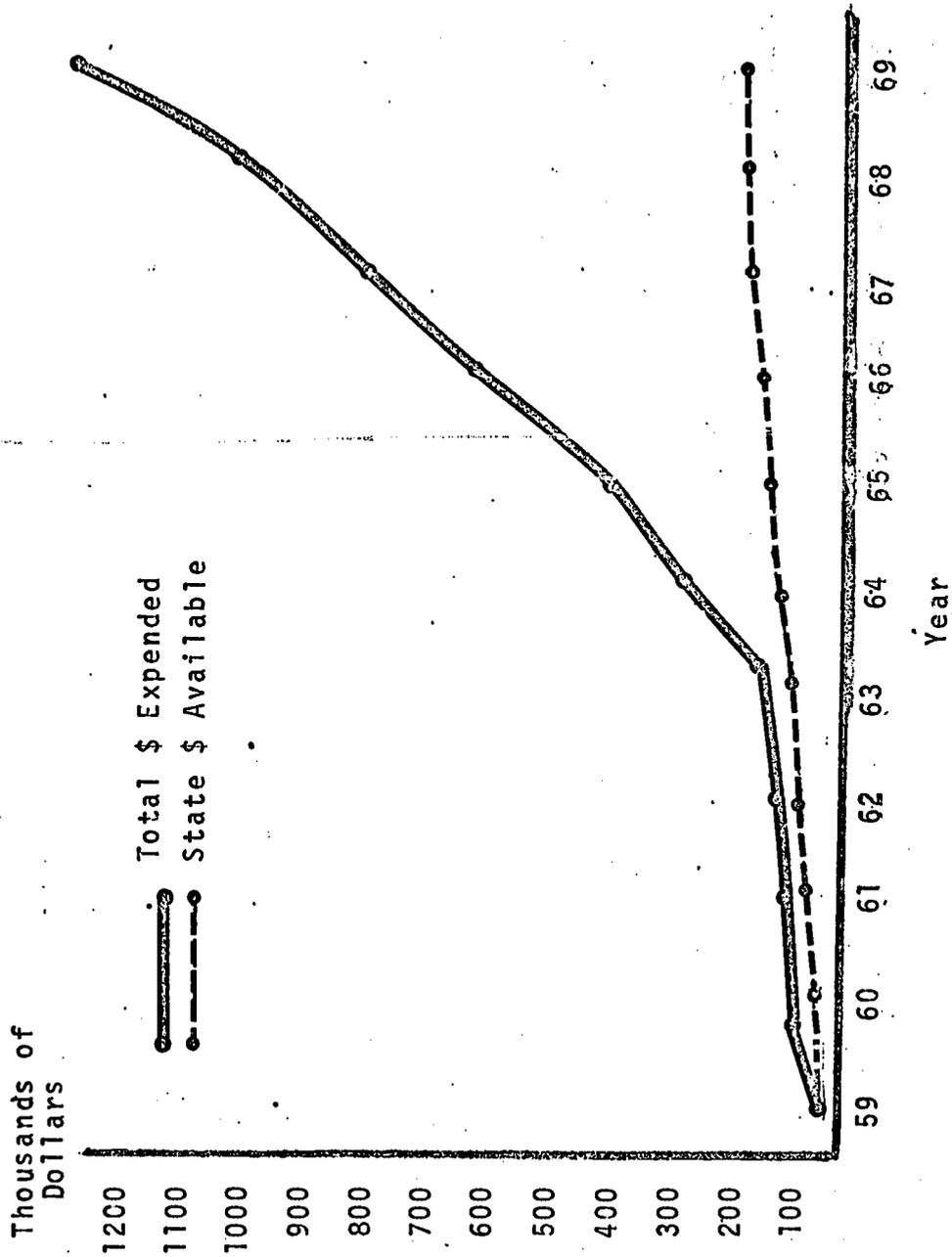
Fig. 2.   Growth in Contract Funding at Teaching Research Division [4]

[4] *Ibid.*, p. 8.

Self-evaluation in in-service teacher education.
($30,000)

Classroom simulation--further studies on
dimensions of realism.   ($23,000)

Successive vs. simultaneous attainment of
instructional objectives in classroom simulation.
($98,000)

Development and validation of criteria for
evaluating media training.   ($113,000)

Motion pictures as test stimuli--an application
of new media to the prediction of complex
behavior.   ($54,000)

Interaction analysis and classroom simulation
as adjunct instruction in teacher education.
($41,183)

The need for, and feasibility of, Regional
Educational media research organizations with
a regional research improvement orientation.
($25,000)

Center for Instructional Communications, Syracuse University

This department received far less Title VII funding than any
of the other departments reviewed by this project. Yet, in
a sense, it serves as a vignette of the indirect impact that
the Title VII program could have had on a school, even one
that housed only a few projects under this program. A total
of approximately $176,000 was received by this school over
the ten-year period. Some project titles are given below.

• Survey of the educational media research and programs
  in Latin America.   ($4,000)

• Instructional materials for teaching AV courses--
  an innovative list of motion pictures, kinescopes,
  filmstrips, slide sets, recordings, and tapes.   ($7,000)

• Computer simulation of a statewide film library
  network--a feasibility study.   ($57,000)

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●The three Rs plus a new approach to education's
  problems. ($27,000)

●Prototype system for a computer-based statewide
  film library network--a model operation. ($81,000)

However, it would appear that the existence of a federally--
sponsored program in the area of educational media provided
a new degree of respectability to the few Syracuse faculty
members initially working in this area in 1958. Monies had
been provided for research and dissemination in the area of
educational media. This status-enhancing device continued
with the advent of other legislation such as ESEA and the
passage of the Media Institutes provisions under Title IX.

In addition, key members of the other departments were
asked to be field readers for the Title VII program, again
indirectly enhancing the Department's reputation and status.

Even with limited Title VII funds, opportunities were prov-
ided for graduate students to complete portions of or, in
certain instances, their entire doctoral programs.

When a member of the project staff recently visited the
Center, he was told by the current department staff that
Title VII has aided greatly in giving the field the be-
ginnings of a truly professional occupation area.

Pennsylvania State University

This university, as contrasted to those already discussed,
had Title VII projects housed in a number of departments and
not centralized in a "media-oriented" section. These inclu-
ded the Departments of Educational Psychology, Anthropology,
Psychology, Mathematics, Speech, and the Divisions of Instruc-
tional Services and Instructional Research and Development.

At Pennsylvania State University there were 21 Title VII
projects, totaling over $1 million in grants. Penn State
professors and administrators reported that one Title VII
project became a prototype for the adoption and use of low-
cost helical scan videotape recorders on 16 of the university's
branch campuses. Now nearly 2,000 videotapes are being ex-
changed statewide among campuses. This particular project
was carried out at a cost to the federal government of less

than $10,000 and is now solely supported with university funds. Computer-assisted instruction was also initiated at the School of Education at Penn State via Title VII funding. Since that time, there have been at least 12 other projects at Penn State involving the use of the computer for educational purposes. Still another project was concerned with improving teaching materials for "new math." These materials were published, and the five-year sales totaled more than 250,000 copies. The material has already appeared in Spanish and will be soon translated into Portuguese. A number of doctoral candidates worked on these and other projects and were supported by Title VII research assistantships. Many of the students have made instructional technology their principal research field.

Indiana University

During the period 1958-1968, over 25 projects were supported at Indiana University under Title VII, with funding totaling almost $2 million. One of the largest grants helped to establish what today has become the National Instructional Television Center on the Indiana campus. This activity is discussed separately in the section that follows.

The current Division of Instructional Systems Technology, where the majority of the Title VII projects were conducted, grew from an Audio-Visual Center in the School of Education in 1940 to a Department of Audio-Visual Education in 1950 to a Division of Educational Media in 1959.

Of the 118 doctoral degrees awarded between the years 1959-1969, eight were completed with funding from Title VII's small grant program and the faculty reported that another 48, in terms of subject, time, and support were developed either directly or indirectly out of Title VII projects.

Some of the Title VII projects conducted in this group included:

- The effect of observation of pictorial stimuli on transfer tasks.

- Influence of three teaching machine factors--feedback to programmer, participation by the learner, and feedback to learner on the production and utilization of science films.

- A socio- and psycho-linguistic theory of pictorial communication.

- Studies of patterns of influence in the school situation as they affect the use of AV materials.

- A conference on implementing a system for national bibliographic control of the newer educational media.

- Formulation of quantitative guidelines for the audio-visual communications field.

- Organizational patterns, practices, and facilities used in the preparation of visual materials for instructional purposes.

- Improving the quality of teacher performance by use of the videotape recorder.

This latter study was one of the pioneering efforts in this area. The organizational patterns study was published under the title of "Improving the Learning Environment" by the U.S. Office of Education and 15,000 copies were made available free to school systems. Efforts led to the development of areas of specialization within the doctoral program. Interestingly, this department received over ten small grants ($2-4 thousand), grants that enabled individuals to explore new areas and begin to evolve a study which then culminated in their doctoral dissertation.

As was indicated in the chapter on the legislative history of Title VII, this legislation provided the foundation and experience upon which other later acts, etc., would build. Consequently, it is not surprising to see that Title VII made a significant contribution to this institution in providing an opportunity to build a knowledge base necessary for reorganizing and restructuring the professional education program. Initial support from the NDEA, Elementary and Secondary Act, the Higher Education Act, and the Education Professions Development Act, helped to provide the necessary academic and professional staff, support staff, materials and equipment which enabled Indiana University's integrated Audio-Visual Center's Instructional Systems Technology Program to make substantial progress during the period 1958-1970.[1] The Division of Instructional Systems Technology now serves 181 majors as contrasted to 59 in 1958 and has increased its professional-level faculty in this area from 8 out of 40 in 1958-59 to 23 out of 51 in 1969-70.

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[1]Personal communication, L. C. Larson, June 10, 1970.

The National Instructional Television Center, Bloomington, Indiana
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One way to view the impact of Title VII is to see whether an activity continues after the federal funds have been exhausted. A good example of an activity that could continue is The National Instructional Television Center (NITC).

Title VII was largely responsible for the continuing existence and circulation of high-quality instructional television programs. Among the facilities and projects it supported was The National Instructional Television Center. A grant of $1,105,000 in 1965 allowed this service organization to move from National Educational Television in New York City, where its growth and tenure were both limited, to the University of Indiana, where the potential for expansion was greater and the working conditions more favorable. The University of Indiana Foundation invested a substantial amount of money in support of the NITC, and this, together with the Title VII grant, gave the Center a chance to become eventually self-supporting as it carried out its work. Currently, the loans are being repaid and operating expenses derived from yearly activities. It now makes a number of high-quality instructional programs available by rent to schools and colleges throughout the country and produces some instructional programs of its own where suitable material to satisfy current needs does not exist.

The Center has undergone three basic phases in its evolution:
(1) maintaining a library of locally produced materials;
(2) upgrading and sharing local resources; and (3) designing and developing programs.

The concept in educational television broadcasting is to deal with the full range of population needs, from daytime programs primarily for children in school to evening programs basically for adults. NITC has a mission to deal with the daytime aspect.

During the period 1965-1970, the school population reached by NITC telecourses approximated 17 million youngsters in grades K-12 and an additional 150,000 students via higher education or in-service teacher training programs.

There were many difficulties initially in translating and transferring locally-produced programs between school districts. In 1959, with the advent of videotapes, it became possible to transfer taped programs so that local school districts and stations could see what had been produced

elsewhere. It was obvious that the common denominator of the majority of these productions was mediocrity. Only about 15 percent were of good professional quality, whereas 20 to 30 percent were near misses that could be restored and revised. Criteria for selection and dissemination by the Center and its review groups included: production-quality, communication of stated goals, technical quality, and the efficiency with which the material had been introduced into the curriculum of the largest number of schools.

Besides upgrading existing materials, the Center is currently designing programs in four basic areas: elementary school art, music, physical education, and early childhood education. These curriculum areas are ones where many schools do not have sufficient roving content specialists and would welcome additional resources.

SELECTED JOURNAL REVIEW AND INCIDENCE

OF CITATION ANALYSIS

The amount of scholarship in educational technology
increased markedly during the life of Title VII. Results
of work on Title VII projects were disseminated in several
ways. The project director and his staff might have pub-
lished a report or article in a research journal (direct
dissemination), or the article might have been cited by
another author to acknowledge the Title VII contribution
or to list the Title VII article as an additional source
of information (indirect dissemination). Both of these
modes of dissemination were examined, by means of a
journal review and an incidence of citation analysis.

JOURNAL REVIEW

For the journal review, a number of educational periodical
publications were selected that either were related to the
educational media field or were concerned with reporting
educational research.

Educational Media Field:

> *AV Communication Review* (published by the
> Department of Audiovisual Instruction,
> National Education Association);

> *Audiovisual Instruction* (published by the
> Department of Audiovisual Instruction,
> National Education Association);

> *Educational Screen and Audiovisual Guide*
> (published through private ownership);

> *Educational Technology* (published through
> private ownership);

> *Journal of Broadcasting* (published by the
> Association for Professional Broadcasting
> Education).

General Educational Research Field:

> *American Educational Research Journal*
> (published by the American Educational
> Research Association);

Journal of Educational Psychology
(published by the American Psychological
Association);

Journal of Educational Research (published
through private ownership).

The procedure was to examine either complete volumes of
the journals (where Title VII appeared to have a significant
impact) or a sample of specific volumes and issues (where
the impact was found to be low) for the period 1960 through
1969. Two types of information were obtained: (1) the
frequency of articles and research reports arising directly
out of Title VII projects, and (2) evidence, if indicated,
of the influence of Title VII on the editorial policies of
the journals.

Impact on Journal Content

The occurrence of articles and research reports appearing
in the journal and clearly attributable to the influence
of Title VII is listed below for each of the journals
analyzed. The criterion for selection was specific
identification by the authors of Title VII support in
their articles. In instances where this was not provided
the investigator used his knowledge of the research and
researcher to make a judgment regarding the article's
relationship to Title VII.

It might be expected that Title VII would have the greatest
impact on research published in the *AV Communication Review*
because it is devoted exclusively to the educational media
field and is concerned with the publication of articles
related to research and theory. *This proved to be the case.*
An analysis was made of all articles published for the nine
and one-half year period from 1960 through the Summer 1969
issue. Table 1 shows the number of such articles printed
and the percentage these comprise of the total number of
articles in the journal.

The impact of Title VII was felt particularly in the years
1963 through 1966, when 39 percent of the major articles
published in the journal were reports associated with Title
VII-funded projects. Beginning in 1967, however, there was
a considerable decline in the number of such articles pub-
lished, and in 1969 the percentage fell to the lowest figure
(6 percent) for any year studied.

Included in the totals on the following page were two
complete special supplements prepared under Title VII grants
by the Technological Development Project of the University

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ARTICLES IN AV COMMUNICATION REVIEW

TABLE 1

Year	Total Articles Published	Title VII Reports	Percentage Title VII of Total Published
1960	43	4	9%
1961	33	3	9
1962	44	7	16
1963	24	9	38
1964	24	10	42
1965	28	10	36
1966	24	10	41
1967	24	4	17
1968	24	7	29
1969 (2 issues)	16	1	6
	284	65	23%

of Southern California and the Department of Audiovisual
Instruction of the NEA. These reports appeared as the
January-February 1963 and the March-April issues and were
entitled "The Changing Role of the Audiovisual Process in
Education: A Definition and a Glossary of Related Terms"
edited by Donald P. Ely, and "The Role of the Computer in
Future Instructional Systems" by Donald D. Bushnell.

The Title VII program exerted one further influence on *AV
Communication Review* through a contract with the Department
of Audiovisual Instruction for services to disseminate the
results of Title VII research by means of research abstracts
and critical papers related to this research. In all, 293
research abstracts were prepared and published in 15 supple-
ments to the journal from the July-August 1961 through the
Fall 1967 issues, when the ERIC Clearinghouse took over the
job of abstracting.

In three of the chief periodicals for practitioners of
educational technology--Audiovisual Instruction, Educational
Screen, and Educational Technology--almost no articles be-
tween 1960 and 1969 acknowledged Title VII as their source.
This is not entirely surprising because Title VII research
was not geared to producing articles at the practical level
of these journals and seldom did the authors of these articles
acknowledge their sources of funding. On the other hand,
the list of authors who wrote for these journals during the

60's reads like a glossary of Title VII research directors.
It is reasonable to suppose, therefore, that although Title
VII did not contribute directly to these journals, it must
have had a considerable indirect influence.

A sampling of three educational research journals not
focused on instructional media--the American Educational
Research Journal, the Journal of Educational Research,
and the Journal of Educational Psychology--showed that
3 to 16 percent of the articles in the different journals
acknowledged Office of Education support, but only 1 to
5 percent acknowledged support from Title VII. The per-
centages bear some relationship to monies expended for
Title VII as compared to all Office of Education support
in the general area of media and learning research.

The Intangible Influences of Title VII

This analysis has focused mainly on the measurable and
attributable influences of the Title VII research program
as reflected in the number of papers published in the
various professional journals. But such an analysis fails
to take into consideration the influences of the program
on researchers and other media specialists aside from the
stimulation of research reporting. This author got the
impression that many contributors to *Audiovisual Instruction,
Educational Screen and Audiovisual Guide*, and to *Educational
Technology*, in particular, had participated in Title VII
programs and that the articles they were writing, although
not formally attributed to the program, owed a debt to it.

Certainly the fact that such a program as Title VII existed
had an intangible effect on the literature in the field, and
the impression is that research with educational media fil-
tered down to the grass roots and made practitioners in the
field conscious of research in this area. As a consequence,
an overall awareness of the importance of this research seems
to be inherent in much of the writing.

Conclusions

On the basis of the above analysis, the following conclusions
may be drawn regarding the impact of the Title VII research
program in the professional education periodicals.

1. With the exception of the contributions made
    to the content of *AV Communication Review*,
    the Title VII program had negligible direct
    effect upon publications in educational re-
    search and media. Any of the significant
    influences that may have been felt were
    intangible ones that resisted statistical
    measurement.

2. The influence of Title VII on *AV Communication
    Review* was primarily one of supporting a
    research report abstracting service and of
    furnishing a pool of research reports and
    articles from which the editor might draw
    the contents of the journal.

3. The expectation that the Title VII program
    would have any more of an influence than it
    had upon periodical publications would have
    been unrealistic in the light of the nature
    of these publications. They serve as tra-
    ditional and structured vehicles for the
    issemination of research information, and
    it is to be expected that contributors to
    them would conform to the general pattern.
    This means that the most that could be expected
    would be a stockpile of conventional research
    papers, and this is exactly what happened.
    If the dissemination part of the Title VII
    program had the development of new ways of
    making research known as a high priority
    objective, the program probably would have
    made a far greater impact on the journals
    themselves and certainly on education in
    general. What seemed to have happened,
    however, was that attention was largely
    focused on the financial support of local
    conferences, seminars, and surveys, the
    results of which were not adequately
    disseminated.

This is not to say that the only or best way to distribute
research information is through the conventional professional
journals; however, it is possible that the Title VII program
might have been able to reshape some of these journals into
more viable and relevant communication channels had a major
effort been made to do so.

INCIDENCE OF CITATION ANALYSIS

Another way to look at the visibility of research is to
examine the publications cited by authors in their research
articles. In *Unobtrusive Measures*, Webb *et al.* (1966)
proposed the use of less conventional measures to cross-
validate more conventional data through multiple operation-
alism. One of the measures proposed by the Webb *et al.*
study of archival records forms the basis for this study.
To accomplish our objective of ascertaining the effects

of Title VII, we studied one of the basic archival record
data sources of the field--journal articles. This exami-
nation follows suggestions made by Derek de Solla Price
in his article, "Networks of Scientific Papers" (1965),
in which he suggested that it should be possible to pick
out the "classic" journal articles in a field by studying
the incidence of citation.

By studying the incidence of citations across a field, one
can identify those articles which are cited far more fre-
quently than others. These articles can be said to function
as building blocks or turning points upon which new advances
in the field are based.

The current study uses citation analysis in an attempt to
assess the impact of a particular event--Title VII--and
to see whether research supported through this act had any
effect on the field of educational media and technology.

Methodology

The study was broken down into four phases:

> preliminary study of the field;
>
> collection of the data set;
>
> identification of frequently cited sources;
>
> analysis of these cited sources.

Obviously, some publications have a wider readership than
others and, perhaps more important, a more diverse readership
in terms of the potential for putting into practice ideas
derived from Title VII. These widely read publications
might be referred to as "wide-band" publications. An
example of this type of publication might be the *NEA
Journal*, or even, the composite of journals discussed
below. An example of "medium-band" publications might
be the *Review of Educational Research*, published five
times a year by the American Educational Research Associ-
ation. A "narrow-band" publication is one which is of
particular interest to a special group of media researchers
and any Title VII citations for this group are usually
selected after a high degree of screening by the authors.
An example of such a document would be a media section in
the *Annual Review of Psychology*.

"Wide-Band" Analysis

A rapid survey was made of the field with two objectives
in mind: to set a time frame from which to collect data,
and to select journals representative of the field from
which to collect the citations that would make up the
data set. The time frame selected was the 18-month period
January 1968 through June 1969. This period was selected
because it was a convenient size for sampling, and because
it seemed to be the time frame that would be most sensitive
to work supported under Title VII.

The eight journals selected for sampling as those most
likely to delineate the field were:

AERA Journal

AV Communication Review

Educational Technology

Educational Television International

Journal of Educational Psychology

NSPI Journal

Programmed Learning and Educational Technology

Review of Educational Research (No. 4, 1968)

Collection of the Data Set

Collection of the data set consisted of coding the biblio-
graphic citations appearing in the journal articles, and
preparing and maintaining dictionaries which listed and
coded all cited journals, books, dissertations, technical
reports, films and other sources. At the completion of
this phase of the project, 4293 citations composed of 1997
journal citations, 1190 book citations and 1106 citations
of other sources had been collected and input into computer
data sets. The dictionaries contained some 300 journals,
700 books and 900 other sources.

Identification of Frequently Cited Sources

The citations in the data set were divided into three
groups--journals, books and other sources, and were analyzed
separately. The citations were sorted to allow visual
identification of frequently cited sources. After the
citation frequencies were inspected, all journal articles

cited three or more times were extracted for further
analysis. This produced an easily manageable sample
of 35 journal articles.

The final stage of the study consisted of tracing back
frequently cited sources to obtain titles, authors, sources
of support (to test for Title VII effects), number of
citations and other data.

The remainder of this report is based on the analysis of
the 1997 journal article citations.

Frequently Cited Journal Articles

Using the criteria of three or more citations, 35 journal
articles were selected for further analysis. Of these, 28
were cited three times, 5 were cited four times, 1 was cited
five times and 2 were cited six times. All of the cited
articles were relatively recent--the mean publication year
was 1962 and the mode was 1967. The mean number of authors
per articles was 1.51, fairly close to the figures reported
in other areas of behavioral sciences by Lin and Nelson
(1969), Mick (1969), and Parker, Paisley and Garrett (1967).

The articles appeared in 20 different journals. Four of
these journals were represented by two or more articles:
11 of the articles appeared in the *Journal of Educational
Psychology*, four in *AV Communication Review*, and two each
appeared in the *American Educational Research Journal* and
Psychological Review.

Several authors in the field were represented by more than
one article: David P. Ausubel wrote or contributed to three
of the articles, and Donald Fitzgerald, Robert M. Gagné,
Albert Roe and Richard E. Snow each wrote or contributed
to two articles.

The following 35 articles are called "frequently cited"
rather than "classic" because it is felt that the sample
of citations from which the list was drawn is far too
small to justify a "classic" label. They do, however,
represent the strongest journal article influences on
the field, as defined by the journal sample and the time
frame. The articles are ranked below by the frequency
of citation and alphabetically.

Analysis of Frequently Cited Journal Articles

The 35 frequently cited articles included 23 research
reports and 12 nonresearch articles (mainly speeches)

theoretical explorations and literature reviews. Some of
these nonresearch articles were, however, based on earlier
research work.

Of the 23 research reports, 13 acknowledged support through
grants, fellowships and other sources. The sources of sup-
port (in some articles more than one source was acknowledged)
were:

Office of Education	3
Other Federal Agencies	7
Private Sources	3
University Grants	3

In addition, one nonresearch article also acknowledged
Office of Education support.

Two of the 35 articles were based on doctoral dissertations.

6 Citations

Snow, Richard E., Tiffin, Joseph, and Seibert, Warren F.
Individual Differences and Instructional Film Effects.
Journal of Educational Psychology, 1965, 56 (6), 315.

Gagné, Robert M. The Acquisition of Knowledge.
Psychological Review, 1962, 69 (4), 355.

5 Citations

Rothkopf, Ernst Z. Learning from Written Instructive
Materials: An Exploration of the Control of
Inspection Behavior of Test-Like Events. *American
Educational Research Journal*, 1966, 3 (4), 241.

Gagné, Robert M. and Brown, Larry T. Some Factors
in the Programming of Conceptual Learning.
Journal of Experimental Psychology, 1961,
52 (4), 313.

Travers, Robert M. W. The Transmission of Information
to Human Receivers. *AV Communication Review*, 1964,
12 (4), 373.

Kaiser, Henry F. The Varimax Criterion for Analytic
Rotation in Factor Analysis. *Psychometrika*, 1958,
23 (3), 187.

3 Citations

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Hershberger, Wayne A. and Terry, Donald F. Delay of Self-Testing in Three Types of Programmed Text. *Journal of Educational Psychology*, 1965, 56 (1), 22.

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Jensen, Arthur and Rohwer, William D., Jr. Syntactical Mediation of Serial and Paired Associate Learning as a Function of Age. *Child Development*, 1965, 36 (3), 601.

Skinner, B. F. Teaching Machines. *Science*, 1958, 128 (3330), 969.

Otto, Wayne. The Acquisition and Retention of Paired Associates by Good, Average and Poor Readers. *Journal of Educational Psychology*, 1961, 52 (5), 241.

Scandura, Joseph M. The Basic Unit in Meaningful Learning--Association or Principle (Set-Function Language). *School Review*, 1967, 75 (3), 329.

Payne, David A.; Krathwohl, David R. and Gordon, John. The Effect of Sequence on Programmed Instruction. *American Educational Research Journal*, 1967, 4 (2), 125.

Amidon, Edmund and Flanders, Ned A. The Effects of Direct and Indirect Teacher Influence on Dependent Prone Students. *Journal of Educational Psychology*, 1961, 52 (6), 286.

Gentile, Ronald J. The First Generation of Computer Assisted Instruction Systems. *AV Communication Review*, 1967, 15 (1), 23.

Harlow, Harry T. The Formation of Learning Sets. *Psychological Review*, 1949, 56 (1), 51.

Ausubel, David P. and Fitzgerald, Donald. The Role of Discriminability in Meaningful Verbal Learning and Retention. *Journal of Educational Psychology*, 1962, 52 (5), 266.

Knight, M.A.G.   The Royal Air Force Study.
    Occupational Psychology, 1963, 37 (1), 68.

Burns, Richard W.   The Theory of Expressing
    Objectives. *Educational Technology*, 1967,
    7 (20), 1.

Cronbach, Lee J.   The Two Disciplines of Scientific
    Psychology. *American Psychologist*, 1957, 12 (11),
    671.

Ausubel, David P.   The Use of Advance Organizers
    in the Learning and Retention of Meaningful
    Verbal Material. *Journal of Educational
    Psychology*, 1960, 51 (5), 267.

Pryluck, Calvin and Snow, Richard E.   Toward a
    Psycholinguistics of Cinema. *AV Communication
    Review*, 1967, 15 (1), 54.

Bishop, Carol H.   Transfer Effects of Word and
    Letter Training in Reading. *Journal of Verbal
    Learning and Verbal Behavior*, 1964, 3 (3), 215.

Conclusions

Of the four articles acknowledging Office of Education
support, only one could be linked with Title VII-sponsored
research: "Individual Differences and Instructional Film
Effects" by Richard E. Snow, Joseph Tiffin, and Warren F.
Seibert. Identification of Title VII sponsorship was ac-
complished through searching the files of the ERIC Clear-
inghouse on Educational Media and Technology. It was one
of the two most frequently cited articles in the sample,
and was cited a total of six times. The authors, indi-
vidually, had a total of three Title VII projects during
the period 1961-63 which had topics closely related to
the journal citation.

In the four-citation category, the work of Robert M.W.
Travers can be linked directly to a Title VII effort that
spanned 1962-65. In the three-citation category, the work
of Roe, Case, and Roe (1961-63); Pryluck and Snow (1965);
Payne, Krathwohl, and Gordon (1965); and also that of
Amidon and Flanders (1959-61) can be seen to have direct
linkages to Title VII efforts.

"Medium-Band" Analysis

An attempt was made to assess the impact of Title VII
output on "Medium-band" publications such as the *Review*
of Educational Research which devoted an issue to Edu-
cational Media and Technology in 1962 and again in 1968.
The *Review* is received by a wide range of educators in-
terested in educational research, such as administrators,
curriculum specialists, etc. Since two issues were devoted
to this topic, one during the initial years of Title VII,
and one during the later years, two checkpoints are available
along a continuum paralleling the life of the Title VII pro-
gram.

Figure 1 indicates the percentage of citations that was
recorded for Title VII in 1962 and in 1968. The 1962 issue
was released in April of that year. Consequently, any Title
VII documents produced from late 1958 through 1961 had a
chance of being cited. The fact that 27 percent of the
total citations can be attributed to Title VII reflects
an "impact" of considerable strength when one considers
the newness of the program.

In some instances, authors of chapters cited abstracts of
Title VII projects reported in the *AV Communication Review.*
These were included as citations since the essence of the
Title VII work (as reported in the abstract) was recognized
as being of value by the chapter author, even though he had
not acquired a copy of the project's final report.

Title VII citations increased to 44 percent in April, 1968.
This increase certainly reflects the fruits of nine years
of research and dissemination activities in the field of
media. A page from one section with Title VII citations
circled is provided as Figure 2 to give some idea of the
density of Title VII citations.

Another dimension of the impact of Title VII is reflected
in the level of project director participation. For in-
stance, did all the potential Title VII project directors
generate a report that found its way into the *Review of*
Educational Research? In 1962, 46 percent of the project
director population appeared, whereas in 1968, only 31
percent appeared. The latter figure represented a larger
number of project directors (138 in 1968 as compared with
67 in 1962), but of course, the total project director
population had also grown by 1968.

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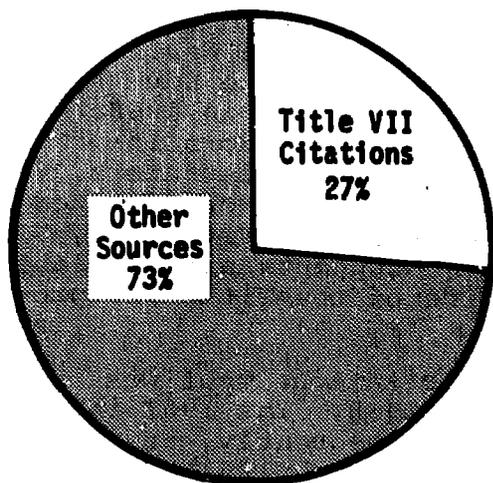
Review of Educational Research,
April, 1962
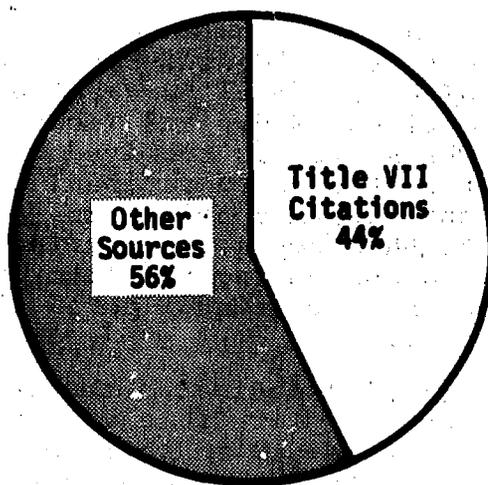
Review of Educational Research,
April, 1968
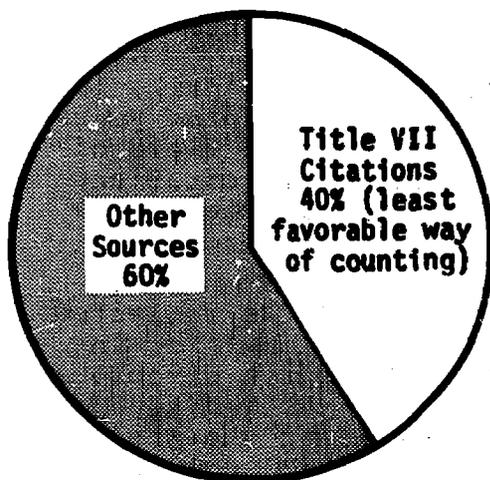
Research in Instructional Television
and Film, by Reid and MacLennan,
1965
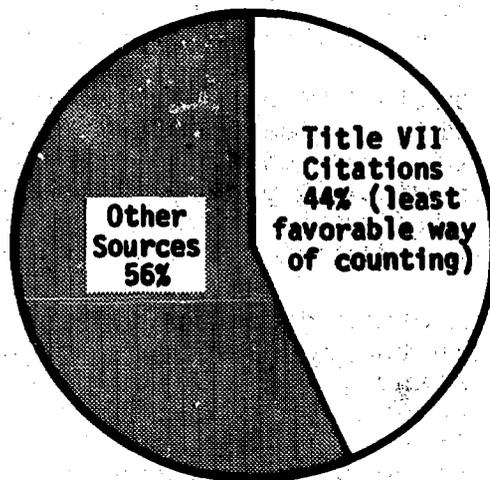
Chapter on "Mass Communication and
Educational Media," by Lumsdaine
and May, in Annual Review of
Psychology, 1965

Fig. 1.
Proportion of Title VII Research Reports Among Papers And Books
Worth reviewing in Reviews of Research on Instructional Media
And Technology

KRAUS, SIDNEY, "Modifying ... Change as a Function of the Race of the Communicator." *AV Communication Review* ... January-February ...

LEVONIAN, EDWARD, "The Use of Film in Opinion Measurement." *AV Communication Review* 10: 250-54, July-August ...

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MITZEL, HAROLD E. "Teacher Effectiveness." *Encyclopedia of Educational Research*, Third edition. (Edited by Chester W. Harris.) New York: Macmillan Co., 1960.

PAULSON, CASPER F. *An Examination of the Structure and Effectiveness of Slide-Tapes Produced by Rational Analysis and Self-Sequencing Techniques*. U.S. Office of Education, NDEA Title VII Project No. 5-0952. Monmouth: Teaching Research Division, Oregon State System of Higher Education, June 1967. 30 pp. (a)

PAULSON, CASPER F. "Specifying Behavioral Objectives." *National Research Training Institute Manual for Participants in Research Development (CORD) Projects*. Monmouth: Teaching Research Division, Oregon State System of Higher Education, August 1967. Part II, pp. 1-13. (b)

SCHERMER, HENRY D.; BRAND, JAMES H.; and SIMMONS, HELEN. *Motion Pictures as Test Stimuli: An Application of New Media to the Prediction of Complex Behavior*. U.S. Office of Education, NDEA Title VII Project No. 971. Monmouth: Teaching Research Division, December 1964. 465 pp.

SCHERER, GEORGE A. C. *Extended Classroom Experimentation with Varied Sequencing of the Four Skills in German Instruction*. U.S. Office of Education, NDEA Title VI Project No. SAE-8823. Boulder: University of Colorado, March 1965. 270 pp.

SEIBERT, WARREN F., and SNOW, RICHARD E. "Cine-Psychometry." *AV Communication Review* 13: 140-58; Summer 1965.

SMITH, Hugh M. and CLIMAN, Marguerite. *The Viewing of Oneself Performing Selected Motor Skills in Motion Pictures and Its Effect upon the Expressed Concept of Self in Movement*. U.S. Office of Education, NDEA Title VII Project No. ... Los Angeles: University of California, August 1961. ...

SMITH, M. DANIEL. *The Interaction of Words and Graphic Symbols, Investigated via a Programed Sequence of Concept Formation Experiences Related to Vector Spaces*. U.S. Office of Education, NDEA Title VII Project No. 5-0966. Richmond, Ind.: Earlham College, 1967. 29 pp.

SMITH, PHILIP D. *Knowledge of Results and Continuity of Various Techniques in Presenting a Filmstrip as Factors in Immediate Learning and Retention*. Office of Education, NDEA Title VII Project No. 719. Greenville, S.C.: School of Education, Bob Jones University, 1964. 234 pp.

SMITH, R. G. *The Design of Instructional Systems*. Technical Report No. 66-18. Alexandria, Va.: Human Resources Research Office, George Washington University (300 North Washington St.), November 1966. 85 pp.

STAKE, ROBERT E., and SYDNEY DOUGLAS D. *Activity Level and Learning Effectiveness*. U.S. Office of Education, NDEA Title VII Project No. 753. Lincoln: University of Nebraska, March 1964. 95 pp.

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Fig. 2. Density of Title VII citations on one page of the April, 1968 issue of the *Review of Educational Research* (circled=direct link, X=indirect link).

Some reflection of Title VII's ability to attract new people into the field is indicated by the number of directors first appearing in 1968 (see Figure 3).

The April 1968 issue of *Review of Educational Research* carried the names of 99 directors or co-directors of Title VII projects which had not previously been represented. The April 1962 issue carried 28 directors who did not appear in 1968. Appearing in both the 1962 and 1968 issues were 39 directors.

1968 issue only					
1962 only					
1962 and 1968					

20   40   60   80   100

Fig. 3.   Title VII directors or co-directors appearing in *Review of Educational Research*.
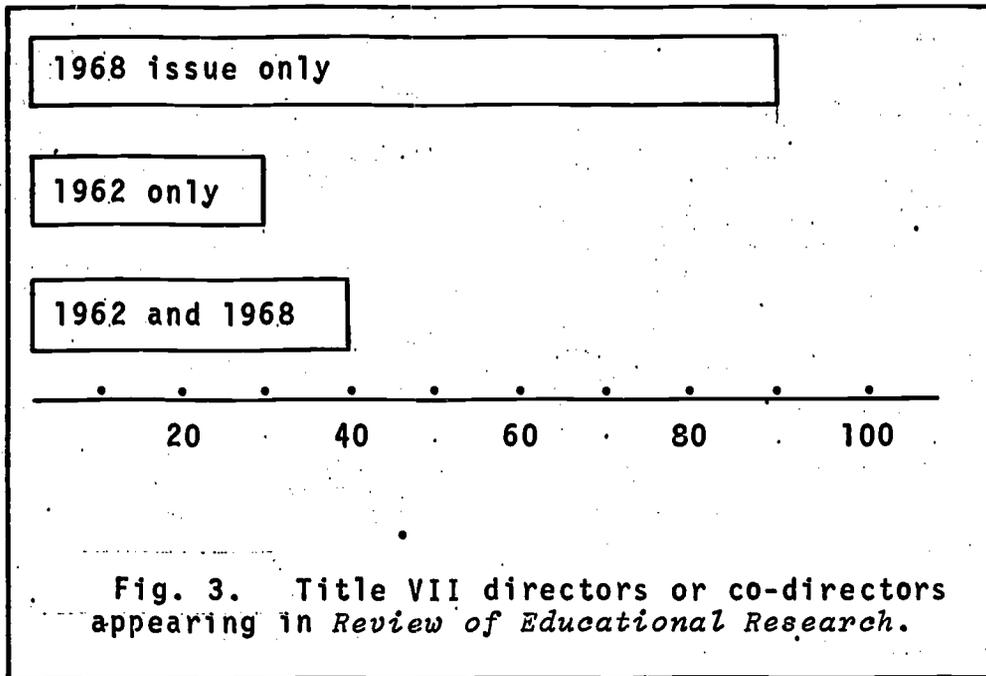
Consequently, it would appear that the outcomes of Title VII projects were "highly visible" in this "medium-band" publication, both in 1962 and 1968, and that, as evidenced by this one publication, they had the potential for implementation by the educational research community.

The April 1968 *Review of Educational Research*, which drew so heavily on Title VII sources, was about the best received of the last cycle of 15 *RER* topics (from June 1965 through June 1968), as reported in a recent study by Linda Harris. This judgment by the *RER* readership would tend to amplify the "value" magnitude of the Title VII citations.

"Narrow-Band" Analyses

One revealing way to measure the impact of Title VII on scholarly production in educational media and technology is to consider what publications in educational media and technology that appeared during the active years of Title VII were considered worth reviewing or summarizing   competent scholars in the field. We have therefore examined

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two such scholarly reviews of the field that appeared in the middle 1960's:

> Reid, J. C. and MacLennan, D. W. *Research in Instructional Television and Film* (completed at the beginning of 1965, but published in 1967 by the U. S. Government Printing Office, Washington, D. C., Catalog No. FS 5.234:34041).

> Lumsdaine, A. A. and May, M. A. "Mass Communication and Educational Media" (completed at the end of 1964, and published in the *Annual Review of Psychology*, Palo Alto, California, 1965, pp. 475-534).

It would be expected that the proportion of Title VII citations would be somewhat higher than in the case of learned journals because these reviews would not be limited to printed materials. They would also include monographs and reports circulated in advance of publication. Even allowing for this, however, the results leave no doubt of how leading scholars in the field felt about the importance of Title VII research. In the Reid and MacLennan review volume, a minimum of 40 percent and a maximum of 53 percent (depending on what titles were excluded as either outside the specified limits or else irrelevant to the subject) were examples of Title VII research. In the Lumsdaine-May review, a minimum of 44, or a maximum of 49 percent of the report (depending, again, on what was excluded), were the results of both topical and financial connections to Title VII research.

In the case of the Reid-MacLennan book, we faced the problem of what to do with 43 post-1959 dissertations, which had been summarized from *Dissertation Abstracts* and for which we were unable, in the time at hand, to ascertain whether they were or were not related to Title VII grants or contracts. The students who did the dissertations, of course, would not appear as principal investigators on a Title VII proposal, and therefore could not be checked against a list of Title VII projects. Some of the dissertations were known to us to have been written in connection with a Title VII project, but rather than guess at how many were and how many were not, we excluded the dissertations. However, we also figured the proportion of Title VII origins assuming that none of the dissertations came from Title VII projects (see Figure 1).

The Lumsdaine-May review contained a negligible number of post-1959 dissertations (4), but presented several other coding problems.

For one thing, it was expected to cover "mass communication" as well as "educational media," and therefore included a certain number of titles (such as Joseph Klapper's book on *The Effects of Mass Communication*, and Kraus' book on *The Great Debates*) which had no direct relationship to educational media. We excluded these.

The most troublesome problem was the presence in the Lumsdaine-May review of 20 papers, listed individually and constituting almost the entire contents of a volume of collected studies entitled *Student Response in Programmed Instruction*. This important volume was edited by Lumsdaine, and published in 1961, but it was made up almost entirely of studies done on Air Force funds in the early or middle 1950's. Should these 20 papers be considered along with other work published after 1959? We figured it both ways, with and without the 20 papers in the basic sample. The difference was about 5 percent in proportion of Title VII items, such as Figure 1 shows.

Finally, we found three papers in the Reid-MacLennan volume, and four in the Lumsdaine-May review, which could not be coded without retrieving some essential item of information that was not available to us and could not be found in the time at hand. We excluded these.

To sum up, when the exclusions were made, we had 124 items as a basic sample from the Reid-MacLennan volume (167 if the dissertations were included), and 210 from the Lumsdaine-May review (230 if the papers from *Student Response* were included), all published between the beginning of 1960 and the end of 1964. It was these samples that we examined for possible origins in Title VII.

We must be alert to possible error and to difference of opinion on the distribution of items into categories. Nevertheless, the error in coding is more likely to be in favor of than against Title VII, because of the difficulty in tracing down relationships between published titles and project titles. As for the problem of distributing items into categories, we have tried to say exactly what we did, and in the case of the two most doubtful decisions (dissertations in Reid-MacLennan, *Student Response* papers in Lumsdaine-May) we have figured it both ways.

With these caveats, then, we can say that approximately half of all the educational media items, published between the beginning of 1960 and the end of 1964 (which four reputable scholars felt were worthwhile summarizing or reviewing for their colleagues), originated in Title VII projects.

It is necessary to ask why these rather impressive results
are so different from results obtained from the "wide-band"
analysis. One possible reason is that they were measuring
rather different things. For example:

1. Such large numbers of citations were dealt
    with in the "wide-band" analysis that it was
    difficult to look much beyond author and title.
    Authors are notoriously lax about giving credit
    to research grants in their journal articles,
    and article titles frequently do not accord
    with Title VII project titles.

2. Despite all the advantages of a computer in
    being able to handle great masses of material,
    sometimes there are advantages in a problem
    of working directly with the data. The human
    computer has certain information stored and
    can make certain adaptations that the IBM
    version usually does not or cannot. For
    instance, it was known to us that certain
    authors were at certain universities while
    doing the research they reported, and it was
    therefore possible to look farther into Title
    VII records in order to find out whether the
    author had been working on a Title VII
    contract at a certain university, even
    though he was not the principal investigator.
    Furthermore, when a title did not quite
    agree with the contract title as listed by
    the Office of Education, it was possible
    to read the abstracts to find out whether
    this was indeed the same Title VII project.
    Furthermore, it would be extremely hard,
    if not impossible, for a computer to
    identify and separate out items such as
    we eliminated from the Lumsdaine-May list--
    that is, items that dealt with general
    communication or were textbooks, reviews
    of earlier Title VII reports, or public
    addresses, rather than research products.

Thus, it is probable that these results represent at once
a somewhat higher proportion of identification of Title VII
origins, and also samples that are more likely to contain
Title VII reports because they are restricted to experts'
judgments of what is worthwhile in the literature of
educational media.

CONVENTION PROGRAM REVIEW

One way in which dissemination of information about projects funded under programs such as Title VII occurs is through the annual convention meetings of national professional associations. Researchers, teachers, administrators, and other professionals convene and exchange information of current interest among themselves and with others who attend.

To review these dissemination activities and to observe any significant trends, the convention programs of four organizations were examined: the American Psychological Association (APA); the American Association of School Administrators (AASA); the American Educational Research Association (AERA); and the Department of Audiovisual Instruction, National Education Association (DAVI). The names of 529 Title VII project directors and associates were matched against eleven years of annual convention programs for DAVI, eleven years of AERA, ten years of APA, and eleven years of AASA, for the years 1959 through 1969.

The names of 225 of the 529 Title VII project-related persons appeared in the programs of these organizations, either during the time or shortly after they were associated with a Title VII project. Title VII project personnel whose names appeared in meeting participation lists before their Title VII activity, were not counted.

It was found that, with the exception of DAVI, the proportion of convention sessions devoted to instructional media was very small--2.5 percent for APA, and 3.6 percent for AAAS and AERA. The number of Title VII project directors among speakers at the conventions ranged from 1 percent for AAAS to 7 percent for DAVI. The percentage of papers directly acknowledging support from Title VII was miniscule. It must be remembered, however, that relatively few papers acknowledged their sources. A comparison of titles demonstrates that during these years at least 42 papers definitely reporting Title VII research were heard at DAVI conventions, 36 at APA, 26 at AERA, and 9 at AAAS.

As might have been expected, the peak of Title VII's visibility at the meetings of the learned societies came in the middle 1960's when the largest number of Title VII research projects were being completed. The number of sessions devoted to media at both AAAS and AERA meetings was significantly greater after 1966, however, and this may be an indirect effect on the increased visibility given to problems related to educational technology by Title VII.
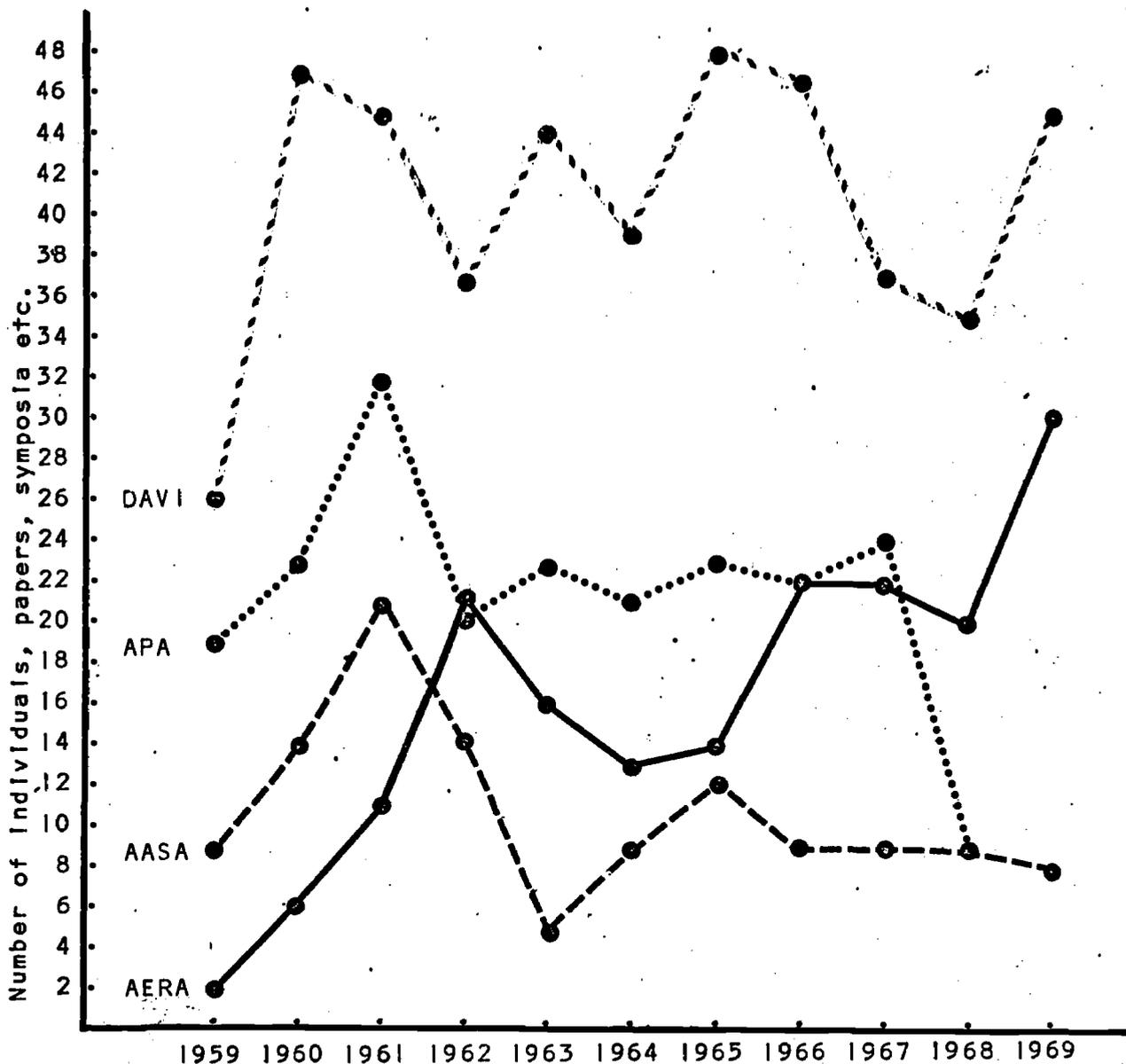
Fig. 1. General participation of Title VII personnel.

Figure 1 compares the number of reports given by Title VII participants for each organization on a year-by-year basis. In all, 122 out of the 225 persons who were involved with Title VII projects and attended the conventions were there for the purpose of giving a report. They either read a paper or took an active role in a symposium directly related to the exact topic of their Title VII project. While other participants from the total 225 project participants were also active in the areas of their recognized competencies--they chaired meetings or were officials--there is direct evidence that Title VII projects were discussed only by individuals from the group of 122 people.

Figure 2 shows that the peaks of AERA, APA, and DAVI activity
for 1965 or 1966 correspond to years in which more Title VII
projects were in progress. Thus, the more projects in prog-
ress, the more reports were given. Over the period covered,
APA heard a total of 36 reports, DAVI heard 42, whereas AERA
and AASA heard 26 and 9, respectively.
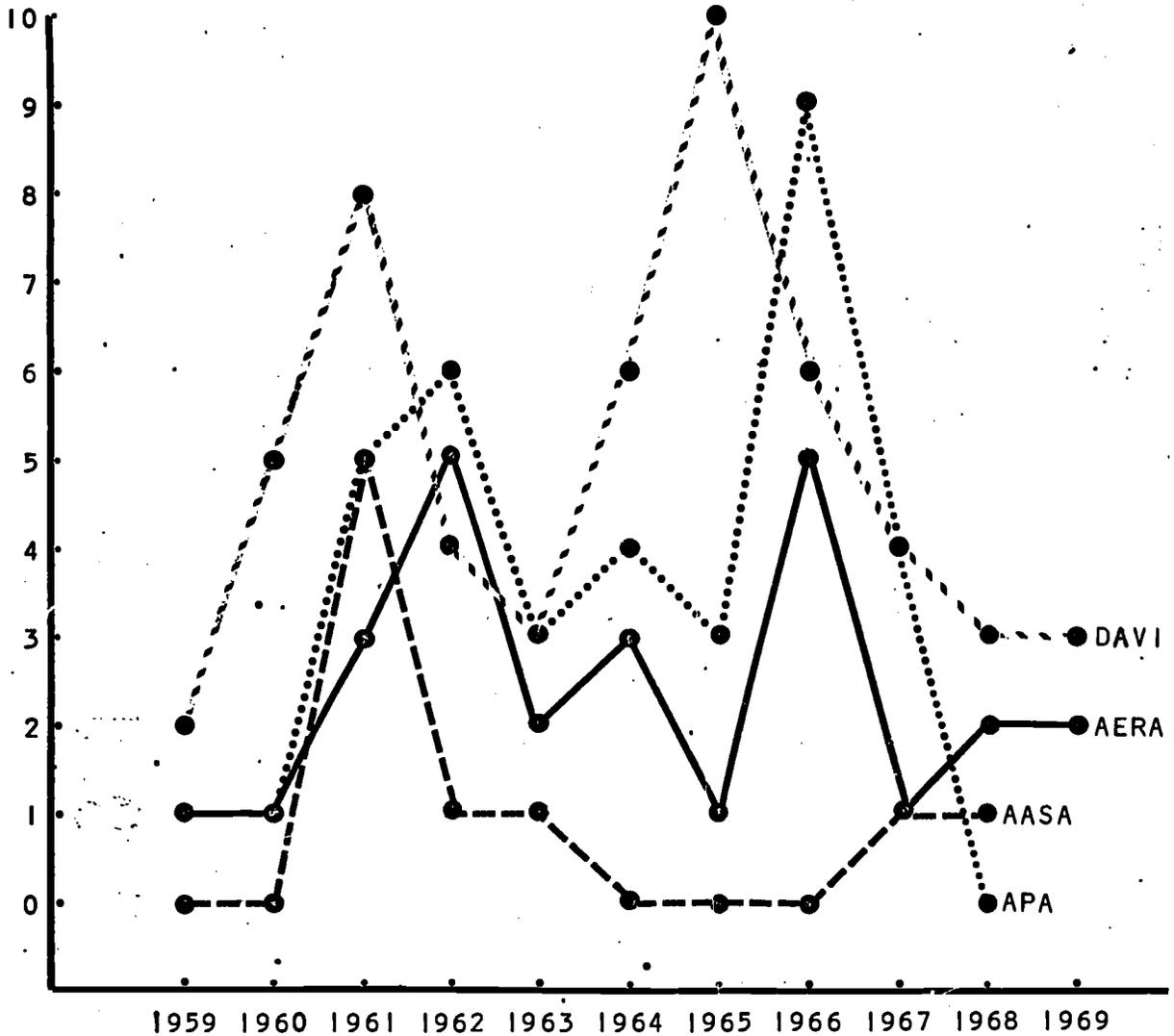
Fig. 2. Title VII reports presented.

A distinctly noteworthy, though limited, amount of information
about Title VII projects apparently was disseminated through
these professional groups. While it was not an overwhelmingly
large effort, at least 122 people did directly communicate
their findings and 103 others were available to relay
information.

In addition, media and media-related topics have gradually
gained importance on these convention programs. Thus,
knowledge about Title VII activities and the application
of that knowledge did contribute to some degree tc the
advance of educational progress, and did so through the
meetings of these national associations.

METHODOLOGY OF RESEARCH STUDIES

FUNDED UNDER TITLE VII A

For the purposes of the present analysis, it was hypothesized
that the influx of funds from Title VII A into the area of
educational media research would result in research of in-
creasingly higher methodological quality. The reason for
this would be that funding attracted better research talent
and facilitated the implementation of more elaborate research
approaches. The social science methodology of studies funded
later in the period would generally be superior to the method-
ology of earlier studies. To test this hypothesis a critical
analysis of the methodology of studies funded by Title VII A
during its ten-year period was conducted.

During the life of Title VII, approximately 230 data produc-
ing research studies were funded under Title VII A. To con-
duct a critical analysis of the methodology of these studies,
a manageable sample of about 80 studies was drawn, approxi-
mately one-third of the total. Before drawing the sample,
the population of studies was stratified by the quality of
the institution where it was conducted, by date of publi-
cation, and by type--experimental or survey. Institutions
were classified into high and low quality categories on the
basis of Berelson's 1960 ratings.

At each stage in the collection and analysis of data, "good"
methodology is defined as a reasonable attempt to control
irrelevant sources of variance and a reasonable attempt to
achieve accurate measurement of relevant sources of variance.
Whether an attempt is reasonable or not depends in certain
instances upon the nature of the variable and the conditions
under which it is measured. Although a critical analysis of
methodology is inherently subjective, an attempt was made to
avoid the extremes in this analysis. An analysis guide was
developed and reviewed by colleagues. It was then applied
by one individual with another person conducting periodic
"spot checking" for accurate application. No claim is made
that the research methodology of studies funded under Title
VII A is any better or any worse than social science method-
ology in any other area. An attempt was made to confine the
analysis to the simple question of whether, in relation to
itself, the methodology became better or worse during the
funding period.

In general, the quality of the methodology remained the same. The ratio of good methodological qualities to bad was about the same at the end as it was at the beginning. Of course, certain improvement trends were noted. Although none of the trends were overwhelming, the mere existence of some improvement indicates that more general methodological improvement might have become evident had a longer period of time been involved. Perhaps ten years is too short a period for funding to have a measuarable effect on research methodology.

Because relatively few studies were published during the early years of the Title VII period, the first three years were grouped into one time category, and the last three years into another. Two middle categories consisted of two years each. The sample was randomly selected within the stratification categories. The methodology of each study was carefully examined, and then a methodological abstract written in accordance with a standard outline format. (see Table 1 below)

TABLE 1
OUTLINE--BASIS OF METHODOLOGICAL ABSTRACTS

I. Identifying Information
    a. author's name
    b. author's affiliation
    c. geographic location of affiliation
    d. date of study publication

II. Stated Objective of the Study
    a. policy
        --evaluation of a particular instrument
        --comparison of two instruments
        --diagnostic evaluation
        --evaluation of a class of instruments
    b. science--hypothesis testing and theory building

III. Variables
    a. control variables
        --individual demographic variables
        --individual psychological variables
        --group demographic variables
        --group psychological variables
        --study procedures used for control purposes
    b. study variables
        --number of agent variables
    c. replication present as a variable
    d. time present as a variable

IV. Sample
    a.   definition of population
    b.   sampling unit
           --individual
           --group
               --co-variance analysis present
               --matching
               --stratification
    c.   selection of unit
           --random
           --accidental
           --representative
    d.   assignment to group
           --random
           --accidental
           --representative
    e.   assignment of group to experimental condition
           --random
           --accidental
           --representative
    f.   sample size
           --total sample
           --number of groups
           --approximate number per group
           --minimum group size
           --reason for variance in group size
    g.   subject matter sampled
    h.   sample reliability and validity checks,
         number and type

V. Data Collection
    a.   data collection setting
           --lab experimental
           --field experimental
           --field natural
    b.   study design
           --experimental--Campbell and Stanley category
               --complete or incomplete application of design
               --modifications and elaborations present
           --survey
               --mail
               --telephone
               --personal interview
    c.   instrument
           --single
           --obtrusive
           --test, observation, questionnaire or interview
           --development
               --pre-test, sample size of pre-test
               --validity and reliability checks
    d.   single or multiple time points

VI. Analysis of Data
     a. unit of analysis
         --individual
         --group
     b. coding
         --type
         --reliability checks
     c. statistics
         --types
         --single or multiple criterion measures
         --conditions of criterion test adequately stated
     d. interpretation
         --adequate discussion of alternate hypothesis
         --proper discussion of null hypothesis
     e. validity checks on final results

During the analysis, stratification by institutional quality
proved to be a pointless distinction, and is not discussed.
The quality of a study seems to depend more upon the indiv-
idual researchers and the nature of the problem studied than
upon the institution where it was done. Most studies were
conducted at universities, while a few were conducted by
nonprofit research corporations and research agencies
affiliated with public education organizations. The studies
included in the sample came from institutions in 26 states.
The greatest number were conducted by institutions located
in Pennsylvania, followed by Indiana, California and Illinois.
Most of the studies listed only one author. Two author stud-
ies were the next most common, followed by three author stud-
ies. There were very few four author studies.

Most of the studies introduced themselves with a statement
of purpose. Statements of purpose were classified either as
policy or science-oriented. Less than 20 percent were
science-oriented where hypothesis testing and theory building
were undertaken. Most stated their purpose exclusively in
policy terms (for example: evaluation of a particular instru-
ment, comparison of two instruments, diagnostic evaluation).
Most studies attempted to evaluate a particular instrument
and stated this as their only goal. These studies were con-
ducted to see whether a particular teaching machine program
was effective, or whether a particular film could teach
effectively.

Policy research is more practical in a particular situation,
but this specialization limits application. For example,
instead of attempting to answer the more general "science"
questions of how and why television is effective in teaching,
policy studies tended to limit their purpose to a specific

application. This results in the somewhat silly spectacle
of a study proving television is effective in teaching chem-
istry, followed by a study proving television is effective
in teaching driver's training, and so on. Policy orientat-
ions remained dominant during the entire ten-year period stud-
ied, and there was no detectable increase in science-oriented
studies.

Aside from their stated purpose, studies were also rated
on whether or not they attempted to sample subject matter.
Even with a stated policy purpose of evaluating a particular
instrument, the potential of generalizing from the assess-
ment was increased if this instrument were evaluated in a
number of subject areas. Some studies did attempt to include
a sample of subject matters as part of their research design,
but these studies were relatively few and their numbers did
not increase as the years passed.

Trends are discernible, however, in the sampling procedures
that were employed to select objects for study. In the
first time period there was heavier use of intact groups,
which were selected on an accidental basis, and then assigned
to treatment conditions on an accidental or representative
basis. A selection is accidental when the researcher has
little control over the process; for example, when he has
to depend upon volunteers and accept all available volunteers.
Selection is representative when the researcher attempts to
ascertain the qualities of the units in his population or
sample, and select or assign on that basis.

Although individuals rather than groups were used as the
sampling unit during the funding period, there was a pre-
dominant dependence upon accidental selection of the samp-
ling unit. This trend in units was accompanied by an increase
during each period in the cases in which assignment to exper-
imental conditions was done on a random basis. This trend
toward an increase in the use of random assignment indicates
methodological improvement. Some of the bias introduced by
having to depend upon units selected accidentally can be
eliminated when the unit is assigned to treatment groups on
a random basis.

In spite of the trend away from accidental selection, the
dependence upon this "approach" throughout the ten-year per-
iod remains a problem, however, particularly when it is noted
that reliability and validity checks of the sample were rel-
atively rare, and increased in frequency only slightly.
When a researcher cannot select his unit on a random basis,
he should at least check to see how representative it is of
the population after he has acquired it accidentally. The

failure to check representation is inexcusable when populations of students are commonly involved, because data archives usually are available for the whole population and can be used to make comparative checks. In many studies these archives were used to check the comparability of treatment groups without bothering to check the sample against the population. In most studies examined, the reliability and validity of the sample were assumed.

After the sample is selected, the collection of the data begins. The data collection setting of the studies and most of the studies were classified as field experiments. There was an interesting trend for laboratory experiments to increase in later years. There were almost no laboratory experiments in the first period, and few in the second, but in the third and fourth there were almost as many laboratory experiments as field experiments. This represents an attempt by researchers to achieve greater control. In a field experiment the study is necessarily constrained by being made part of an ongoing learning situation, while in the laboratory the experimenter's purposes are paramount.

Research designs employed in the data collection were categorized on the basis of the classification in Campbell and Stanley's monograph (1963). On the basis of this categoriation it became obvious that there was little variation in the basic research design of the studies examined. The vast majority could be categorized as "pretest-posttest control group design," number four in Campbell and Stanley's listing. The next most popular, but far fewer in number, was the "posttest-only control group design," Campbell and Stanley's number six. There were only two instances in which the highly recommended Solomon four group design was employed (Campbell and Stanley's number five). No trends over time in type of design usage were evident.

Although most studies used the basic "pretest-posttest control group" research design, few used it without some elaboration. Instead of just one treatment group and one control group, most studies had multiple treatment groups, and many had multiple control groups. In about 30 percent of the studies in each time period, multiple groups were arranged to provide some degree of internal replication. This is an excellent design feature which can be used in reliability. There was no trend toward an increased use of this feature, however.

The instrument employed in the pretests and posttests was classified according to whether it was standard, or was constructed by the researcher. Standard instruments were most

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commonly the general intelligence and ability tests used to measure students, but included any instrument that had had some general circulation and application. Constructed instruments were those devised by the researcher for application in the particular study. There was a weak tendency for standard instruments to be employed more frequently than constructed ones in research conducted during the first time period. In succeeding time periods, relatively fewer standard instruments were used, while more constructed ones were used.

The increase in researcher constructed instruments was accompanied by slight increases in the number of reports of pretesting of instruments, and reliability and validity checks of instruments. Ideally, no instrument should be put into use unless it has been pretested, and its reliability and validity should always be checked after use. Unfortunately, there are studies in all of the time periods that fail to report these precautions, and later periods are no better than early ones.

In even the most perfect studies, several alternative explanations for the obtained results usually compete with the reason the researcher thinks is most relevant. The extent to which a researcher gives consideration to these alternative hypotheses and is able to demolish them in his discussion of results, is an indication of the methodological quality of the study. No study is perfect, and no study should accept its results without giving some attention to alternative hypotheses. A researcher who fails to to give consideration to alternative hypotheses is probably assuming away some threats to the validity of his findings. Discussion of alternative hypotheses is skimpy or absent in some studies conducted in later time periods as well as in some conducted during early years. There is no trend toward improvement.

Another problem that is not major, but that does persist in all of the time periods, is the correct interpretation of the null hypothesis. Under strict statistical theory, when the null hypothesis is confirmed this can only be interpreted as an inconclusive finding. It cannot be taken as positive evidence of no difference between groups or treatments. The null hypothesis is incorrectly interpreted when it is taken as evidence that two treatments are equally effective, as, for example, when it is taken to mean that television is as effective as the method of teaching with which it was compared. This abuse is not common, but it occurs in late as well as early studies.

If one can make a claim for the influence of Title VII on
methodology, it must rest on the conclusions of observers
that the Title VII staff and committee, insisting from the
first on high standards of research technique, did hold up
a high standard for the field and especially for young re-
searchers entering it.

THE IMPACT OF TITLE VII ON FIVE

EDUCATIONAL MEDIA

Between 1958 and 1968, the utilization of media in
education gave rise to at least five promising new edu-
cational techniques: microteaching, dial access systems,
flexible scheduling, 8 mm single concept film and closed-
circuit television. The purpose of this investigation was
to survey the numerous research, experimentation, and dis-
semination efforts associated with each of these techniques
and to ascertain the precise role, if any, that Title VII
played in their development.

Definition of Terms

Microteaching refers to a training concept which can be applied
at various pre-service and in-service stages in the education
and training of teachers and other professional personnel.[1]
Simply stated, microteaching is a scaled-down teaching en-
counter. It provides teachers with a practice setting for
instruction in which the normal complexities of the classroom
are reduced and in which the teacher receives a great deal
of immediate feedback and focused supervision on his perfor-
mance. To minimize the complexity of the normal teaching
encounter, several dimensions are limited: class size, scope
of content, and length of time. In microteaching, the teacher
instructs three to five students, instead of the normal 25 to
30, for five to ten minutes. Gradually, both pupil- and time-
modules are increased. During this teaching encounter, the
teacher concentrates on a specific training skill or technique
and utilizes several sources of feedback, such as the super-
visor, the students, the teacher's own reflection, and the
playback of videotape recordings of his performance. All
this feedback can be immediately translated into practice
when the teacher trainee re-teaches shortly after a critique
conference.

The process of centrally storing and electronically trans-
mitting various types of information from remote locations
has been designated by various labels, e.g., dial access, or
remote access, information storage and retrieval. Dial
access systems include a telephone type dial selection,
push button selection, digital selection, or rotary switch

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[1]Allen and Ryan, *Microteaching*, 1969.

selection device.[2] Simply stated, a dial access system
is an audiovisual technique which in its finally expanded
form should permit an almost unlimited resource of learning
materials to be electronically searched and the selected
materials delivered to almost any destination by dialing
a set of catalogued precoded numbers or letters. Dial
access systems are designed to provide instant connection
to comprehensive libraries of both print and nonprint
materials that may be miles in distance from the student
in his school. The information is provided upon a tele-
vision tube, flexowriter, earphones or vacuum pipe.

Individual students have access to such materials as motion
pictures, filmstrips, slides, taped ETV presentations, re-
corded information, and any classroom lessons that are audio
or video recorded. A student orders from a central storage-
retrieval center the materials he wants to view or hear.
The student dials a coded program number, and the material
is presented in a student carrel. This system adds a new
dimension to individualized instruction and provides a
multi-sensory dimension to the learning process.

Dial access systems also are used as a dissemination service
to provide educators and researchers with information on the
latest teaching innovations and research ideas, current
thinking about educational problems, and up-to-the-minute
information on innovations occurring on the educational
scene.

Flexible scheduling is a way of arranging units of teaching
staff, instructional content, facilities, students, time,
and instructional needs in a flexible, and hence more effec-
tive, manner. Such programs are often undertaken with the
assistance of computers because of the voluminous data and
alternatives that must be considered, the technique specifies
the place and time that each class will meet, the students
who are to constitute the class, and the teacher or teachers
who are to meet with the class. Through such scheduling,
educators seek to establish the best possible climate for
learning.

The flexible scheduling technique is based on a very different
set of assumptions from the traditional schedule. At the
heart of the plan is a complete reorganization of the school
day into 20- or 30-minute periods, instead of 40- or 50-minute
ones. This enables school officials to combine two or more

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[2]This exposition of the use of dial access systems is
derived from the May, 1967 issue of *Audiovisual Instruction*.

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periods together for subjects that require much classroom work, or to use the single, much shorter, periods for subjects that do not. In terms of time, each day's order need not be like that of any other day. Teaching assignments require varying amounts of time and,hence the periods assigned should also vary. Group sizes also vary.

Flexible scheduling, however, should not be viewed as merely a game of time and group-size distribution. What happens within the schedule is a major determinant of the quality of the school's instruction. Concurrent with this approach is the mandatory implication that there will be new instructional techniques and materials. Thus team teaching, increased use of technological media, carefully pre-planned building design, and new curricula must often be utilized extensively and effectively in the implementation of flexible scheduling.[3]

The 8 mm film format emerged on the educational scene a decade ago.[4] It has evolved from a traditional amateur home movie product to a medium of great potential for serving educational needs. One of the most significant features of 8 mm film is that insofar as the films and projection equipment are inexpensive and easy enough to operate, each student can view an individual program and the learner controls film movement instead of the instructor. Thus it is possible for the student to stop projection and examine a single frame, to reverse projection, to run the film in slow motion, to move from one area of illustration to another by changing films, or return the film. The student is able to view the film again and again, to see it in relation to another set of films, or in a different context. Furthermore, he usually can view the film at his own convenience, with small groups of his peers, or in quiet concentration. The effect upon the student of this kind of freedom of curiosity has interesting ramifications in terms of learning. If one assumes that the student is the best guide of what he wants to know, this format can increase the efficiency of his learning, bearing in mind that while the sequence of his learning is not rigidly structured in this type of approach, the films themselves are.

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[3]Appreciation is extended to the staff of Educational Coordinates, Inc., in Palo Alto, and the writings of Dwight Allen for the definitional framework of flexible scheduling.

[4]Factual information defining this concept is primarily taken from the *Educational Product Report* (December 1968 and January 1969).

The 8 mm film varies from other film formats in that in-house film production by the school staff and students is fairly easy to accomplish. The low cost of 8 mm equipment plus the automated nature of the cameras and projectors make it possible even for nursery school children to enjoy the experience of film-making. Film processing is usually available locally and is also fairly inexpensive.

Closed-circuit television (CCTV) programs are transmitted via cable, microwave or the new 2500 Megahertz Instructional Television Fixed Service (ITFS) exclusively to a particular audience with specially equipped TV receivers. There is relatively unlimited access to channels in the CCTV spectrum where as many as 12 different TV or audio programs can be simultaneously distributed. As long as it is not possible for unauthorized TV monitors to intercept and reproduce the programs or information being transmitted by a television system, the designation "closed-circuit" television holds.

Closed-circuit television systems range from the simple to the complex. Of special significance to education is the fact that up to five programs (five channels to each licensee) may be transmitted and received simultaneously in any given educational institution. This largely elimi-nates the major problem in previous educational utilization of television (open-circuit systems)--that of scheduling. The use of multiple channels opens up new scheduling possi-bilities more attuned to the needs of individual schools as well as creates the potential of broader offerings from which teachers and students can choose. Not only does this system permit a given school to receive and schedule several dif-ferent instructional programs at the same time, but the system also creates television channels in geographical areas where all the existing broadcast channels have been assigned.

This new service, however, is intended to supplement rather than replace the standard ETV broadcast service. Its presence merely suggests that a single educational television channel no longer suffices to handle adequately the many programming needs of the typical community. These needs range from in-school instruction of students to in-service education of teachers, adult training, and vocational education, out-of-school general information programs for children and adults, as well as communication and administrative uses within a given school or between schools, and/or between the schools and other community agencies.

Research Instrumentation

The examination of the impact of the five media was retro-
spective in nature and limited in both time and cost. Con-
sequently,traditional experimental and quasi-experimental
research techniques were not employed. Instead, this in-
vestigation has used what Eugene Webb, Donald Campbell,
and their associates define as a form of using "unobtrusive
measures"--namely, the search of archival records.[5]

The term "unobtrusive measures" in the context of archival
records refers to the examination and evaluation of data
periodically produced by someone other than the present
researcher for purposes other than those of the particular
investigation at hand. It can include such things as
administrative records, documents, diaries, journals,
budget ledgers, communication media (newspapers, magazines,
for example), and library collections of many types.
These data can be successfully utilized as a scientific
data source to form a running record or longitudinal study
when other data-collecting techniques do not prove feasible.
Besides the low cost of acquiring a massive amount of per-
tinent data in a reasonable time, one common advantage of
archival material is its nonreactivity. That is, although
there may be substantial errors in the material, it is not
usual to find masking or sensitivity because the producer
of the data knows he is being studied by some social sci-
entists or evaluators. These gains made the use of archives
most attractive for the purposes of this investigation.

Data-Collecting Procedures

Archival data for this investigation were secured from the
microfiche document collection in educational research at
the ERIC Clearinghouse on Educational Media and Technology
in the Institute for Communication Research of Stanford
University.

Thanks to an advanced computer system ("ERIC on Line")
developed by the Lockheed Missiles and Space Company and
presently in operation at Stanford under experimental funds
from the U. S. Office of Education, an exhaustive search
of the more than 15,000 educational research abstracts and
document citations presently in the ERIC collection could
be undertaken. This collection includes both federally
and nonfederally sponsored research efforts and is inclusive
of the years 1955 to 1970.

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[5]Webb, *et al.*, 1966.

For purposes of this investigation, the computer search of the ERIC document collection followed a systematic pattern of retrieving citations and abstracts according to ERIC Thesaurus index terms on subject area (*e.g.*, microteaching, teacher education, information systems); legislative authority or source of funding (*e.g.*, Title VII, Cooperative Research Act, Title II); date (1958 to 1960); and author.

Data Analysis

Each document citation and its abstract, which was taken from the computer printout, were carefully read for content and then checked for a listing of its particular legislative authority. These facts were then used by the investigator to determine whether a particular document was or was not the result of NDEA, Title VII funding. Projects were viewed only from the standpoint of what they could tell about the general picture of federal funding under Title VII. No effort was made to judge whether a specific project deserved to be sustained by federal funds. Specific breakdowns on federal monetary expenditures for the various exemplars were not indicated since the investigator had no way of collecting such data.

When the investigator found himself in doubt as to the proper categorization for a document, efforts were made to contact and query the principal investigator for that particular piece of research or a key individual knowledgeable about the development of that particular media (*e.g.*, Dwight Allen and the Stanford Center for Research and Development on Teaching regarding microteaching, or Louis Forsdale and his associates on 8 mm film). As a last recourse, documents having no clear identifying legislative authority were placed in a separate category (projects for which the legislative authority could not be determined).

Findings

The findings for the four ideational[6] exemplars--microteaching, dial access, flexible scheduling, and 8 mm single concept film--were described in detail in the Phase II report and are merely summarized here. The findings for the fifth exemplar, closed-circuit television, are presented here for the first time and thus are described in greater depth than the others.

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[6]Refers to new ideas or approaches for instruction.

The ERIC search generated 117, 276, 87, 6, and 288 document citations and abstracts respectively for microteaching, dial access, flexible scheduling, 8 mm single concept film and closed circuit television.

Microteaching

Of the 117 document citations generated as the composite data set for microteaching and related descriptor terms (such as videotaping, teacher training, in-service and pre-service teacher education, teaching techniques, and training techniques), only ten proved to be the result of Title VII efforts, and these were of limited consequence to the central focus of the research on the microteaching technique. The remaining 107 microteaching citations are primarily the result of funding from the Cooperative Research Act (PL 88-210); PL 88-10, Title III-Supplementary Centers and Services; and the Language Development Act, PL 85-864, Title VI. The Cooperative Research Authority and PL 88-10, Title III, are cited most often as the largest and/or the principal source of federal funding. On this basis, these two legislative sources appear to be most directly responsible for the success of microteaching.

Key individuals in the development and research aspects of the microteaching concept--such as Robert Bush and Dwight Allen--have written that financial support first came from nonfederal monies, principally from the Ford and Kettering Foundations. Later financial assistance for research, development, and utilization was primarily federal. Including the two chief federal sources mentioned above, federal monies for the continued development and dissemination of findings on microteaching are cited as coming from the Education Professions Development Act and the Multi-State Teacher Education Project.

To date, the most fertile years in the development of microteaching have been 1965-1968. In 1967, federal funding for microteaching and related areas reached its maximum level with the funding of 46 research projects.

Dial Access

Dial access, in combination with such related descriptor terms as man machine systems, language laboratories, information systems, storage-retrieval, auto-instructional methods, and resource centers, generated 276 document citations. Only 21 of these document citations are attributed to Title VII. Qualitatively, these 21 documents appear to be of limited consequence to the central thrust of existing research of

dial access systems. One possible exception is "State of
the Art of Dial Access Information Retrieval: Interim
Report on Library Research," by Gabriel Ofiesh at Catholic
University (1967).

Ofiesh's survey, along with a 1968 summary by Richard Naber,
stands out as one of the most comprehensive statements in
the small body of quality literature on dial access infor-
mation retrieval systems (DAIRS). Ofiesh's survey recommends
a computerized bank of information in specific areas of
education, such as educational technology. He undoubtedly
did not know that, at the time of his writing, the U. S.
Office of Education was considering plans for the ERIC
Clearinghouse system.

Dial access systems were first considered by Dr. F. Rand
Morton when he was on the faculty of the University of
California. With the support of representatives of the
Bell Telephone Company, he developed preliminary plans
for a prototype DAIRS. This support from the Bell Lab-
oratories was indicative of a trend which followed and
found commercial business firms such as Reeves Electronics
Corporation of Los Angeles, Litton Industries, Ampex, and
many others actively involved in the research, development,
and installation of DAIRS.

The chief sources of federal funds for these undertakings
have come from the Language Development Act, PL 85-864,
Title IV (total of 59 ERIC documents to its credit); the
Library Research and Development Authority, PL 89-320,
Title II, Part B (51 ERIC documents); and the Cooperative
Research Authority, PL 89-10, Title IV.

Flexible Scheduling

Flexible scheduling (FS) and its related descriptors
retrieved 87 document citations and abstracts, but only
three of these are attributed to NDEA, Title VII, efforts.
Here again, the significance of these three documents to
the overall development of this exemplar is minor.

Like microteaching, the innovative technique of flexible
scheduling was developed in a university research setting.
Most of the research, however, was undertaken in actual
schools in the western part of the United States, which
were experimenting with individualized instruction.

Initial financial support for experimentation with FS was
furnished by the Fund for the Advancement of Education of
the Ford Foundation. Later sources of funding were the

federal government under the Cooperative Research Act,
PL 89-10, Title IV, and Language Development Act, PL 85-864,
Title VI. From the standpoint of federal funding, FS appears
to have reached an all-record high, as far as quantity of
work is concerned, in 1967.

8 mm·Film

The ERIC computer retrieved six document citations and
abstracts concerning 8 mm film. None of these citations
are categorized as the end-product of·NDEA, Title VII
funding. And on this basis, the conclusion is reached
that NDEA, Title VII did not play a major role in the
development of 8 mm film. However, a review of past
efforts in 8 mm film implementation suggests that the
NDEA's overall efforts in film development and research
may well have established a climate for the later devel-
opment of 8 mm film in education. Sleeman and Crosswhite
support this assumption:

> "Significant advancements in film for classroom
> use came largely as a result of federally
> sponsored research and development under the
> National Defense Education Act of 1958. After
> Congress extended the Act for two years, the
> investment in film for classroom use increased
> 10 to 15 percent. It was reported at the
> National Audiovisual Convention in mid-1961
> that the federally sponsored research had
> resulted in a 30 percent increase in the
> sale of audiovisual equipment."[7]

The 8 mm film technique is not a relatively new medium,
for as Louis Forsdale (1962), an early user of 8 mm in
instruction, writes: "8 mm silent film has ... been
known since its introduction by Eastman Kodak for amateur
use in 1932." What was new in the 1960's was the commercial
reality of recording sound on the narrow 8 mm film format
and "refinements of film emulsions ... [which] made possible
increasingly better images in all dimensions of motion
pictures. The 8 mm film equipment itself was also consid-
erably improved ... particularly in the crucial area of
simplified projectors."

Developments such as these spurred the emergence of 8 mm
film as one of the most important educational media of the
1960's.

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[7]Sleeman and Crosswhite, 1968.

Industry was the first element of American society to
respond to the advantages of 8 mm sound film. Such com-
panies as the Ford Motor Company, the Do-All Manufacturing
Company, and the Caterpillar Company began to make 8 mm
films for use in their internal training and sales programs
in the late 60's.

In terms of federal funding, the 8 mm film movement reached
its greatest period of support in 1967 with the listing of
three research projects in the ERIC collection for that
year. Because of the small number of projects, no clearly-
defined source of funding can be pinpointed. To date,
Adult and Vocational Education, PL 88-210, has been respon-
sible for federal support of 8 mm film. A review of the
current issues of *Research in Education* suggests that the
8 mm film technique will continue to be an important area
for media research and development, particularly because
of its potential for instructing the culturally disadvantaged
child via individualized instruction.

Closed-Circuit Television

Whereas Title VII did not seem to provide much impetus to
research and experimentation for any of the first four
exemplars, it did apparently have a noticeable impact on
the development of closed-circuit television (CCTV) for
instructional purposes. The growth of CCTV has been steady
and consistent since the early 1950's,[8] when Michigan State
and a few other universities began experimenting with formal
televised work.[9] By 1963, Campion and Kelley[10] pinpointed
a total of 426 closed-circuit instructional television systems
in the United States: 266 in institutions of higher education;
98 in elementary and secondary schools; 47 in medical instal-
lations; 31 in dental institutions; and 20 in military in-
stallations. Five years later, Wigren, Ingle and Molenda[11]
poinpointed 717 of these installations, of which over half
were in elementary schools and the remainder were divided
among medical schools, military institutions, and colleges
and universities.

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[8]Campion and Kelley, 1963, p. 63.

[9]Murphy and Gross, 1966, p. 22.

[10]Campion and Kelley, 1963.

[11]Wigren, Ingle and Molenda, 1967.

The above achievements and proliferation of CCTV are
attributed both to grants from private foundations and
from government sources.[12] The Ford Foundation alone is
cited as having made grants in the neighborhood of $100
million. However, this includes all phases of educational
television as well as CCTV. Federal interest is first
indicated with the National Defense Education Act of 1958.
The Act, and its successive amendments, made close to $30
million available for research and demonstration projects.[13]
(Also see Foundations and Media Chapter.)

In the field of research, it definitely can be said that
Title VII of NDEA provided the main thrust in the study
and investigation of effective ways of adapting not only
closed-circuit television but educational television in
general. This conclusion is the result of an examination
of 288 document citations retrieved from the ERIC system.

Of the 288 document citations and abstracts retrieved, about
one-half (131 documents) specifically were concerned with
closed-circuit television, and the remaining 157 were related
to television in general--that is, commercial and noncommercial
open-circuit broadcasting. Of the 131 documents related to
CCTV, 75 were funded by Title VII of the NDEA (37 under Part
B and 38 under Part A); the remaining 56 documents are dis-
tributed among the Cooperative Research Act and miscellaneous
legislative authorities (see Figure 1). Most of these docu-
ments are of minor consequence with respect to CCTV. Of the
157 documents generated for the broader ERIC descriptor "tele-
vision," 88, or about two-thirds, were also funded by NDEA,
Title VII. These latter citations were not individually
studied in this report because the primary focus herein is
on CCTV. However, they are mentioned in passing to further
substantiate the conclusion that NDEA, Title VII, is largely
responsible for most of the research and demonstration efforts
in the field of instructional and educational television.[14]
The CCTV citations and their abstracts are listed in the
appendix of this report.

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[12]Murphy and Gross, 1966, p. 11.

[13]*Ibid.*, p. 67.

[14]In general, the term "educational television" or ETV
covers all noncommercial television. In usage, however,
ETV is sometimes applied more narrowly to cultural and
educational programs for at-home viewers in contrast to
"instructional television" or ITV, which is a term used
to describe formal school, college, or university in-
struction via television.

According to these documents, the most fertile years in the development of closed-circuit television were 1961 through 1963; a total of 41 documents were reported for this period. In 1961, federal funding for CCTV reached its maximum level with 16 documents being reported. This year was followed (as far as quantity is concerned) in 1963 with a total of 15 documents (see Figure 1).

Key individuals in the research aspects of CCTV included: Vernon Bronson, George Gropper, Wilbur Schramm, James Finn, and Arthur Lumsdaine.

A review of the individual CCTV documents suggests four principal types of research: 1) case studies on the use of CCTV for certain purposes in either schools or universities; 2) surveys or state-of-the-art reports on the number of installations and/or equipment inventory and/or audience measurement; 3) feasibility studies on the utilization of CCTV by itself or in combination with other media such as programmed instruction; and 4) experimental studies primarily focusing on the measurement of "effectiveness" in learning from CCTV compared with conventional instruction as well as experimentation with control groups and the use of student response and feedback variables. Also, the effects of varying the length of ITV program sequences were studied.

Among the general areas of interest in which CCTV was being applied are teacher education, medicine, dentistry, general health sciences, foreign languages, counseling and vocational education, science education and "how-to" instruction on TV and related media utilization for teachers.

Title VII's role was significant on several accounts. First, unlike the previous exemplars investigated, in the case of CCTV both Part A and Part B of Title VII are equally represented in the number of research projects undertaken (respectively, 37 and 38 citations). This is indicative of the spirit of Title VII which sought not only to undertake relevant research but to disseminate worthwhile findings into the schools where more effective media utilization could take place. And "dissemination" indeed was evident with CCTV. The word was spread via conferences, workshops, publications and demonstration projects. Judging from the types of research and dissemination efforts which followed in later years, the strategies developed in these conferences were taken to heart and undoubtedly contributed to a more enlightened use of Title VII resources.

This period also saw the development of exemplary and new uses of CCTV--such as the TEMP project in central Texas joining 11 universities in the sharing of faculty resources

LEGISLATIVE PROGRAM AREA

24 = Cooperative Research, PL 89-10, Title IV

56 = New Educational Media, PL 85-864, Title VII, Part A

64 = New Educational Media, PL 85-864, Title VII, Part B

95 = Other Office of Education Programs (Projects for which
the legislative authority cannot be determined are
included)

A. Sources of Federal Funding - N=131

Number of Research Document Citations
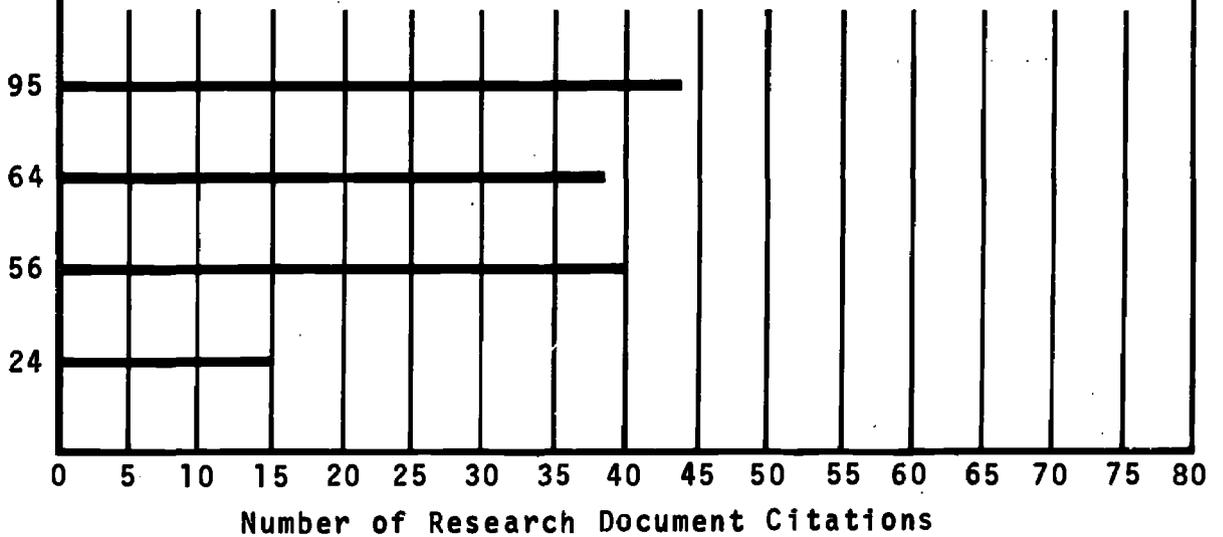
B. Major Periods of Federal Funding - N=75

Years

Number of Research Document Citations/Title VII
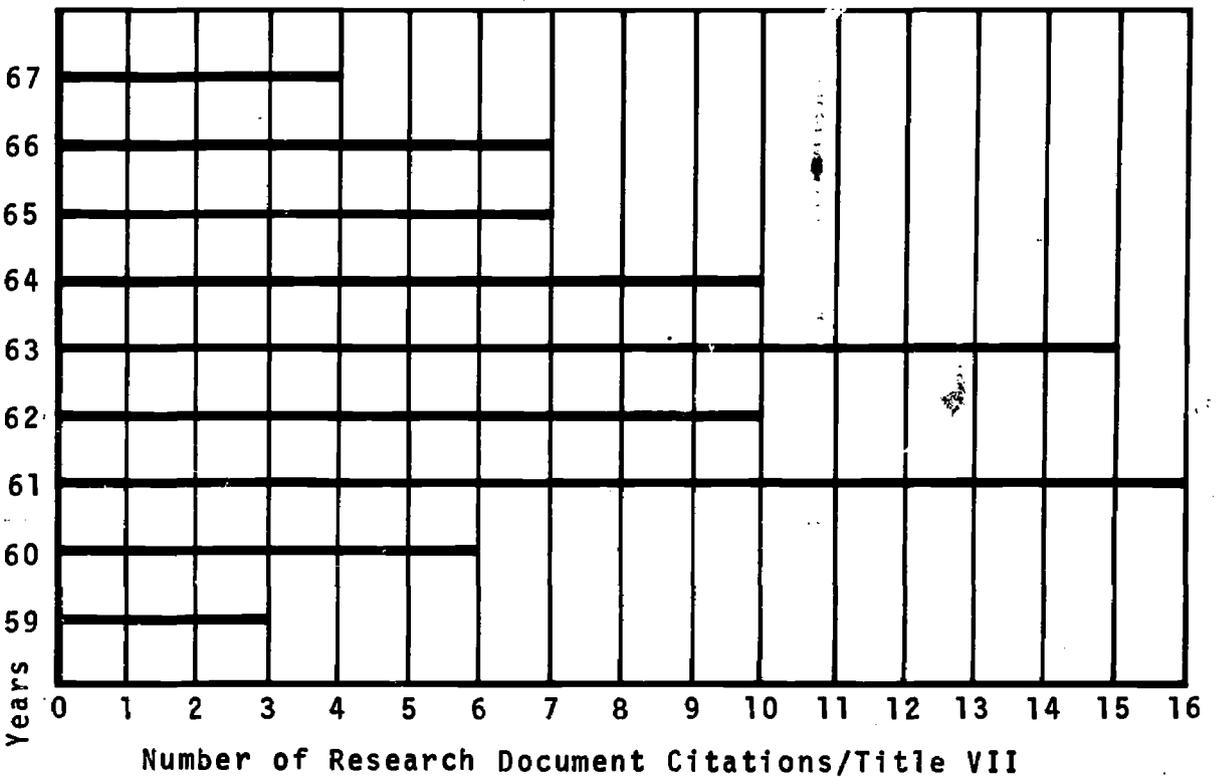
Fig.1. Growth and Development of Instructional CCTV

via one CCTV channel; the Airborne TV Project which has been cited as the forerunner of the idea of satellites in education; and the use of CCTV videotaping equipment for counseling and teacher training.

On the applied side, Title VII funding in CCTV generated a series of "how to" manuals which served to acquaint school administrators, teachers, media specialists, and school board members with information relevant to the planning of schools and the development of curricula which would more effectively profit from the use of instructional media.

Title VII efforts in CCTV also gave rise to the beginnings of "multimedia" instructional techniques which found educators attempting to prescribe more judiciously the use of media in combinations instead of favoring any one single medium as a "panacea" for the ills of education. From these efforts came the concern for learner variables and instructional theory and design,as well as increased sensitivity to the role of individual learning differences in the design of mediated instruction. Representative o᠆ this type of effort is the publication by Leslie Briggs, Robert Gagné and others entitled "Instructional Media--A Procedure for the Design of Multimedia Instruction, A Critical Review of Research, and Suggestions for Future Research."

Funded by the NDEA, Title VII, Part A, and undertaken through the auspices of the American Institutes for Research, Briggs and his associates developed a procedure whereby educational specialists could prepare the specifications for media in which various sequences of televised instruction would be programmed and developed. One implication of the study was that media research needed to be conducted for single experimental objectives representing various kinds of learning. This document is classified today by many educa᠆ ᠆nal practitioners as a classic effort in relating inst᠆ ᠆tional theory to the design of media systems. In its sugges ᠆ons for future research and practice, one finds what appears to be the basis for later studies involving techniques for media evaluation and applied research on psychological factors involved in mediated instruction.

Title VII funding of CCTV also was the source of studies on resistance to innovation and change which isolated factors contributing to successful media implementation and instructional development programs. Personal observation of functioning programs, demonstrations, professional journals, the continual flow of new information, and teachers' attitudes are cited as the important influences on the decision to employ a new educational technique such as instructional television.

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Observation of a functioning program reinforced by the
dissemination of information through professional journals
appears to be especially useful for acquainting school
personnel with innovations which require a radical change
in classroom pedagogy; e.g., television, language labora-
tories and programmed instruction.

As for teachers' attitudes, experience reports on instructional
television indicate, for the most part, that involvement and
in-service training are key elements in making classroom
teachers more receptive to instructional technology. If the
teacher can have a part in planning what is taught via the·
new media and what classroom activities are built around it,
and if he can be given help in learning his new role, he will
like these new media better and use them better. The research,
such as it is, backs up those conclusions.

Conclusions

This investigation has come full circle and if the ERIC data
sources herein investigated are correct, the conclusion is
that Title VII of the NDEA played a very limited role in the
research; development and/or dissemination efforts of either
microteaching, flexible scheduling, dial access, or the edu-
cational use of the 8 mm film format, but did have a consid-
erable effect on closed-circuit television.

Some exceptions and qualifying statements must accompany this
conclusion in the case of the first four exemplars. These
exceptions are primarily errors of omission. In such an
instance, the individual project directors were forgetful
and failed to specifically cite the source of legislative
funding for their projects.

The fact that so many documents listed neither legislative
funding authority nor date of publication may prove to be
a limiting factor in the confidence and degree of general-
ization warranted by the findings of this investigation.
It may well be that some documents in these categories
are Title VII efforts, but without an indicated legislative
authority, there is no systematic and objective way of
conclusively ascertaining these important data. Even an
inspection of a sample of the individual documents in
question (taken from the ERIC microfiche file and hard
copy library) proved to be of no avail. No specific
legislative authority, or in many instances publication
data, was cited other than the broad category of "U. S.
Office of Education."

In addition, although Title VII appears not to have occupied
center-stage in the development of the exemplars (micro-
teaching, dial access and flexible scheduling), it may
possibly have established a climate which then enabled the
growth of the fourth exemplar (8 mm film). This situation
points to what might be a developing trend in research and
development efforts in education.

The findings of this investigation suggest that a mixture
of funding sources were at play in the development of each
exemplar--be they foundation, the private sector, industry,
and/or the federal government. And although not indicated
by the data base, state and local financial support must
also have entered along the way. In the case of each of
these exemplars, no one single source of funding emerges
as primarily responsible for their development. In all
cases, there was a multitude of sources. For this reason,
it must be recognized that even though the total ten-year
federal appropriation of $40.5 million for the NDEA Title
VII appears large in an absolute sense, it constitutes a
mere one-eighth of one percent of the national expenditure
in education.

In the area of CCTV, Title VII research and dissemination
efforts over the ten-year period apparently enabled media
research and utilization to progress from unsophisticated
attempts to prove that television could teach as well as
or better than traditional classroom approaches, to a more
mature understanding of the specific resistances to instruc-
tional technology and various administrative and psychological
factors which impede the design of a more effective means of
instruction.

The review of Title VII efforts in CCTV suggests that the
promoters of educational change must continue to demonstrate
the efficacy of proposed innovations. Their task, thus, is
in the domain of communication and dissemination. This does
not imply that the sole source of difficulty is in the area
of communication, but rather that the variety of problems
in the introduction and utilization of educational technology
appears to begin with the communication process and, as such,
urgently needs to be more adequately understood.

THE FOUNDATIONS AND MEDIA

Before the NDEA was passed, representatives of the various
philanthropic foundations testified before Congress in
support of Title VII. There is good reason to believe
that their testimony was influential in the inclusion of
Title VII in the final version of the Act--if only because
the work of the foundations prior to 1958 demonstrated the
feasibility and suggested the potential of media. After
the Act was passed, the foundations continued to support
research and experimentation with media for educational
use, and it was felt that a comparison of expenditures in
this area with the Title VII funding might provide a frame
of reference by which to judge Title VII expenditures.

Eight foundations were selected for a preliminary analysis:
the Ford Foundation, the Alfred J. Sloan Foundation, the
Charles F. Kettering Foundation, the Carnegie Corporation,
the Rockefeller Foundation, the Kellogg Foundation, the
Danforth Foundation, and the Esso Education Foundation.
Of these, the first six were found to have supported the
development and application of media in education between
the years 1958-1968. In addition, the annual reports of
Ford and Carnegie were checked for 1953-1957; these foun-
dations supported media and education during those years
also. The annual reports of the Danforth Foundation mention
no specific projects in support of media; Esso also cited
no specific projects in this area, with the exception of an
unspecified amount of support given to the Midwest Program
on Airborne Television Instruction in 1962.

The review of the annual reports of the above foundations
indicates funding priorities; however, it must be remembered
that any actual dollar totals given in this chapter represent
the minimum that the foundations could have contributed to
media research and development from 1958 through 1968. Many
projects of a more general nature that the foundations sup-
ported did not specifically claim to support educational
media, but may in fact have done so. In these cases, it
was impossible to estimate what might have been expended,
for instance, in a subsection of a curriculum revision
project concerned with media problems or applications.

Television as an educational medium received by far the
most attention. (In the early years of the time period,
educational radio was frequently included in the television
projects.) The bulk of the support was provided by the
Ford Foundation, although the Sloan Foundation, the Carnegie

Corporation, the Rockefeller Foundation and the Kellogg
Foundation supported or contributed to several projects.
Virtually all of the media projects supported by the
Rockefeller Foundation were in the area of educational
television, as were approximately half of the media
projects supported by Kellogg. The total support given
to television over the ten-year period is in the neigh-
borhood of $138 million. The heaviest funding activity
took place before 1966, and the level of expenditure had
dropped off considerably by 1968.

In contrast, the total funding for television from Title VII
during the same time period was approximately $9.4 million.
Between 1958-1968, when $9.4 million were spent on tele-
vision, $4.8 million were spent on programmed instruction,
for example, and $6.1 million on other media that included
computers, and new solutions to implementing instructional
media. The total Title VII funding for instructional media
during the ten years was approximately $40.5 million--far
less, in other words, than that spent by the foundations
on television alone. Figure 1 compares the approximate
expenditures by the foundations for different kinds of media.

Much of the funding continuously was channeled to educational
television programs or networks. For example, the National
Educational Television network received continuous support,
as did Radio Center and the Continental Classroom series
presented on NBC. Certain large efforts were aided, such
as the TV-Radio Workshop which produced educational and
experimental TV and radio programs, or the National Program
in the Use of Television in the Public Schools. In addition,
large-scale funds were provided over many years, such as for
the Fund for the Advancement of Education, that itself made
substantial contributions to educational television and other
media.

On a smaller scale, television projects were supported that
investigated the use of televised instruction or television
as a means of augmenting classroom instruction. Closed-
circuit television was studied in this regard. Ford also
supported research into making televised instruction more
available to schools in remote, rural areas.

In general, the support to television was directed toward
actual, ongoing efforts (such as the educational networks),
but a fair portion also focused on research and experimen-
tation. A recent example of this is the 1968 support by
Ford and Carnegie for research in the Children't Television
Workshop. Moreover, some evaluation studies of the effec-
tiveness of television as an instructional medium were
undertaken.
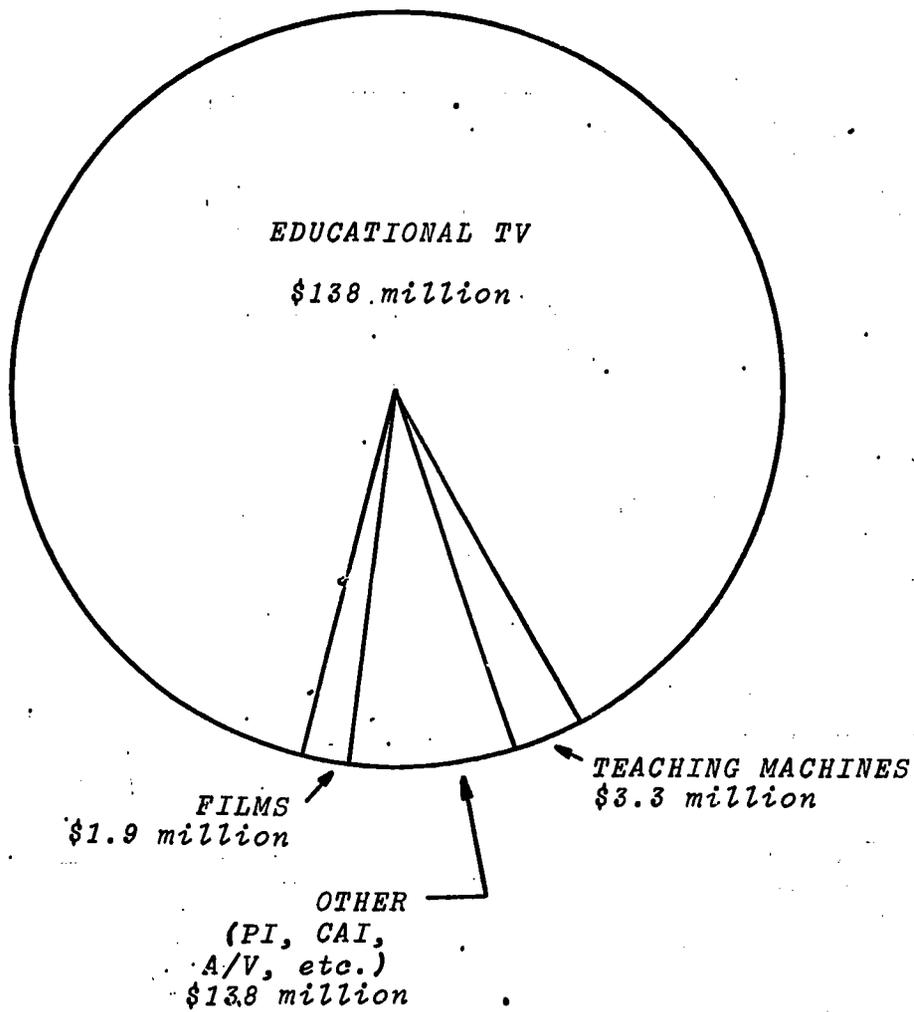
Fig. 1. Approximate funds expended by foundations
         during 1958-1968 for media.

Films and film-making also received some attention, but were overshadowed by the support given to television. Most of the projects were devoted to the support of the actual production and to use of films as instructional material. The films were used both in school classrooms and in teacher training programs. In addition, a few efforts were directed toward research into new possibilities for the use of films as an educational medium.

The years of greatest support for films and film-making were 1964 through 1966, although there was some noticeable support in 1954, 1957-58, and 1960. All four foundations supported films about equally in terms of numbers of projects. The approximate total spent between 1957 and 1968 was $1.9 million, and only one of the support grants was in excess of $300,000.

Experimental work on teaching machines and related research also was encouraged, primarily between 1959 and 1964. Carnegie funded most of these efforts, which were basically aimed at the development of automated teaching devices and independent learning techniques. Virtually all of the grants were to colleges or universities at which research and experimentation programs with teaching machines were under way. Programmed instructional materials and the development of the programming process are mentioned in these projects as well, but without a breakdown as to how much was spent on it alone.

With the exception of one grant over $1 million to Stanford University, none of the individual grants exceeded $300,000. The total spent from 1959 through 1964 was approximately $3.3 million.

Since funding specifically for teaching machines occurred less often, much more support was explicitly given to the development of programmed instruction materials and application of the process, the use of computers to schedule classes, exploration of the use of filmed lectures, programmed instruction and computer-based instruction for independent study. These projects frequently included support to other instructional innovations such as microteaching (as identified in the "origin of microteaching" in the Phase II report), videotapes, or the use of audiovisual materials. No breakdown was given as to which of these received the most financial support. Moreover, there is some overlap here with the support given specifically to TV and films, since studies of the use of films or television were often included in the projects to examine programmed learning or computer assisted learning.

The Kettering, Carnegie and Ford Foundations were the
supporters of these efforts. An approximate total of $13
millions was spent on these technologies, and the years
of greatest support were 1965, 1966, and 1967. In addition,
some indirect support for these instructional technologies
came through the Ford-supported Fund for the Advancement
of Education.

In general, the Ford Foundation was the most generous of
the supporters, as well as the most constant--some level
of activity was provided every year from 1953 through
1968.[1]   The Carnegie Corporation provided funds continu-
ously from 1959, whereas the Sloan Foundation ceased to
support educational media research or application in 1966-
1968, and the Kettering Foundation made no contributions,
as best can be determined, in 1968. The Rockefeller
Foundation provided some support every year between 1962
and 1968, except 1964. The biggest years were 1965, 1966,
and 1967, and less was spent in 1968 than any other year
except 1964 (for which no figures or projects were listed).
Much of the Kellogg support was continuous over the years;
it is difficult to assess whether their level of spending
had dropped by 1968. Table 1 shows the approximate levels
of expenditures by year for five foundations.

To summarize, educational television benefited the most
from the support of the large foundations, although the
level of funding had dropped by 1968. This pattern re-
sembled in some respect the priority given to television
under Title VII, where over 25 percent of the ten-year
expenditures were for television efforts.[2]   Other new
instructional technologies received assistance, primarily
for research or experimentation, and of these, particular
attention was paid to teaching machines and programmed
instruction, followed by computer-assisted instruction,
videotapes, audiovisual aids, and microteaching. The
production and use of educational films was also under-
taken, primarily between 1964 and 1966. As was the case
with funding for educational television, the level of
support for these other efforts was down by 1968.

---

[1]
    cf Murphy and Cross, *Learning by Television*, which
summarizes Ford Foundation activities in instructional
television. Data regarding yearly expenditures for Ford's
expenditures for instructional television supplied by
Miss Claire List, Assistant Programs Officer via personal
communications, January 27, 1970.

[2] *See p. 36, Phase I report.*

TABLE 1

APPROXIMATE EXPENDITURES FOR MEDIA PROJECTS[1]
by FIVE MAJOR FOUNDATIONS

1958 - 1968

Fiscal Year	FORD	SLOAN	KETTERING[2]	CARNEGIE	ROCKEFELLER
1958	$ 2,910,155	$100,000 [57-58]	$ --	$ none	
1959	10,282,615	100,000 [59-60]	--	75,000	
1960	9,284,868		--	251,700	
1961	10,661,551	none [61-62]	--	750,000	
1962	19,626,746		--	446,000	$200,000
1963	16,507,215	no figure given [63-64]	--	1,050,000[3]	15,000
1964	7,056,510		400,490	490,665	--
1965	7,100,000	530,000	192,771	295,500	250,000
1966	16,334,000	none	255,952	340,000	250,000
1967	21,205,420	none	80,591	440,000	425,000
1968	12,420,336[4]	none	none	1,321,900[5]	11,000

1. No figures are given in annual sums for the Kellogg Foundation for the years 1958-1968. No breakdowns by projects were available for the Esso Foundation for the years 1958-1968.

2. For 1958-1963, Kettering supported development of "scientific equipment," "science teaching center and Educational Services, Inc.," but no specifics were given. It cannot be assumed this support includes work on media projects.

3. This entire amount was given to Stanford University for an automated laboratory for research on teaching and learning.

4. The data reported for the Ford Foundation reflect primarily expenditures for open broadcast Educational Television. For instance, through June of 1966, approximately 81 million dollars had been expended in this area. In contrast, from 1962 to 1968 only 1.1 million dollars had been spent for instructional media/non television.

5. Of this total, $1 million was given to the Children's Television Workshop, which received approximately the same amount of Title VII monies. Ford Foundation monies were also provided for this project in 1968 in the amount of $250,000.

SURVEY OF MEMBERS OF THE ADVISORY COMMITTEE

ON NEW EDUCATIONAL MEDIA

Part C of Title VII of the National Defense Education Act
established an Advisory Committee on New Educational Media
in the Office of Education.[1]

The three major phases in the history of the committee were
directly related to the major phases in the life of the
program which might be categorized as follows:

> 1958 to 1962. A period in which the program
> received rather strong support. This period
> found the committee concentrating on the actual
> evaluation and rating of proposals.
>
> 1962 to 1965. Significant changes took place
> in both the Office of Education's administrative
> structure and the patterns of legislation
> affecting the various media programs. The
> strength of the committee declined both in
> numbers and in influence with the reorgani-
> zation of 1965, leaving the committee with
> somewhat less than a clear mandate.
>
> 1965 to 1968. A period wherein the resources
> of the program and committee were directed
> toward a policy-recommending role for media
> activities.

It is against such a backdrop that this survey of the activ-
ities of the Advisory Committee members must be viewed. The
objective of the survey was to provide additional data and
insights for this project's recommendations.

The legislation required that individuals representing five
specific professional categories be appointed to the commit-
tee. These included: (I) three individuals identified with
science, liberal arts, or foreign languages in institutions
of higher education; (II) three actually engaged in the
supervision of teaching in elementary and secondary schools;
(III) three with demonstrated ability in the utilization or
adaptation of media for educational purposes; (IV) three

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[1]Committee on Labor and Public Welfare, United States Senate,
*The National Defense Education Act of 1958: A Summary and
Analysis of the Act.* Washington, D. C.: United States
Government Printing Office, September 5, 1968.

members of the lay public with demonstrated interest in the problems of communication media; and (V) a representative of the National Science Foundation.

Procedures

In early November 1969, members of the statutory Advisory Committee on New Educational Media all received a letter which solicited their comments about the committee and their service thereon.

The purpose of the letter was to obtain information which would assist in evaluating the strengths and weaknesses of the administrative procedures required by the legislation governing Title VII of the National Defense Education Act.

A letter, rather than a questionnaire, was employed to allow the committee members to express a full range of attitudes and to solicit responses to specifics which were of clearest recollection to the members. Also, it was hoped that by avoiding a questionnaire the percentage of responses could be increased. These Advisory Committee members were provided with an explanation for the request, an information bulletin summarizing the purpose and provisions of Title VII and a statement reviewing the purpose, membership, and procedure of the committee.

The mailed materials were prepared and signed by Miss Harriet Miller, a former member of the Advisory Committee. A copy of the distributed materials is found in the Appendix.

Letters were mailed to the 54 former members listed in Table 1 and 28 responses were received. (Two of the former members had died, and one could not be located.) Five of the responses were brief acknowledgments indicating that the writer felt he could not be helpful. Table 2 shows the distribution of responses in each category and time period.

The remaining 23 responses ranged from a short, general commentary to several pages of detailed statements. The longest and most detailed responses were, for the most part, from people appointed earlier but serving on the committee through the fall of 1965. It was helpful to also have received detailed comments from the NSF participants because they provided a "cross-agency" perspective.

TABLE 1

ADVISORY COMMITTEE ON NEW EDUCATIONAL MEDIA

	Category		Category
Abramson, Marion P.	IV	*Hull, Richard B.	III
		*Hunter, Armand	I
*Bailey, Thomas D.	II		
Bennet, Lerone	IV	*Kelly, Harry C.	V
Bennington, Nevilie L.	II	*Kelson, Keith	V
Birkmaier, Emma	I	Knox, Sarah H.	II
Bomar, Cora P.	III		
*Bowers, Nancy	IV	Larson, Lawrence C.	III
Brace, Clayton H.	IV	Lewis, Philip	II
			III
*Carpenter, C Ray	III	*MacLean, Malcolm	III
*Carroll, John B.	III	*Meadows, Austin R.	II
Caudill, William	III	Meierhenry, Wesley C.	III
Codwell, John E.	II	McGill, Ralph E.	IV
Cowan, Louis	III	*Miller, Harriet	II
*Culkin, Reverend John	III	*Mitchell, Wanda B.	II
*Davison, W. Phillip	IV	Nabrit, Samuel L.	I
Dees, Bowen C.	V	*Nostrand, Howard Lee	I
Divizia, Margaret	II		
*Dolce, Carl	II	Ofiesh, Gabriel	III
Dunn, Reverend Hugh E.	I		
		*Reinert, Reverend Paul	I
*Fletcher, C. Scott	III	*Roe, Arthur	V
Foncannon, Howard	V		
		Saudek, Robert E.	III
*Gagne, Robert	III	*Schramm, Wilbur	III
Gardner, John W.	IV	*Seaborg, Glenn T.	I
Goldstein, J. Richard	IV	*Skornia, Harry J.	III
Golterman, Elizabeth	II	Slavin, Reverend Robt.	III
*Grant, William	IV	*Spaulding, William E.	IV
Gross, Calvin	II		
		Wittcoff, Raymond	IV
*Hazard, Leland	IV	*Zacharias, Jerrold	I
*Hovde, Frederick	I		

*Those who responded to the Advisory Committee letter
of inquiry.

      I - Higher Education: Content

      II - Supervision: Elementary and Secondary

    III - Media

    IV - Lay Public

    V - NSF

TABLE 2

DISTRIBUTION OF RESPONSES BY TIME PERIOD AND CATEGORY

	58-59-60	60-61-62	63-64-65	66-67-68
I Higher Education (science, liberal arts, language)	I I*	I I I I*	I	
II Teaching or Supervision in Elementary and Secondary Schools	I*I*	I	I	I
III Media in Education Personnel	I*I*	I*I*I*	I	I I I*
IV Representatives of the Lay Public	I*	I*	I	I
V NSF	I	I*		I*

*Contributors of detailed letters.

It was anticipated that the latitude afforded by the letter technique would produce a wide variety of responses. This proved to be the case; consequently, it was not possible to tabulate specific comments under precise headings or to make statistical evaluations.

The committee members expressed reactions which were basically relevant to one or another aspect of the work of the Advisory Committee, although stated in a variety of ways. For this reason, the aspect rather than the content of the comment alone was used in analyzing the responses.

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Four principal aspects were identified: the concept of the Advisory Committee, its role, its functioning, and its contribution. These four aspects are described in greater detail below, and a few individual comments from committee members are included.

Responses Pertaining to Four Principal Aspects of the Advisory Committee

1. The concept of the Advisory Committee as an administrative device with emphasis on its composition, including technically-knowledgeable members and lay members.

    Four members expressed great satisfaction with this aspect of the committee; three others were emphatic about what they felt were deficiencies in the membership; others felt the idea was sound but had "gone aground."

    > "...the Title VII Advisory Committee performed very well in its assignment in spite of the different types of individuals and professional interests involved. In fact, I would say that the 'spread' in this committee was an asset to its function and assignment..."

    > "Personally, I think a citizens' committee with 'teeth' is a very healthy thing...I felt constituency of the original committee was first rate and the fact that a number of highly intelligent people, concerned with communications but not experts per se in this field were included, had a great deal to commend. Judgments were based on a larger perspective, were less parochial than are often found in a panel composed entirely of media professionals."

    > "..there was possibly one flaw in the structure, namely that there was no explicit provision for including individuals on the committee with sufficient expertise in research techniques and possibilities to evaluate properly the reports of the field readers..."

2. The role of the Advisory Committee primarily as a body with limited and specific powers (largely concerned with approval of activities resulting in the commitment of funds), rather than as a body empowered to guide the Title VII effort along broad policy lines.

Three members reacted favorably to the committee's role; nine were concerned about the successfulness of its activities. Eight of the concerned members were among those who served on the committee after 1960-62.

> "I think the committee participation during my term of duty was more substantial than procedural. We were indeed--particularly at the outset--faced with almost more substantive participation than we could handle in terms of reviewing proposals, etc., before the staff group had come to full complement..."

> "At the meetings themselves, I sensed confusion as to the distinction between the type of technical work which should properly have been accomplished by the staff and the evaluative non-technical assistance that could be expected from an Advisory Committee."

> "...Committee members were trying to give advice on policies and the general shape of the OE program. We were not satisfied at all on that score; first, because it was very difficult to get anything but details or specific grant recommendations on the agenda and, second, because we saw little evidence that advice on program policy had any appreciable effect."

3. The functioning of the Advisory Committee, including staff competency and committee-staff relationships.

Twelve members commented favorably about the functioning of the committee; six indicated lack of satisfaction. The majority of the responses came from members who served on the committee before 1965.

> "I think it is one of the best government-organized committees on which I have served. The staff support was better than the staff support which committee members received from other committees both within and out of the government...

> "The staff support was always excellent, but I felt they were always understaffed..."

4. The contribution of the Advisory Committee to the effort
   expressed by the enactment of Title VII.

   Indications of members' opinions about the contribution
   of the Advisory Committee in general are drawn from
   comments primarily relating to other subjects. Favor-
   able reactions outweigh unfavorable reactions, but it
   is hazardous to generalize or to draw broad conclusions
   from the comments made.

   > "The committee did perform a valuable service
   > by objectively evaluating the applications and
   > by receiving information from the USOE staff
   > and disseminating it among the groups we
   > represc ....."

   > "Unfortunately, there is no way of determining
   > to what extent, if at all, those research pro-
   > jects which the committee endorsed and which
   > were financed by the Office have contributed
   > to the improvement of education or even the
   > more effective use of new media."

   > "I have no question that the time and expense
   > involved in funding this committee was well
   > worthwhile. As I suggested earlier, this new
   > way of viewing the media, as a cluster or a
   > continuum of interrelated devices to be employed
   > for educational purposes, was uniquely helpful
   > in stimulating their wider use, in enabling
   > people to think purposefully about employing
   > (not whether to use radio or television or
   > film, but which ones to use, singly, or in
   > what combinations) the whole range of media
   > as an integral part of the instructional
   > process."

Individual Comments

Some of the comments by the responding committee members,
while not easily classified, are useful in providing addi-
tional information about aspects of the Title VII program
and its administration. A number of these comments follow.

> "I think that any feeling of doubt as to the nature
> of the service the committee was rendering resulted
> from an almost shocking lack of real merit in the
> research projects we were asked to appraise. I am
> sure that the committee did its best to support only
> those applications which seemed worthy. It was,

*however, very seldom that I had any confidence
that the research project was worth what it was
costing the taxpayers. I do wish...that the policy
or authority of the Office of Education might be
such as to permit them to appoint an Advisory
Committee which could help encourage research in
specific areas in which they felt that research
was needed, and which could say something about
the nature of that research without running into
the hoary basic/applied research controversy."*

*"The weakest link in the entire Title VII program
was in the dissemination of research findings in
the research completed, but valuable efforts were
made to report the findings. I hope that this part
of the program can be revived and reports of worth-
while research findings can be reviewed and report-
ed to state education departments and institutions
of higher learning."*

*"...my recommendation would be, in this case
specifically for the benefit of USOE and HEW,
that they should follow this organizational
structure and operation as closely as possible
for future committees studying a variety of
subjects."*

*"...Advisory Committees should...require a greater
commitment of time and energy from its members."*

Subjective Analysis of the Relative Weight of the Responses with Respect to Four Principal Aspects

Figures 1 through 4 show subjective ratings of the
responses for each of the four principal aspects described
above. Respondents are encoded by number. Roman
numerals refer to the category of membership (I through V);
Arabic numbers bear an approximate relationship to the time
period of service, the earlier appointed members being
represented by the lower numbers. On a scale of minus ten
to plus ten, zero represents a neutral position (or the
position of a member whose responses were contradictory);
minus ten represents a thoroughly negative or unfavorable
response; and plus ten represents a thoroughly positive
or favorable response. It should be understood that the
analysis is necessarily a subjective interpretation of
the responses and that the figures do not represent an
effort at exact measurement but are merely guides for
visual reference.
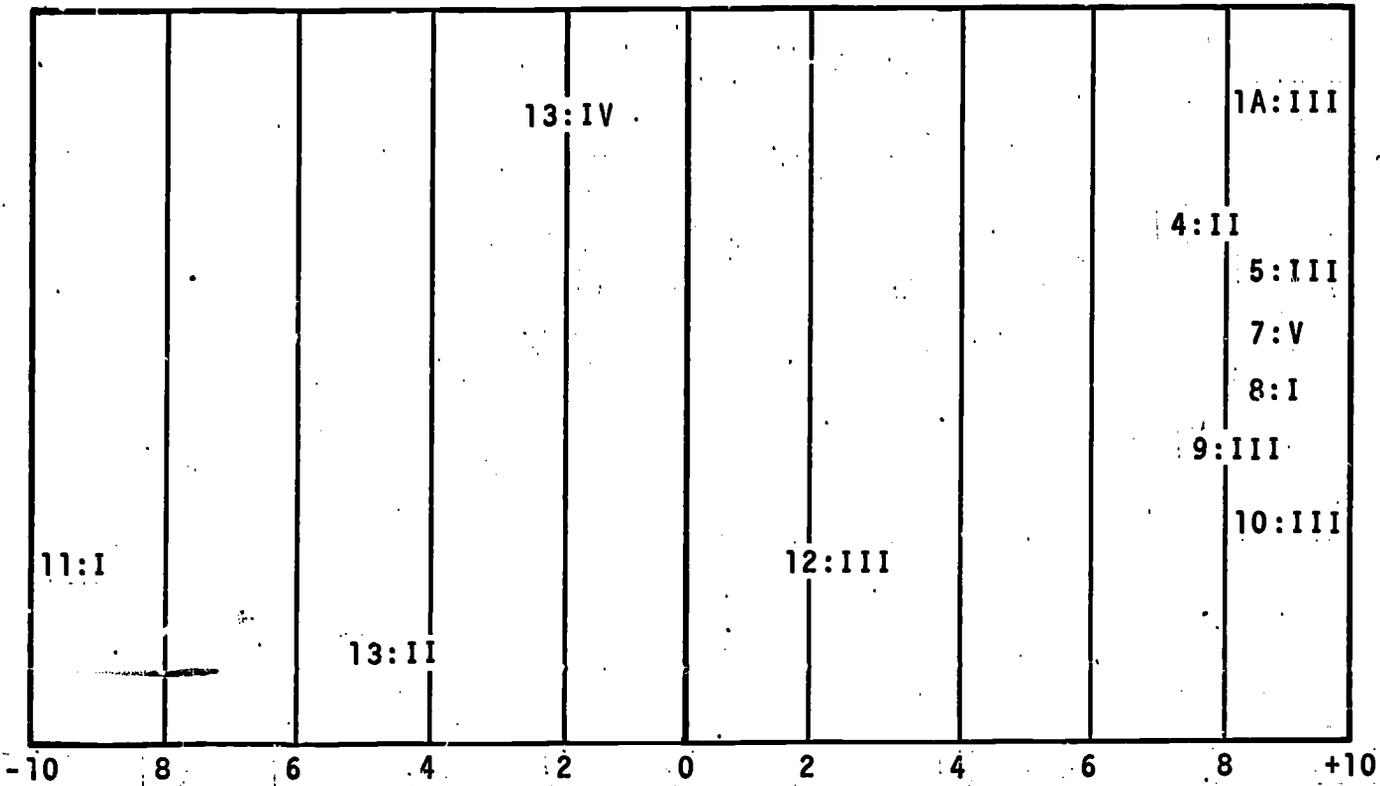
Fig. 1.   Density of subjective ratings - aspect 1: CONCEPT
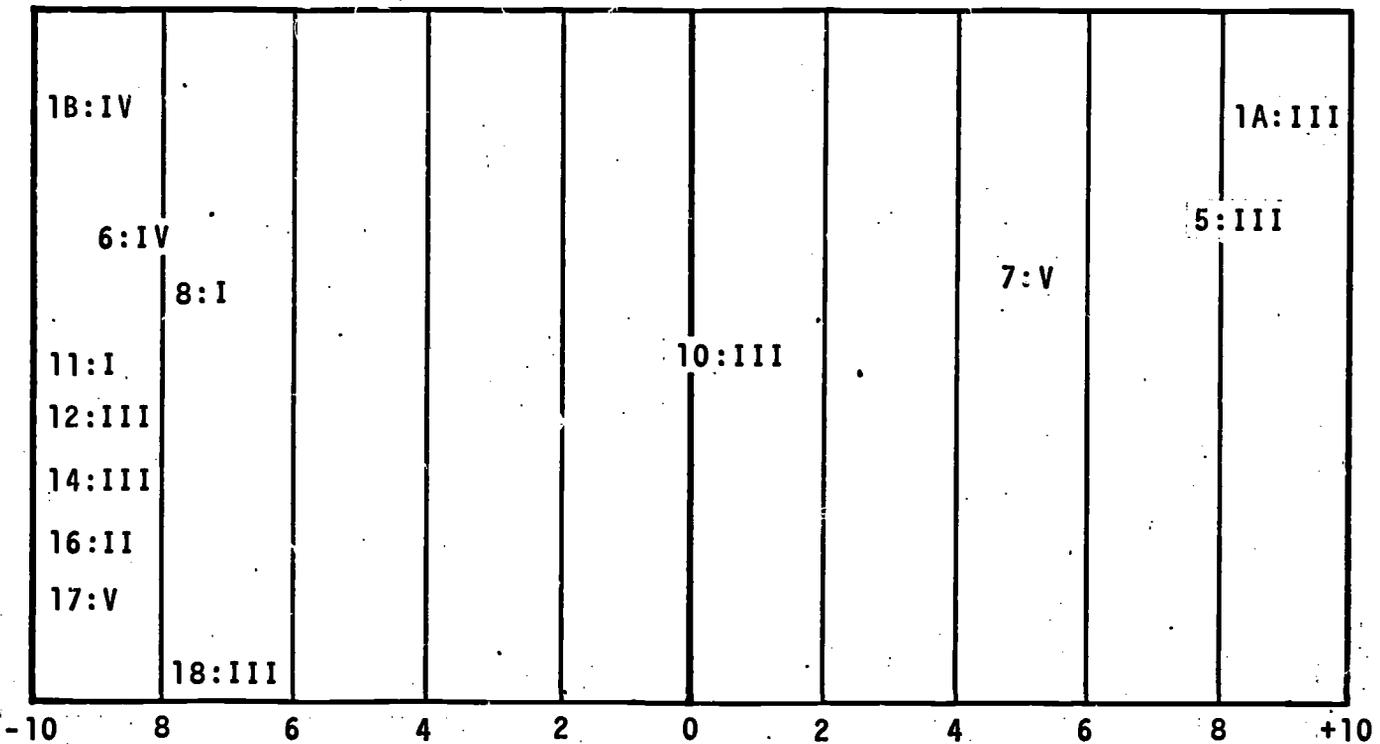
Fig. 2.   Density of subjective ratings - aspect 2: ROLE

Fig. 3 (top chart):

```
                                                    2:I         1:II
                                                                1A:IV
                              1B:IV                  3:I
                                                                4:II

                                                                5:III
                                                                6:IV
                                                            7:V
                                                                8:I
                                                    9:III
                                                            10:IV
11:I
                                            12:III
                    14:III                           18:III
                    15:IV
                              16:II
17:V
```

-10   8   6   4   2   0   2   4   6   8   +10
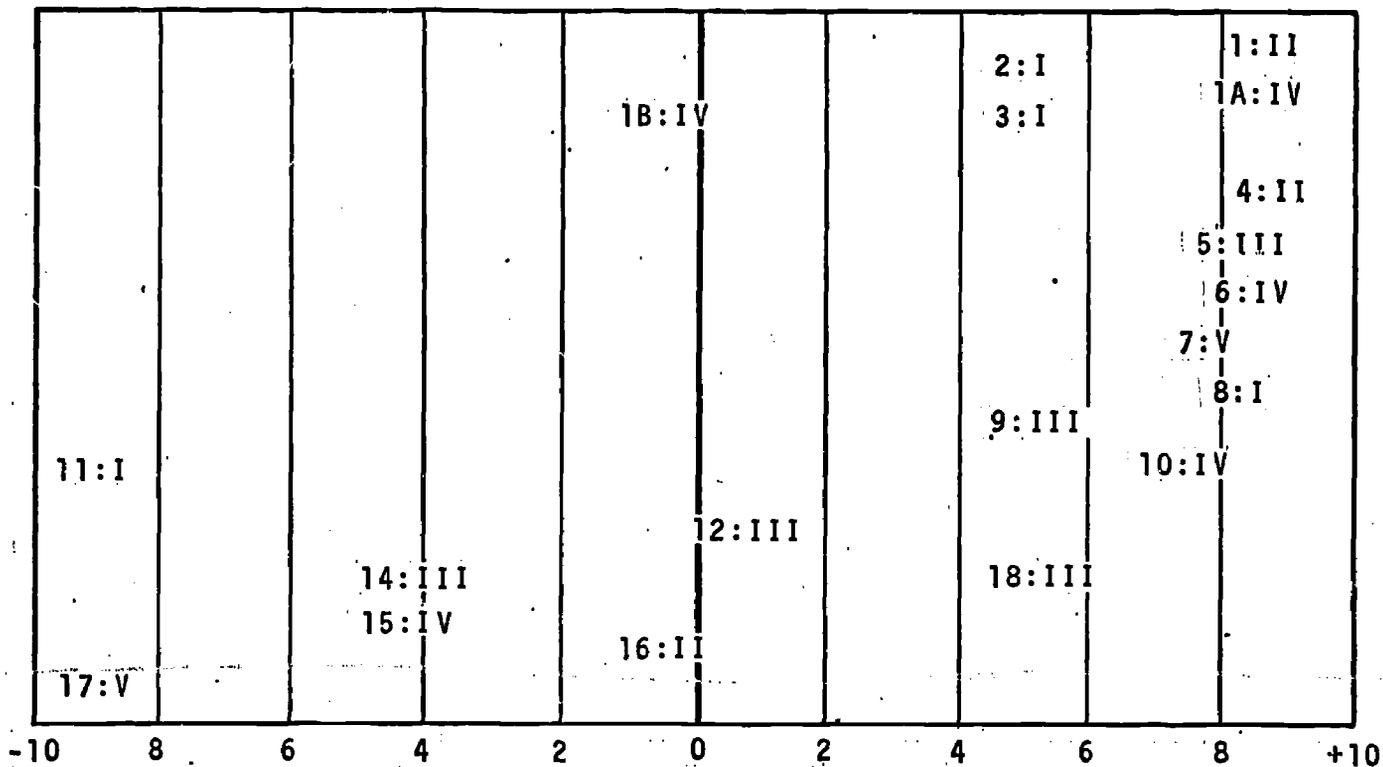
Fig. 3. Density of subjective ratings – aspect 3: FUNCTIONING

Fig. 4 (bottom chart):

```
1:B                                                             1A:IV

                                                    2:I
6:IV                                                3:I         4:II
                                                                5:III

                                                                8:I
11:I                                    10:III
12:III
                                            13:II
                                            15:IV
17:V

                                                                19:III
```

-10   8   6   4   2   0   2   4   6   8   +10
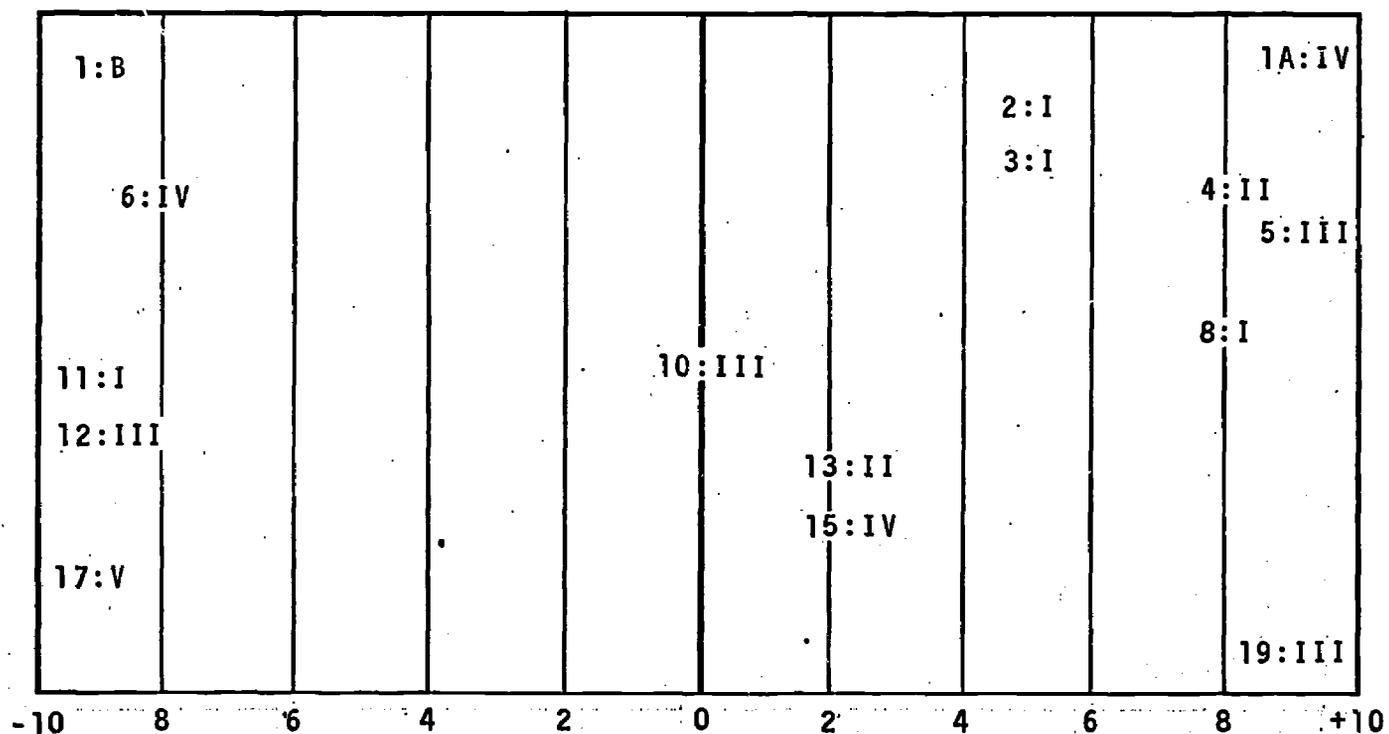
Fig. 4. Density of subjective ratings – aspect 4: CONTRIBUTION

Observations Based Upon the "Plots"

Any attempt to generalize from the four plottings would be
difficult but "conclusions" for some aspects, as perceived
by Advisory Committee members, might be suggested. For
instance:

    1. The concept of the Advisory Committee as an
        administrative device was perceived as basically
        worthwhile by the majority of those who responded
        to this question.

    2. The role of the committee as it operated seemed
        to be "inappropriate" to many of the respondents.

    3. Over two-thirds of the sample expressed positive
        opinions about the overall functioning of the
        committee, including staff support.

    4. The contribution that the committee made to the
        overall execution of the program was viewed as
        positive.

    5. It is difficult to identify positive or negative
        impressions for any of the four aspects by
        categories (I,II,III,IV, or V), due to the
        lack of any consistent response pattern by
        the members representing each group.

Observations Based Upon the Respondents' Comments

The responses of the Advisory Committee members ranged
from heartily positive to devastatingly negative. In
general, the comments reflect a willingness to assist
with the survey. The more thoughtful responses were
frequently the more detailed, and often emphasized
particular aspects of the committee and its work, as
well as providing critical or constructive suggestions.
The more complimentary responses were usually expressed
in one-to three-paragraph replies.

The concept of a multi-faceted committee was considered
to be sound, but to have encountered difficulties when
the committee members were asked to deal with very detailed
and technical dimensions of proposals. Personnel from
categories I, II, IV and V could not have been expected
to participate or to feel comfortable participating in
technical areas.

Some respondents felt that more time should have been
spent dealing with larger policy matters and less time with the
review and evaluation of proposals. The option was available
in the legislation. The imbalance seemed to be of conern
to the respondents. However, during the early years of the
program, the staff obviously needed to have the committee
review many proposals.

With the advent in 1960 of the Educational Media Study Panel
to deal with policy, it appeared that the committee could
then have played a broad, rather than a narrow, role. How-
ever, only three respondents (all from category III), who
served after the establishment of the Study Panel even ack-
nowledged its existence and role.

The staff support was viewed as having maintained a high
standard throughout the life of the program. Some re-
spondents felt, with respect to the progress reports on
Title VII-B activities, that the staff was attempting
sometimes to bypass the committee. However, the legislation
did not require the committee to review in detail the Part
B proposals. To some, the frequent rotation of staff members
seemed to cause concern in relation to guidance and conti-
nuity while others felt that such a committee should meet
more than twice a year to provide any services of value
to the U. S. Office of Education.

Some concern was expressed about the value of the research
being supported, the merit of the proposals evaluated, or
the effective dissemination of the results. Two respondents
felt that additional members with knowledge of research
would have helped to better accomplish the committee's tasks.
Perhaps a "wild card" member might have been provided in
the legislation, thus enabling the Commissioner to add to
the committee a person who could meet the needs of the
moment throughout the changing life of the program.

Finally, the committee members felt that overall, they had
made a valuable contribution toward executing the intent of
the Title VII legislation.

PROJECT DIRECTORS' QUESTIONNAIRE ANALYSIS

Individual projects funded under Title VII were of consider-
able interest to over 440 individual project directors, as
indicated by their responses to a mail questionnaire which
was developed to solicit information from this group. The
questionnaire was designed to obtain information in the
following areas:

1. The initial and current degree of involvement
    in media research on the part of each director;

2. Accomplishment of project objectives as perceived
    by the directors;

3. Administrative efficiency of the Title VII program
    in comparison to programs conducted by other agencies
    within USOE;

4. Quality and levels of communication and dissemination
    of Title VII activities, projects, and products;

5. Suggestions for improvements in the management and
    dissemination of research programs of this nature.

FIELD TEST OF THE QUESTIONNAIRE

Procedures

The mail questionnaire was based upon a series of interviews
with former project directors. These interviews were under-
taken for two reasons: (1) to field test the preliminary
version of the interview instrument and, (2) to obtain back-
ground data, relevant documents, and ideas from the former
directors. It was also anticipated that the interviews would
initially provide a means for disseminating information re-
garding the purposes of this study.

The field test version of the interview guide was tested with
two former project directors in the Los Angeles area prior to
review by the IED project advisory committee. Suggestions
gained from this field test were incorporated prior to inter-
views with 26 project directors at the Department of Audio-
Visual Instruction (DAVI) meeting in Portland, Oregon, held
in March, 1969.

Invitations for interviews were sent to 75 Title VII,
Part A, project directors. Initially, groupings were
devised according to the number of projects in which the
directors participated and such factors as subject level
(elementary, secondary, and college).

In the case of Part A directors, attention was given to
the section of Title VII [(1) Development, (2) Teacher
Training, or (3) Presentation of Academic Subject Matter]
on which the project was focused.

Fifty-six directors indicated an interest in discussing
their role in Title VII but only 18 stated that they would
attend the DAVI Convention in Portland. Due to this rela-
tively small sample, another eight project directors, who
had not been contacted earlier, were also asked to participate
in the Portland interviews.

The interview form included questions about the professional
histories of the directors, their Title VII projects, and
their general views of Title VII.

It was realized, of course, that the DAVI group constituted
a rather special sample and that little could be generalized
from their attitudes and answers. The fact that they were
present at DAVI gave some indication of their continued
interest and involvement in media-related activities and
evidence of their relative prominence in the field.

Thirty-one former directors were interviewed, of whom 16 had
conducted Title A and 15, Title B projects. Their median age
was 47, all but one held a doctorate, and the average involve-
ment in media-related activities collectively spanned the 10
years of the program. This group seemed to have had consider-
able involvement in Title VII as shown by the facts that members
of this group had directed an average of two projects each.
All but one of them felt that he was still actively involved
in the field of educational media.

Survey Sample Compilation

Four hundred and forty finalized questionnaires were next
mailed to former Title VII directors in the fall of 1969,
with the 31 directors involved in the field test excluded
from the sample. Each director was asked to answer general
questions about the Title VII program and some specific
questions about a designated project (A or B) which he had
directed. The instrument and total responses to each item
can be found on page A38 of the Appendix.

Returns were received from 224 directors. If such factors
as type, funding, year·started, and year completed are ex-
amined, no noticeable differences appear between respondents
and non-respondents. (See Tables 1 and 2 on following page.)
Respondents are named on page A53 of the Appendix.

AN OVERVIEW OF THE SURVEY

Characteristics of Respondents

A majority of the respondents held Doctorates of Philosophy
or Education and had been active in media-related activities
for more than 15 years, although their involvement in the
media field for the most part was light or nonexistent prior
to Title VII. The directors had concentrated in various
specialities prior to Title VII, with emphasis on psychology,
administration, and teaching.

Since being involved with Title VII projects, most of the
directors have spent 50 percent or more of their time in
media activities. A 30 percent increase in involvement
with media was primarily attributed to their Title VII
projects.

Formal Commitment to Projects

A majority of those replying spent at least half of their
time with the Title VII projects and felt that they had
fully accomplished their objectives. Of the objectives
not carried out, most could be classified under the following
headings: (1) research results not clear cut; (2) application
of project outcomes limited; and (3) limited development of
academic material for more than one level. Reasons given
for these objectives not being reached were primarily poor
planning, design or time limitations, and inadequate funds.

Measurement

Most of the projects did attempt to assess changes in student,
teacher, and administrative behavior and attitudes concurrent
with media applications. Criteria used for evaluation of
impact were almost equally divided between objective and
subjective measures. Of the materials developed as a part
of the program, most were self-instructional materials,
courses of study, or curriculum guides. For the most part,
these materials are available for examination at a repository,
or from the project director.

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TABLE 1

TITLE VII PROJECT DIRECTORS

Amount of Monies Received				Project Type	
Thousands of Dollars	Respondents	Non-Respondents		Respondents	Non-Respondents
1-10	63	55			
11-20	25	26	A	141	105
21-40	40	35			
41-50	12	11	B	83	88
51-100	44	29			
101-500	39	35	N =	224	193
501-600	0	0			
601-700	0	0			
701-999	0	0			
1000 +	1	2			
N =	224*	193			

TABLE 2

TITLE VII PROJECT DIRECTORS

Year Project Started				Year Project Ended	
	Respondents	Non-Respondents		Respondents	Non-Respondents
1958	0	0		0	0
1959	30	30		3	2
1960	35	23		9	13
1961	26	25		26	33
1962	17	17		42	25
1963	27	18		18	20
1964	14	23		27	18
1965	35	23		30	16
1966	24	19		21	18
1967	11	9		28	33
1968	5	6		16	9
1969	0	0		4	6
N =	224*	193	N =	224	193

*N actually totaled 229; however, five returns were unusable.

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Overall Project Management

Although most of the respondents received their information
about the Title VII research and dissemination program
through colleagues, they judged their access to information
about the proposal opportunities as being as good as,or
better than,information access open to other researchers.
Most felt that the opportunity to discuss possible proposals
was either usually or always available.

A majority of the project directors had previous experience
with other federal agencies, and of these, most felt that
Title VII had been administered as well as, or better than,
other federal agency relationships. Strong points in the
administration of the program were considered to be the
guidelines for submitting proposals, communications with
the USOE staff, and the congeniality of the staff. Weak-
nesses cited were the delays in appropriating and funding
the projects, vague or indecisive policy decisions, and
modification of objectives, staffing, time tables, or
evaluation procedures.

In comparison to other Office of Education research programs,
a majority of directors felt that the Title VII program was
administered as well as, or better than, other programs.

Dissemination of Findings

Dissemination of the findings and results of the projects
were not primarily conducted through television, films, and
radio. Most of the projects did disseminate information
about the project. DAVI and AERA conventions were frequently
used for dissemination, as were national agencies, colleges,
and universities. Journals most often used for dissemination
were AVCR and Audiovisual Instruction. In most cases, copies
of the final reports, published by the various project direc-
tors, may be obtained from ERIC Clearinghouses or from the
Title VII repository. Some, however, may be obtained directly
from the project director. In most cases, from 100 to 400
copies of each study report were printed.

A majority of the Part A project directors felt that results
of their Title VII research were not being translated into
classroom practice. Reasons frequently given for this were
(1) the material is difficult to obtain or not available,
(2) the material is still experimental, and (3) the results
have not been properly disseminated. A small majority of
the Part B directors also felt that effects of their research
did not have a significant impact on the classroom.

The overall impression of all of the project directors
indicated that positive aspects of Title VII activities
outweighed any negative factors, and that they would
gladly become involved with the program again.   A
detailed analysis of the administrative, management,
and dissemination efforts is provided in Chapter XII.

Chi Square (X^2) Analyses

A number of X^2 analyses were conducted to ascertain relation-
ships, if any, between various items in the questionnaire,

The questions that provided some degree of relationships
were the following:

- *Did perception of access to <u>information about</u>*
  Title VII proposal opportunities in comparison
  to other researchers relate to the total number
  of research projects conducted, years of experi-
  ence in the field, opportunities to discuss pro-
  posals, or whether the individual had conducted
  an A or B project?

  The total number of projects, the years of
  experience in the media field, and in particular
  the number of Part A projects conducted appeared
  to bear a relationship to a positive perception
  of information availability.   These relationships
  were significant at the .05, .10, and .10 levels
  respectively.

- *If project directors thought the opportunities*
  to <u>discuss</u> possible proposals were usually or
  always available had they also felt that their
  access to general information was as good as or
  better than that of other researchers?

  Yes, at the .001 level of significance.

- *When comparing their Title VII experience with*
  their relationships with other federal agencies,
  did high ratings for Title VII relate to years
  of experience in the media field, Part A or
  Part B projects conducted, total number of
  projects conducted, or information about
  proposal opportunities?

  The Section B project directors perceived the
  overall administration, in comparison to other
  agencies, somewhat more favorably (significant

at the .10 level) than did Section A directors.
(However, it should be noted that a number of
project directors held both types of projects.)
Those with more years of media experience also
provided a higher rating (.05 level of significance).

- *If project directors felt they had accomplished
  their individual project objectives fully or fairly
  well, did they tend to rank the Title VII adminis-
  tration better than, or as well as, other federal
  agencies?*

Yes, better than, or as well as, at the .05 level
of significance.

- *Did project directors rate Title VII administration
  as better when contrasted to other USOE activities
  if examined in terms of the factors of: years of
  experience in the media field; total number of pro-
  jects involved; and whether these were A or B projects.*

Those directors who had four or more projects during
the 10-year life of Title VII tended to rate the
Title VII administration higher (.05 significance
level).   Relationships based upon the other factors
did not appear to emerge.

- *Did the overall impression of Title VII activities
  differ among the project directors who had varying
  years of media experience, Part A or Part B projects,
  total number of projects, or perception of Title VII
  in regard to programs in other agencies?*

These factors did not emerge separately as being
critical to the highly favorable impression that
most directors had of the Title VII activities.

ADMINISTRATIVE AND MANAGEMENT ANALYSIS

This chapter provides administrative and management recommendations for future programs with objectives comparable to Title VII of the National Defense Education Act. Recommendations based on Title VII experience may be only partially applicable to current or newly proposed USOE programs dealing with media or other areas of education.

In certain instances, new practices and policies, suggested in this report, have already been implemented in the Office of Education. The time, staff and funds were not available, however, to examine all USOE modifications to administrative practices during this particular project.

Each reader, therefore, must view the recommendations in relation to his own needs, management practices, and policies. If the report helps to reinforce certain attitudes and behavior or suggests new approaches, or cause the reexamination of ignored practices, this assessment will have served its purpose.

An Intersect or Overlap Theory of Impact and Assessment

An individual's perception of an activity, over time, leads him to make generalizations about the nature and character of a program. In the case of Title VII, numerous groups interacted with the program. Each, like the three blind men viewing portions of the elephant, could see or engage in aspects that were related to their specific needs or assignment. Consequently, each individual could base his judgments on only a partial sample of the whole.

As a result, categories of respondents had different impressions of the program. For example, the USOE Media Branch staff had one set of opinions; the mandated Advisory Committee had others. The collection of information pertaining to the recommendations provided in this report was designed to utilize an intersect or overlap theory of impact and operations assessment.

As the impressions of each group were synthesized and analyzed, there emerged an overlapping of perceptions or opinions, a congruence in remarks and recommendations. Patterns and "themes" occurred which no single response could legitmize, but which properly could be accepted when they recurred in the reactions or assessments in more than one category of respondents (i. e., project directors, Advisory Committee).

Certain of the themes can be supported with "hard" data; others cannot. No ordering of hard data could provide substantiation as to what occurred or with what degree of importance it should be credited.

Because of needing to deal with apparently variant and conflicting inputs, the study made extensive use of an "intersect theory of analysis" approach in an effort to approximate "objective reality." Using such analysis the areas of overlap (or intersect) are purposively searched out and serve as focal points for analysis. When faced with a variety of opinions, this may be the soundest approach to use.

To put the intersect or overlap theory into operation, information was obtained from:

224 Title VII Project Directors

 19 USOE personnel who administered the program in the
    Media Branch

  6 USOE Deputy and Commissioners of Education, Bureau of
    Research Chiefs

 28 Title VII Advisory Committee Members

  9 Advisory Committee Members and Senior Consultants

    (A few personnel may have served in two or more of
      the above categories)

    Minutes of the Title VII Advisory Committee Meetings

Figure 1 attempts to provide a schematic which reflects the intersect or overlap theory in its simplest form.
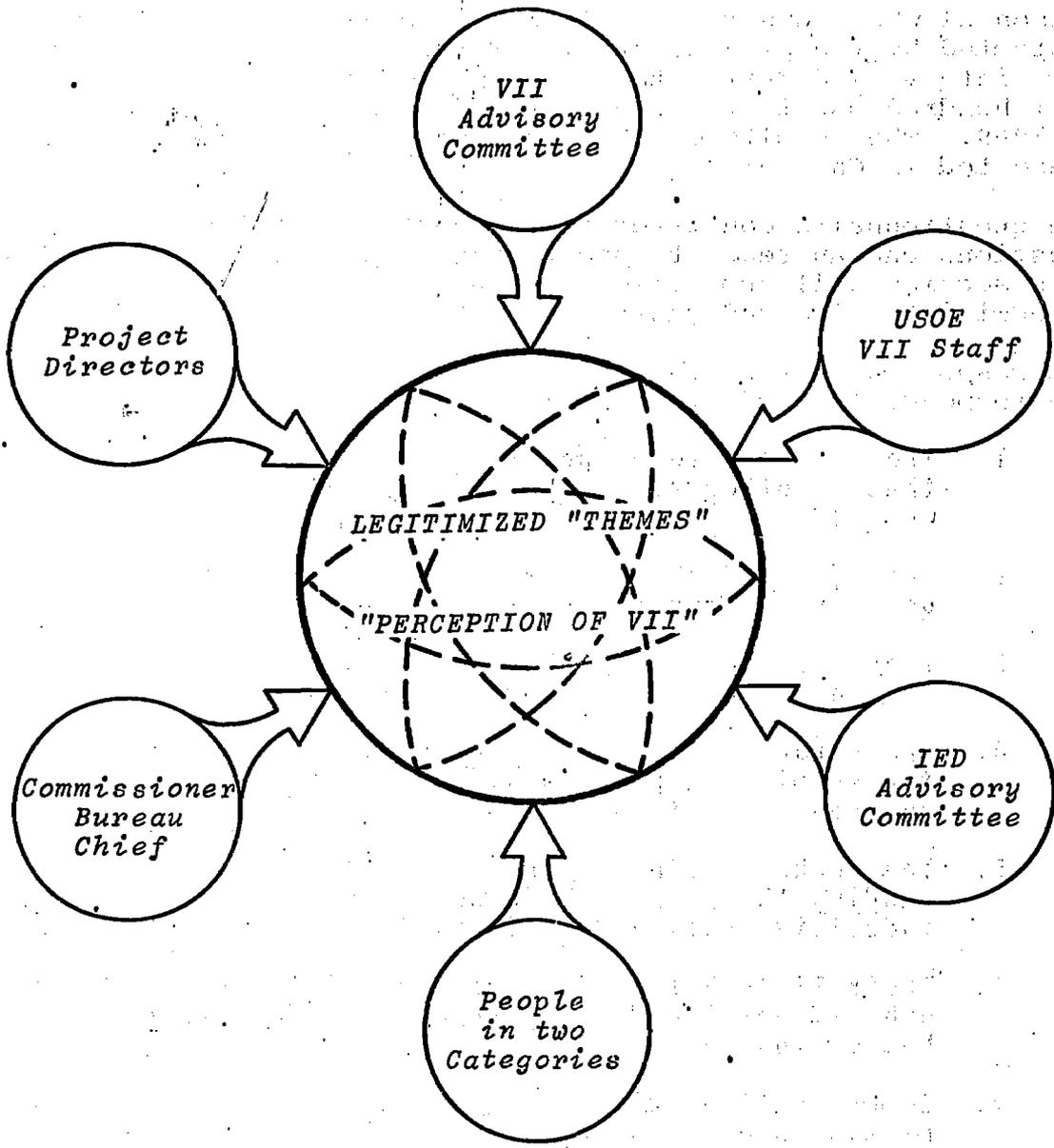
Fig. 1.   A Schematic of the Intersect
or Overlap Theory

Personnel who had served as Title VII project directors were contacted by the project staff. Thirty-one former directors were interviewed during the early phases of the study and four hundred and forty were surveyed by mail during the Fall of 1969. The results of the questionnaire survey were presented in Chapter XI.

The questionnaire consisted of two parts: a set of specific questions and an request opportunity for open-ended comments. This section will summarize the findings of both parts pertaining to administrative and management activities.

The responses to the questions indicated that a majority of the respondents perceived that:

1. Their access to proposal information was <u>as good as</u> that of other researchers (more felt was <u>better</u> than <u>worse</u>).

2. The opportunity to discuss possible proposals was <u>usually available</u>.

3. They learned mainly about the program <u>from colleagues</u> (a <u>minority</u> learned from USOE guidelines).

4. The strong points of the program were the <u>guidelines</u> for submitting proposals, <u>communications</u> with USOE, and <u>congeniality</u> of the USOE staff.

5. The weakest point in the program was the <u>delay in funding</u> the project (a minority cited vague or indecisive policy decisions).

6. Their Title VII project was administered <u>as well as</u> other federal and USOE projects. (More felt it was better than worse.)

7. Communications with USOE staff, guidelines for submitting proposals, and congeniality of the USOE staff were all recalled as good administrative practices. (Proposal review procedures were remembered with less favor.)

8. The most difficult situations mentioned by the directors in their relationship with Title VII personnel included:

delays in receiving appropriations and funding,

budget cuts for ongoing project,

vague or indecisive policy decisions, and

midstream modification of objectives and evaluation procedures.

9. Less than half of the project directors felt that their Title VII, Part A research had been translated into classroom practice.

10. Sixty percent felt the positive elements outweighed any negative factor and they would gladly participate in further similarly-funded research.

More than one quarter of the project directors felt that the Title VII activities had equally good and bad points but in general contributed to improved media use.

Ten percent indicated a small portion of the program had merit but the value of the activities in terms of cost was open to question.

Ten percent indicated that the planning and implementation were of a poor quality.

Responses to questionnaire items dealing with administrative and management questions, as well as responses to the entire questionnaire, are provided in Appendix A-38.

Out of 199 respondents, 63.3% thought that their findings and results were well disseminated. On the average 100 to 400 copies of each project report were printed. Many of those who felt that their results were not well disseminated provided comments in the open-ended section of the questionnaire. When Title VII, Part A directors were asked if their research outcomes had been translated into classroom practice, 59.4% answered that the results had not.

<u>Project Directors' Open-Ended Comments</u>

In addition to the structured questions about administration
and management, the project directors were also asked to
answer two open-ended questions in this area:

● <u>Question 1</u>

What specific suggestions would you make for
strengthening management practices of programs
such as Title VII?

The responses to this question were grouped as follows:

Longevity and Continuity of Staff

A major problem seemed to be the constant turnover and lack
of continuity among OE staff members.

Communication Between Project Personnel and OE Staff

Many project directors would have liked closer communication
between personnel and the OE staff. On-site visits and
closer liaison with OE staff members would have been
helpful to assure that the activity was valuable and use-
ful to both, and to help in understanding and solving
problems as they arose.

Flexible OE Stuff - Desired Characteristics of Staff

A staff that was not only more knowledgeable in the media
field, but that was also well organized and managed would
have been desirable.

Proposal Processing Time Table and Fiscal Procedures

Delays in funding decisions, either approving or rejecting,
were troublesome.

Dissemination of Findings

Some respondents felt that the methods for disseminating
information about the projects were inadequate.

Overall Approach to Carrying Out the Program

Both a programmatic approach to funding and relating re-
search to immediate school needs were emphasized by the
directors in connection with the overall approach to the
program.

● Question 2

> The administration and effectiveness of ten years
> of Title VII research and dissemination could have
> been improved most by:

The responses to this question were grouped as follows:

Theoretical Context for the Program

Although difficult to analyze, comments on the theoretical
context of the program seemed to stress improved knowledge of
the educational setting in which the medium was to be used
and a clearer concept and definition of educational media.

Planning and Follow-Through

More systematic planning, establishment of long-range
priorities, and incorporation of the outcomes of past
Title VII projects, were desired.

Staff Continuity and Management

The lack of continuity and direction among the OE staff was
cited (for the most part not by the same people who had
commented earlier on the problem).

Creative Dissemination of Results

A number of people felt that the program might have had
greater impact if the "fruits" of the projects had been
disseminated in specific ways. Translating research
findings into "practical and useful" methods and practices
seemed to rank high on the list. It was suggested that
an R&D center in media research be established to support
expanded research and dissemination. In a related sense
some researchers commented on the lack of communication
and coordination among projects.

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Interviews With USOE Staff

Both personal and telephone interviews were held with staff
members responsible for administering Title VII during its
ten-year life. In addition, information was also solicited
and obtained from Bureau of Research heads and those who
held positions of Deputy Commissioner or Commissioner from
1958-1968. A list of the personnel interviewed is provided
on page 153.

The individual interviews suggested categories for the
development of a formal interview instrument. This ques-
tionnaire was then sent to respondents before the telephone
interviews. The questionnaire is reproduced in the appendix
of this report. (see Page A 60)

Summary responses to various questions asked in both personal
and telephone interviews are reported below:

Adequacy of the Legislation

- The legislation originally was written to provide
  an adequate base and realistic parameters for the
  development of new techniques in education. If the
  bill had a shortcoming, it was in having dimensions
  which were too broad and in lacking the less than
  precise definition of "media."

- Categorical aid was helpful but it also tended to
  encourage the development of a particular lobby,
  the media manufacturer. In retrospect, however,
  although media provided the entry point, the total
  program carried out broad research and dissemination
  reaching into most areas of education. Categorical
  aid did serve to "protect" the funds and permitted a
  "media thrust" to develop.

- When introducing innovative ideas or approaches, a
  categorical specification can be useful. This allows
  the approach or idea the opportunity of getting a
  foothold. In the case of Title VII, the 1958
  legislation permitted enough flexiblity so that
  "variations on the theme of media use" could be
  explored at many levels.

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- The legislation did not really speak to the
  equipment acquisition problem. Any restrictions
  that were imposed arose from general regulations
  and the limitations suggested by the Advisory
  Committee. ESEA equipment titles took up any
  slack that may have existed in Title VII speci-
  fications.

- Fortunately, sufficient funds were available to
  support the program because there was adequate
  interest in, and impetus behind, the available
  good ideas. This would not be the case today
  due to the greater number of "good ideas" and
  the growth of the media field.

- The legislative objectives as written were rather
  successful. Research was realistically pursued,
  educators' awareness of media was enhanced, and
  media use was expanded, thus acting as an important
  agent for change.

Organizational Considerations

- The general reaction of former staff members was
  that the media branch was located about as high
  in the organizational hierarchy as possible. As
  a categorical program, its location in the Bureau
  of Research was fortunate. However, an improved
  position on the organizational chart might have
  helped during competitions for research monies
  with such offices as that of Cooperative Research.

- The reorganizations that took place within the
  Office of Education during the life of Title VII
  tended to be viewed as disruptive to program con-
  tinuity and to inhibit sound goal-setting behavior
  on the part of the staff and the guiding public.

- The 1965 reorganization had a crippling effect
  just at the time when the "fruits" from earlier
  years of the program were being harvested and
  could have provided instructive guidance for
  future program and project planning within the
  original Title VII structure.

- Title VII was perceived by the staff to have a
  slightly lower priority than other programs within
  the office, but when viewed from the Commissioner's
  level, it was considered to be about as elevated
  as it could be, given the amount and level of

funding, categorical nature, etc. Overall support
from above was thought to be good but the staff
members indicated that a more positive support
from the Deputy Commissioner would have been of value.

● The informal, internal communications mechanisms
that connected the Title VII office with agents
of media activities within the office seemed to
be good. Formal mechanisms, including the reor-
ganizations directed toward facilitating formal
interactions of related groups, never seemed to
work very effectively.

Administration of the Program

● The general consensus was that more staff was
needed to carry out the full-scale program.
Specific areas, such as adding personnel, were
suggested, including the inclusion of a contracts
officer who could deal with legal and fiscal personnel,
more people with expertise in the legal field,
and someone to handle information dissemination,
on a continuing basis.

● Personnel at the office level of the bureau and the
Commissioner believed the program was administerd
very well and in some instances more creatively
than other branches within the Office of Education.

● One of the most innovative administrative decisions
within Title VII, in the later stages of the program,
was the linking of library research, training,
dissemination systems (ERIC), and Part B in the same
division.

● The clustering of all media activities within one
office initially may have been self-defeating since
the idea was to spread media over many levels.
Currently, however, it would help if all media
throughout the USOE were coordinated and funded
through one office to avoid further duplication of
effort.

Available Monies

● Opinions of the staff seemed to be that there was
enough monies to support all of the "good" proposals
that were submitted, but that more monies could have
been used for the operation of the total program.

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Advisory Committee's Role

- The Advisory Committee was viewed by the office staff as being of little help as well as inappropriate. The only areas that were considered of minimal value were certain dialogues with the committee and their assistance in the political realm. More freedom in appointment of personnel with educational research and media expertise would have been helpful.

- Those members receiving more than one vote for "most valuable Advisory Committee member" included J. Carroll, R. C. Carpenter, Ralph McGill, and Wilbur Schramm. Those mentioned at least once included Margaret Devizia, Scottie Fletcher, Leland Hazard, and A. B. Vandemeer.

Field Readers

- The field readers, who performed primarily for Part "A" of the program, were remembered as "valuable," "irreplaceable," "playing a very important role," extending "the political base of the program" and helping to "speed up the selection procedures."

- The majority of those interviewed felt the task and personnel of the field reader group could not have been effectively replicated within the office. A minority expressed the opinion that with enough staff the requirement for field readers could have been minimized.

Dissemination

- Little consensus existed regarding the best and least effective means for disseminating information about the program or its products. Most agreed that the funds, staff, and the time available for this facet of the program was limited.

Projects With the Greatest Impact

- The USOE staff suggested a number of projects to be included in the category of those "with the greatest impact." The most important projects mentioned included: Texas Microwave Network, plans for R&D centers and regional laboratories, ERIC planning projects, National Instructional Television, and the programmed instruction studies as a group.

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- Although individual projects were considered to be important, it was also felt that the effect of the ten-year program must be viewed as a totality. Much of the program's output is only just now surfacing.

Suggestions for Future Programs of This Type by USOE Staff

- More staff should be provided to monitor contracts, perform fiscal and legal processing, and provide expertise in media use and equipment. Perhaps a separate bureau or division should be created for media.

- Funding levels should be designed to keep pace with the growth of a field once it takes off. This was not done within Title VII but was done for related programs.

- The program should be conducted in a far more systematic way with greater coordination between the Part A and Part B programs.

- The authority for decisions as to project funding should rest with personnel who are responsible for conducting the program.

- Better feedback mechanisms should be developed between the staff and the people in the field.

USOE TITLE VII STAFF CONTACTED

BRODERICK, Gertrude (P) (T)	MCPHERSON, James (P) (T)
BRIGHT, R. Louis (T)	MEANEY, John (T)
CLEMENS, Tom (P)	MOLNAR, A. (L)
EDLING, Jack (T)	NORBERG, Kenneth (P)
GORDON, Roger (T)	SIEBERT, Warren (W)
GUEDRY, Perry (T)	SPAULDING, Seth (W)
HALL, Roy (T)	STONE, C. Walter (T)
KOEING, Adolph (L) (W)	TORKELSON, Gerald (P) (T)
MCKEE, Guy (T)	VANDERMEER, A. W. (P) (T)
MCKEEGAN, Hugh (T)	

USOE COMMISSIONER - DEPUTY, BUREAU CHIEF LEVEL

BRIGHT, R. Louis (T)	HOWE, Harold (W)
DERTHICK, Lawrence (T)	KEPPEL, Francis (W)
FLYNT, Ralph (P) (T)	MCMURRIN, Sterling (T)

T = Telephone interview
P = Personal interview
W = Written response to questionnaire
L = Project liaison, Project Advisory Committee

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Administrative and Management Recommendations Based on a
Review of the Title VII Advisory Committee Minutes

The minutes of the Title VII Advisory Committee during
the ten-year period provide many insights into the concerns
of the committee. In all, 23 meetings were held. Three
of these meetings were devoted to the organization and
clarification of the committee's prior recommendations.
For example, at the Joint Meeting of the Advisory Committee
and the New Educational Media Study Section on January 26-27,
1967, many general policy recommendations and suggestions
for research were presented. Little attention was given to
administrative or procedural areas. The meetings held on
January 11-12, 1968, and May 9-10, 1968, were similar.

Thus, because so much effort was devoted to summarizing and
organizing at these meetings, the discussion below will not
review these three meetings, but concentrate instead on the
earlier meetings, at which procedural and administrative
issues were debated.

The following information and materials are taken from
minutes of the Advisory Committee over the ten-year period.
A few general areas can be grouped to provide some idea of
the committee's concerns during the program. These include:

- General Directions of Research

- Evaluation Process

- Internal Committee Functions

- Dissemination

- Small Grants

- Reorganization

General Directions of Research

- From the beginning of the program, "research and
  experimentation" were intended to cover a wide
  range of research techniques. Basic, developmental
  research for increasing and adding needed knowledge
  in the communications field was recognized, along
  with applied research, where the primary interest
  was in applying available knowledge, and action
  research, designed to complement the uses of the
  media for improved instruction.

Evaluation Process

- Operating within the established framework, the Advisory Committee's activities often seemed highly procedural due to a concern with mechanical operating matters such as length of proposals, terminations, resubmittals, etc.

- Additional evaluation concerns centered around research design, geography and institutions' participation.

Internal Committee Functions

- Internally, the Advisory Committee seemed always to seek ways to supplement their own recognized deficiencies. The minutes reveal that up to, and including March 1965, the committee attempted to streamline its procedural efforts. Committee members also were aware of their own dependence on readers and staff, and sought ways to prepare themselves better as an advisory committee-- suggesting additional technical staff and more briefings, and exploring the possibility of site visits by the committee. No references to these internal concerns appear in the minutes after the March 1965 meeting. This is undoubtedly due to the fact that from 1965 to 1968 the resources of the program and the committee were directed toward a policy-recommending role for media activities.

Dissemination

- Committee members appeared concerned and always alert to deficiencies in dissemination activities under Title VII. They themselves wanted to be better informed, and discussions often took place over expanding or improving Part B.

Small Grants

- There seems to be evidence that the Advisory Committee basically favored the small grant program and attempted to encourage its progress. Discussion centered on prompt action in negotiations and reasonable monetary limits.

- The possibility of a central small grant office and later channelling to appropriate programs was discussed in 1964. Two ideas received a favorable response from the committee beyond this basic idea;

these called for adjustments in the Title VII
small grant program of increased maximums for
funds and methods of expediting small grant
proposals.

Reorganization

- The 1965 reorganization efforts were reflected in
  the March and October meetings for that year.
  Committee members seemed uncertain about their
  roles during a number or discussions. In addition,
  some members felt obligated to make personal efforts
  to restore cut funds and advance the purposes of
  the program.

- The evaluation criteria that the committee used
  beyond staff reports seemed to include concerns
  for geographical balances as well as participation
  in funding, if at all possible, by those institutions
  sponsoring projects. In addition, members appeared
  to want evidence of actual educational value from
  projects. Committee members made considerable
  efforts in trying to arrive at a consensus regarding
  the merits of projects; only two votes were required
  to retain a proposal for further consideration.

- Dissemination was a major concern of the committee.
  Members attempted to give Part B good support and
  often indicated the need and value of more and better
  information to researchers and educators as well as
  the public in general.

Other Recommendations, Sources and Data

Two additional sources of ideas and data were used for this
chapter. As indicated in the section on the Title VII
Advisory Committee, three of the Advisory Committee meetings
were spent formulating suggestions and recommendations to
the Commissioner on the subject of the rapidly growing field
of educational technology. In some instances, these expressed
concern over the administration and management of programs
such as Title VII. Where appropriate, and where the sug-
gestions and recommendations were in accord with ideas put
forth by other categories of respondents, these recommendations
and suggestions have been included. The principal catalyst,
on the USOE staff, for organizing these recommendations and
assisting the Advisory Committee appeared to be Andrew R.
Molnar.

From its inception in April 1969, the Advisory Committee
created for this specific project has directed its attention
to the administration and management of Title VII, and has
also speculated on what types of legislation would improve
the impact of media on the classroom. Again in keeping
with the intersect theory, these ideas have been included
where they were in consonance with those from other categories.

WHAT CAN BE LEARNED FROM THE TITLE VII EXPERIENCE TO GUIDE THE ADMINISTRATION OF FUTURE PROGRAMS OF THIS KIND?

This study has tried to derive a balanced analysis of the administrative procedures and problems of Title VII by means of long interviews, questionnaires, or statements from each of·the groups who were in a position to know the Title VII program best.

Needing to deal with apparently variant and conflicting inputs, the study made extensive use of an "intersect theory of analysis" approach in an effort to approximate "objective reality." Using such analysis the areas of overlap (or intersect) are purposively searched out and serve as focal points for analysis. When faced with a profusion of opinions, this is a sound approach to use.

As expected, the comments and answers overlapped on certain key problems--notably on the functioning of the central staff and the Advisory Committee, the relationship of the committee to the Commissioner of Education, and the importance of the field readers. Moreover, there were differences of opinion on these matters, both within and between groups so an effort was made to identify the overlaps and to analyze the emerging patterns of consensus as well as of disagreement. In some respects, the differences were even more revealing than the points of consensus.

The following recommendations have been derived from this kind of "intersect analysis." The degree of agreement on the key problems and what to do about them, that is evidenced in all the sources, has been most encouraging to the project staff.

About the Central Staff

Concerning the central staff of a program committed to research, development, and application of innovative approaches in education, the following guidelines are suggested:

> *A guaranteed tour of duty longer than two years
> must be assured so that the professional staff
> will have an opportunity to review, evaluate,
> and modify the selection procedures based upon
> project outcomes. Provisions should be included
> to assure continuity, familiarity, and overlap for
> at least a portion of the staff with even the
> longest-lasting funded projects.*

It would be useful to have a careful review
and structuring of career development patterns
within the Office of Education in order to
attract and hold highly qualified personnel.
To help "capture" such personnel, a guaranteed
leave period, such as two months each summer or
four months every two years, might well be pro-
vided. By offering this to USOE personnel, the
individual is not faced with the diminution of
his professional standing, competence, or being--
placed at a competitive disadvantage.

Future programs designed to administer legislation
dealing with research and dissemination of inno-
vative approaches in education should include in
their staff some of each of the following types
of personnel:

- A person experienced in evaluating
  research designs.

- A person experienced in training people
  in the effective use of innovations and
  in their introduction into the class-
  room or lowest denominator of instruction.

- A person with practical experience in
  the use of educational technology or
  with innovative methods and techniques
  at the elementary, secondary, and higher
  education levels.

- A person knowledgeable in product develop-
  ment and of the technical requirements of
  the new approaches.

- A contracts and fiscal officer who would
  either be assigned to the project staff
  or maintain an "educational technology"
  desk in the contracts office, especially
  if the unique dimensions of the innovation
  (i.e., new equipment, etc.) require special
  contract arrangements.

The assumption here is that there is a concern with
providing salaried positions within the legislation
to adequately staff new programs for which monies
are appropriated.

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Provision might well be made to establish "visiting
chair" appointments in the Office of Education for
leaders from the fields of education, industry, and
research, who have expertise in educational tech-
nology or the area under concern. These persons
could serve as consultants to the staff as well
as to personnel in the field.

Incentives comparable to those commonly offered
should be established for professionals who are
competent and willing to devote the major portion
of their time to the combination and coordination
of research findings and developments, dissem-
ination, and implementation, rather than to
original research.

About the Advisory Committee. These guidelines are suggested
as a reflection of all the comments and constructive sugges-
tions that were surveyed regarding the Advisory Committee:

The concept of an Advisory Committee with broad
representation from different educational and
technology sectors seems to be a sound one to
incorporate in future legislation, but such a
committee should be used chiefly for policy and
programmatic guidance rather than project approval.

The tenure of an Advisory Committee member should
be at least three years in order to provide for
continuity and reassessment of earlier decisions
in light of the outcomes of the approved projects.
It would be valuable for the committee to meet at
least three times a year, two days at a time, rather
than twice a year so as to hopefully amortize their
potential in aiding such a program.

Future programs of this kind should benefit from
the availability of special task forces to sup-
plement the expertise of the Advisory Committee
and staff, and to provide broader representation
from the educational technology field as well as
greater ability to deal with substantive issues.
A task force, for example, might deal with the
specific area of individualized instruction,
interact with the Advisory Committee and staff,
and develop recommendations as to what needs to
be done and what attack on the problem appears
most promising. Such task forces could be con-
vened and disbanded as required, and certain
Advisory Committee members might serve on them
to provide a link with the main committee.

> *The Commissioner of Education might well have
> the right to appoint one or two short-term
> members to the Advisory Committee to satisfy
> emerging needs of the program or to provide
> specialized service of importance at a given
> time.*

> *Future legislation of this kind should clearly
> place final approval of projects under the
> jurisdiction of the Commissioner, who is
> responsible for them.*

About the field readers. The Title VII staff remembered
the field readers as "valuable," "irreplaceable," helping
to "speed up the selection procedures," and extending "the
'political' base of the program." The majority of the staff
felt that the competence and personnel of the field reader
group could not have been effectively matched or equaled
within the Office of Education. Appreciation for their
work was expressed also by members of the Advisory Committee.
It is worth noting also that the pattern of using "study
sections" of field readers to advise on proposals has worked
well in some of the most effective federal research programs,
and that such a system can provide useful representation from
the academic and industrial communities. It is concluded that:

> *Field readers should be used in a program of this
> nature, even if more staff members with research
> competence can be provided within the Office of
> Education.*

> *Furthermore, field readers should be retained for
> a long enough period to permit them to observe and
> benefit from the research outcomes of their deci-
> sions. This would substantially upgrade their
> decision-making competence.*

About the keeping of records. The Title VII project
revealed a surprising lack of completeness of record-
keeping on individuals who had been awarded projects.
An inordinate amount of time was required to locate pro-
ject numbers or the total number of dollars expended on
the various projects. Such useful information as the
number of doctoral candidates whose dissertations were
supported by Title VII or who held research assistantships
under various Title VII projects that helped them through
their graduate study does not seem to be available anywhere.
There is also very little recorded as to what publications
or other dissemination activities resulted from these pro-
jects. Documents published by the U. S. Office of Education,

ERIC Clearinghouse acquisitions, and the special project
undertaken by the North American Rockwell Corporation to
document Title VII, all point to serious gaps. As one
example of this, it is impossible to say with confidence
exactly how many projects--there are "somewhere" between
700 and 725--were conducted under Title VII. It is con-
cluded that:

> A system of accounting for and taking inventory for
> projects funded under future programs like Title VII
> should be established and maintained in keeping with
> recommended practices of good administration and
> management.
>
> It is also suggested that a record of projects
> turned down should be kept. Also the criteria
> that were applied in evaluating grants should
> be maintained in a fashion that would facilitate
> any future evaluations, reviews and analyses of
> the expenditures of federal funds.
>
> To assure appropriate and effective utilization
> of funds expended for any large scale equipment
> acquisition programs, checks and balances should
> be retained by the authorized and mandated agency.

About the general nature of such programs. Recommendations
emerged which would apply to a number of programs in this
area. If the intent of a program is to effect change in
the schools, and some expectation is identified in this
direction, then:

> Future legislation should require that all research
> efforts direct some portion of their energies to
> documenting how the project outcomes can be trans-
> lated into practice. It should be accepted that
> the researcher need not be the one who implements
> or applies the results of the research. Three
> different outcomes might be required: (1) a re-
> search report; (2) developed prototype products;
> and (3) a demonstration of utilization.
>
> Conversely, although the Title VII program provided
> for research and dissemination, there was little
> attempted in the way of feeding "use experience"
> data from the classroom back into the program to
> aid in continuing evaluation and to provide guidance
> for the funding of future projects. A number of
> vehicles might be utilized for this purpose.

The emphasis should be on fewer development funds
with a greater commitment to see those trends
carried through the entire Research, Development,
Application and Feedback cycle. The inclusion
of the essential Feedback process in an R.D.A.F.
cycle, as contrasted with only an R.D. and A.
cycle will provide "wisdom" for the intelligent
management of future programs.

Regional laboratories should get closer to their
public by keeping informed regarding what the
practitioners are doing and then analyzing and
reporting their findings. The appropriate ERIC
Clearinghouses might be given this responsibility.
Additional support should be provided to such
groups as the Education Products Information
Exchange which is devoted to this problem.

The legislation should provide for the formation
of large advisory committees representing state
departments of education, urban school districts,
universities, etc., not to evaluate projects but
to set or modify the guiding philosophy of the
program. Expected results could include relevance
testing, readiness feedbacks for OE, and a sense
of involvement in research that will predispose
favorable recommendations at the school level.

More projects should be initiated that require
an "accounting" by project directors or recipients
of funds regarding the administration of the pro-
gram, success with projects, impact on classroom,
dissemination of results, etc. The value of this
impact project must be viewed also in light of
developing these sensitivities in the field and
stressing the importance of accountability. As
observed in this Title VII analysis, professionals
are concerned about accounting for the outcomes
of their efforts and are willing to cooperate in
such ventures. In the past, however, they have
seldom been asked, nor have they been instructed in
processes for carrying out accountability activities.

New legislation should attempt to integrate current
fragmented laws and programs pertaining to the
technology which are now in effect and also provide
adequate funds for a rapidly growing field such as
this one.

WHAT CAN BE LEARNED FROM THE TITLE VII EXPERIENCE

TO GUIDE FUTURE LEGISLATION

About deriving maximum classroom effect from a research
program. Were the expectations for Title VII unrealistic?
Yes, if research and disseminated information about the
results were expected to lead to swift and sweeping changes
in the American classroom. Swift changes of any kind are
contrary to everyday experience with the American educational
system, and the hope that dramatic change could be brought
about simply by telling schools about research findings
is contrary to everything that has been learned about the
process of educational innovation.

There are indications that many who were involved with the
program felt that Part B was the weak link in Title VII.
This opinion needs to be closely scrutinized.

Certainly in terms of the visible "monuments" Title VII
left behind, the institutions built under Part B were more
visible than anything left by Part A, the useful results
of which are very hard to measure on a short time scale.
Although less was done than was desirable to make public
the results of Part A research, still the basic trouble
seems to have been less with the results obtained under
Part B than with the concept of Part B.

The Part B concept was based on a rational model of educa-
tional change: that if the school system is informed of
the results of educational research it will hasten to trans-
late them into practice. The question is whether this is
a realistic expectation?

In the last century we have seen a number of swift and
significant social changes arising from medical or tech-
nical innovation. For example, there was the development
of insulin, polio serums, and antibiotics. The production
of hog cholera serum was a turning point in the growth and
acceptance of the United States Agricultural Extension Service
program. The rapid acceptance of the automobile and of tele-
vision have led to great changes in the life styles of our
society. But in none of these cases was research translated
directly or quickly into popular, or even practical use.
The basic research was followed by a long period of develop-
ment, evaluation, and testing before a product could be

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presented for adoption. Furthermore, in many cases these innovations required little expenditures of effort from users.

Comparing the above described process of change with the type of change that Title VII was trying to bring about reveals vast and basic differences. One should note that even the difference between the way Part A and Part B of Title VII worked was great, not to mention their difference from other programs aiming at educational change.

This was due to the fact that Title VII could not concentrate research on a given area, product, or problem, nor fund adequately the transition steps between research and school use. Availability of information about the research did not guarantee translation into new practices. More was needed.

At best, information dissemination is not a quick or easy process. In the late 1930's the Mort studies at Columbia Teachers College estimated that 50 years would pass between the appearance of an educational idea and its wide acceptance as common practice. In recent years it has been found that once sufficient development of an idea has taken place, the diffusion of the innovation takes place much faster than the earlier Mort studies indicated. For example, the first known use of teacher's aides was in Bay City, Michigan, in 1952. By 1961 it was estimated that 9 percent of elementary and 18 percent of secondary schools were making at least some use of them. A recent study (Center for Urban Education, New York City) estimates that 200,000 paraprofessionals are now at work in the schools. Team-Teaching was being used by about 5 percent of secondary schools in 1955-56, while an estimated 12 percent used team-teaching in 1960-61. These innovations, of course, were not really the results of basic research; rather, they were administrative solutions to old problems which suddenly became more aggravated by the "baby boom" of the 1950's.

In contrast, consider the concept of teaching reading. Although substantial evidence was gathered that there might be a better way, teaching reading remained relatively unchanged for several decades. The materials available largely

determined how reading was taught in the schools, and reader
series and manuals maintained nearly nation-wide uniformity of
teaching methods despite the fact that (as Miles asserts in
his book Innovation in Education) only "One-third of a sample
of reading experts--peers of those who had prepared the materials--
had confidence that they were based on 'definite scientific
proof.'"

Some recent innovations in curriculum and instructional technology

In 1957 only 46 language laboratories were known to have
existed in secondary schools. There were an estimated 5000
of them in use in 1962. What happened to bring this about?
The tape recorder was relatively well perfected by 1957,
nonetheless later technical developments did make it simplier,
easier to use, and cheaper. Drill material was available
from years of use in oral classroom practice. Transferring
language drill from the teacher to a machine did not especially
threaten the teacher; it simply took away one of his most
tedious and time-consuming tasks making it possible for stu-
dents to practice by themselves. Therefore, a product was
available of a kind that the teacher wanted. But what really
made the difference was the massive infusion of federal funds
to help local school districts purchase equipment and the
availability of language institutes, and ready-made demon-
strations programs, to help the school personnel learn to
make effective use of such facilities.

It has been estimated that 90 percent of the high schools in
the United States adopted driver education in a span of 18
years. How and why did this come about so fast? For one
thing, because little research was needed before one could
begin. The materials and methods were neither new nor sophis-
ticated and consisted mostly of manuals of traffic laws,
cautions for safety, and practice at the wheel. Automobiles
were made available free of charge in most places. What made
the chief difference? There appeared enormous community pres-
sure, generated by parents' fears for their children's safety.
Moreover, there was strong support by auto dealers, local
governments, state highway departments, and insurance companies--
even to the extent of reducing premiums to teenagers who had
taken a driver education course. Without such broad and
strong community pressure, and shift in emphasis on the edu-
cational goals, adoption has not gone so fast. For example,

it has been noted that it took 60 years to get wide accept-
ance of the idea that pupils could learn something by study-
ing their own communities.

For years before the 1950's mathematicians had known that
other approaches to the study of mathematics had certain
clearly identifiable advantages over the approaches used in
American schools. The theory for a new approach was avail-
able. What was needed was a mammoth project in curricular
development. Money for this kind of project became avail-
able because of the new educational concerns of the late
1950's and, for the first time, leading scholars were will-
ing to devote time to developing a suitable curriculum,
rather than concentrating on basic research.

When the materials were ready, they entered the commercial
channels of distribution, and were presented to the schools
with the enormous prestige of leading scholars, with the
national interest apparently involved, and with a great
amount of federal money being made available for confer-
ences, workshops, and in-service teacher training in the
"new math."

The new curriculum of the Physical Science Study Committee
(PSSC) did not grow out of new research, but rather out of
the dynamic leadership of Professor Jerrold Zacharias of
M.I.T. In turn his leadership grew out of a general feeling
among scientists that high school graduates were coming to
the universities with inadequate preparation in science. Then
Sputnik unlocked the treasury. Between 1956 and 1959, 4.5
million dollars (equal to one full year's expenditure under
Title VII) were spent in designing, testing, and revising of
textbooks, teachers' guides, laboratory guides, and all sorts
of apparatus, films, and tests. These were tried out in
schools, and passed into the hands of commercial distribu-
tors in 1960. A total of 250 scientists, teachers, and
materials specialists worked on these materials. When they
were published a large amount of federal money was made avail-
able for teaching modern physical science to teachers in the
classroom. More than 2000 teachers were introduced to PSSC
physics by 1961. Estimates indicated that approximately one-
fifth of all secondary school physics students were studying
PSSC materials by 1963. Yet, even with all this effort of
development and application, slightly more than one-half of
the teachers who were brought to the institutes did not adopt
the new course.

Another case of educational "lag" time is evidenced in the
slow acceptance of the theory of programmed instruction.
It had been developed out of basic research in learning
completed long before Professor B. F. Skinner's famed 1954
article in the Harvard Educational Review drew so much at-
tention to it. That is, it had been known for a long time
that a student learned efficiently by practicing responses;
that some schedules of reinforcement worked better than
others for these responses; that it was useful to design
a learning exercise around a behavioral objective that
could be measured; and that it was possible to construct
an efficient learning experience by testing it on students.
One of the advantages of the programmed instruction process
was that basic and developmental research could go on to-
gether. What seemed to be called for, when Title VII came
into existence, was a very large and concentrated activity
in constructing and testing instructional programs which
would simultaneously improve both the theory and materials·
and then put it to use.

Considering its meager resources and the difficulty that it
had in trying to focus research, Title VII contributed con-
siderably to this task. What happened, however, was that
expectations for programmed instruction outran the materials.
The new method passed rapidly into commercial hands. A false
start was made with "teaching machines," thousands of which
were sold to schools before there were adequate programs for
them. Publishers offered programs that had not been adequately
tested. There were no concentrations of scholarly talent such
as had been gathered around the curriculum revisions, and no
general evaluation of materials. Schools adopted many such
materials, and promptly began to have doubts about their
quality and value. Simultaneously, teachers found that some
programs did not work well at all or else did not fit into
their curricula. Furthermore, there were no available funds,
as there had been for language laboratories, to help schools
buy the necessary materials. In addition, there has been a
certain amount of negative reaction to programmed instruction,
and presently it achieves only a fraction of its potential
contribution to instruction. The chief reason seems to be
an inadequate program of development and application to
school use.

Individualizing instruction is one of the main currents of
the present educational ferment in the overall movement to
fit a student's own pace, progress, and needs, and to con-
centrate the learning on a student's self-directed activity
rather than on cramming knowledge into him. Obviously, this
is immensely more complicated than, for example, the intro-
duction of a language laboratory, because it involves entirely

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new methods, materials, reorganization of schools, and
extensive experimentation. Indeed, it constitutes a very
broad current of innovation and therefore tends to be
resisted because it conflicts with the existing structures
of schools which are designed to handle large groups effi-
ciently. Individualization, on the other hand, requires
a quite different pattern of organization. Consequently,
although the general belief is that individualized instruc-
tion is the way of the future, it has barely come into use
in a significant number of schools.

The Commission on Instructional Technology, in their 1969
report, titled To Improve Learning, summed up some of the
reasons why innovation does not take place in the schools
more quickly than it does. For one thing, there is a "lack
of practical understanding" about the process of human learning.
(Charles E. Silberman, Director of the Carnegie Study of the
Education of Educators, wrote that "the degree of ignorance
about the process of education is far greater than I had
thought. Research results are more meager or more contra-
dictory, and progress toward the development of viable theories
of learning and instruction is far slower.") Secondly, there
is insufficient money available for innovation, thus only a
small fraction of school budgets is ever available for any
form of instructional materials. Thirdly, the structure
of today's school system--grades, courses, credits, depart-
mentalization--leaves limited leeway for any considerable
innovative change, not to mention the tradition of awarding
teachers' salary increases solely based upon longevity instead
of some measure of ability to obtain observable improvement
in student performance. When federal funds are pumped into
emergency needs, most of them are used to repair and maintain
the old system rather than to devise new systems and methods.

Looking more specifically at the obstacles barricading inno-
vation, the Commission on Instructional Technology has noted
that: (1) there is an indifference or antipathy toward using
technology in education (Professor Elton Hocking reported that
"Many administrators of school districts, colleges of education,
universities, or State education departments regard technology
as a kind of profanation of the classroom"); (2) the programs
and materials that are available are often of a poor quality;
(3) the existing new equipment that is being offered is inade-
quate (Howard J. Hausman, of the National Science Foundation,
wrote that "the hardware is really in a never-never land of
great promise and disappointing achievement."); (4) when a
school has obtained such materials as films and such tools
as projectors then far too often they are inaccessible to
the user; (5) teachers are usually not trained in taking

full advantage of instructional technology; and (6) it must be realized that the few media specialists that are on school staffs usually have very little to do with the central curriculum planning.

The lesson to be drawn--one that is strongly supported by the Title VII experience--is that there are many steps between an innovative idea that emerges from research and the successful use of such an innovation in the classroom. Telling people about research results is only a tiny step along the road.

As a matter of fact, Title VII developed several effective ways of "disseminating" results--notably the ERIC system, but also the system of abstracts and interpretive studies. But even if the dissemination effort had been more effective that it actually was, very substantial efforts would have to be made in the development, application, and feedback of experience data to guide further research and development. In another sense, Title VII, through its involvement of students in projects, also disseminated "know-how" about innovations. A review of Title A and B projects (where student numbers were listed) revealed 137,000 youngsters, from preschool through higher education, had clearly participated. Add to this total the number of preschoolers viewing Sesame Street, the over 17 million watching NITC programs, the large number of students involved in reuse of materials developed as part of the Part A activities or the Part B dissemination efforts (i.e., Pennsylvania State University), the total becomes very impressive. Necessarily, all of this would have had to intervene between research and the classroom. It's easy to expect too much of research. As an example, consider some of the steps that an innovative process might have to surmount after successfully emerging as a sample of Title VII research, not necessarily in this order, or including all these steps:

> Additional research, to remove the uncertainties and restrictions and to sharpen the idea to the point where it is ready for development.
>
> Development and testing of the software.
>
> Development and testing of the hardware.
>
> Reliable evaluation of both software and hardware, so that they could be confidently recommended as a working unit.

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Demonstration, so that the innovation could be
observed in action by potential users.

User training, if needed, for the personnel who
would use the innovation.

Securing financial aid, if needed, to help users,
such as school districts, acquire the materials,
equipment, or personnel required for use of the
innovation.

Making expert consultation available, if needed,
to help with local application and adaptation.

Provide for an ongoing system of feedback, to
broaden the evaluation of the new method or
materials by reporting back to the researchers
and developers information about actual use
"in the field." This would make possible further
revisions and improvements in the innovation.

Establish management structures and processes,
to facilitate the implementation of the inno-
vations. Some consideration must be given to
methods and means for providing the "river-bed"
in which the innovation may flow.

This long process, which is outlined above, has been
recognized by the chief students of innovation, and in
the principal plans established for speeding educational
change. For example, when California decided to make a
major effort to improve the teaching of languages, science,
and mathematics, with the aid of Title III funds, the State
Department of Education found it necessary to do a minimum
of three things: (1) share costs with local systems, (2)
furnish expert consultation to guide local systems in adap-
tation and modification, and (3) help local systems test the
effectiveness of their innovations. All this was deemed nec-
essary even though the particular program that was selected
picked up the innovative process at a point in time when
development of materials and methods was supposedly completed.

In this perspective, some of the most farsighted grants of
Title VII may have been those that helped establish the
research and development centers and foreshadowed the regional
laboratories which would carry on the research, development,
and application processes beyond the point where it had to
be left by Title VII. Another particularly successful example
of this type of Title VII contribution would be the support
it provided to institutions like the instructional television

libraries that would serve to validate and make easily
available superior instructional materials.

In retrospect, the legislation failed to provide adequately
for the steps beyond the initial research in the innovation
process. And it appears that a principal lesson to be learned
from Title VII experience, to guide future legislation, is
the following:

> Future legislation built on research and aiming at
> rapid educational improvement should provide mech-
> anisms for the integration of research into a much
> broader program for achieving change.

> In particular, the legislation might profitably
> make provision for research at different stages
> of the process--basic studies, development testing,
> application, evaluation and feedback from practi-
> tioners. It should provide, either within its own
> program or in close cooperation with other legis-
> lation, for such research-related activities as
> development of materials and equipment if needed,
> demonstration, guidance and assistance to school
> systems in acquiring necessary materials and
> equipment, and for the training of teachers to
> use them. It also might provide for sharing the
> expenditures of innovation and for cooperative
> activity with state departments of education
> and local systems.

These deficiencies in Title VII were recognized and considered
in later legislation such as ESEA and EPDA. The experience
gained from these later efforts should be incorporated into
any future legislation.

> In order to simplify the translation from initial
> research to the rest of the innovative process,
> it would be useful to require all research projects
> to devote some time to documenting how the project
> outcomes might be translated into practice. The
> researcher himself need not be the person who im-
> plements or applies the results of his research.
> Where appropriate, however, a contractual arrange-
> ment might call for a research report, dissemination,
> the development of prototype products, and their
> application to a practical situation.

About "categorical legislation." One of the questions most
frequently raised about Title VII is whether this kind of
categorical legislation is as productive as allocating the

same money into a general research program such as
Cooperative Research. The argument on one side is that
a highly focused research program in one area, such as media,
tends to be isolated from ongoing work on other aspects of
education. On the other side, it is argued that categorical
research is necessary to concentrate effort and to give a
boost to a specific field of educational study at crucial
times. Title VII seemed to satisfy proponents of both
viewpoints. It was specific but remained in the mainstream.

Little evidence could be found to suggest that Title VII
research suffered from the researchers not being involved
with what was going on elsewhere in the educational process,
or from being isolated from studies of the substance, as
distinguished from the method, of education. The categorical
quality was not found to be the chief restriction upon Title
VII. Rather, what acted as a restriction was the fact that
Title VII was organized with but an incomplete idea of the
innovative process which must account for all its component
parts. It is probable that categorical legislation of this
kind should have a limited life and then be absorbed into
broader programs, as Title VII was.

During its lifetime, Title VII clearly did give a boost to
the field of instructional media and technology, did bring
new people and institutions into the field, and did create
institutions to carry on after its expiration.

> Categorical legislation of the kind represented by
> Title VII can be useful in the future when it is
> desired to give a special push forward to some field
> or other specific aspect of instruction, provided
> that the legislation is not drawn so narrowly as
> to isolate the work done under it from the main-
> stream of educational ideas, research, development,
> and application.

About control over research topics. One of the features
of Title VII that proved wasteful in certain respects, and
frustrating to persons in the program who wanted to speed
innovation, was the requirement that the initiative for
Part A research proposals should come exclusively from the
proposers, and that the U. S. Office of Education or the
Advisory Committee should themselves take no initiative in
focusing and inviting research on a few key topics.

Any research program aiming at advancing a field of knowledge
should, of course, allocate some of its resources to men rather
than topics, and to promising research ideas whether or not
they fit into clusters of ongoing research. To do otherwise

would cut the program off from promising sources of new in-
sights. But the question is whether a mission-oriented pro-
gram should not be permitted to cluster a large part of its
research, thus enabling more efficient use of resources to
accomplish the mission. For example, a cluster of related
research projects would help to sharpen findings and would
lead more quickly into the development phase. The timing
for this type of activity would depend upon the maturity
of the field. If many new ideas are desired, then the less
constraint on the purposes the better. If a refinement of
a range of products already concerned is desired, then more
programmatic efforts are required. Title VII needed the new
ideas, initially. The research needed for later phases of
the innovative process--development, evaluation, application,
and dissemination--would also seem to depend on the effective-
ness of the central initiative.

The percentage of the research in a mission-oriented program
that should be free-wheeling is something that cannot be
estimated here. It seems clear, however, that efficient
advancement of such a program will require central commitment
or a greater part of the resources to limited priority lines
which are then more likely to be carried through from idea
to application. It is suggested that:

> *Limited resources will be used more effectively
> for research in future legislation of the Title
> VII variety if after new ideas begin to emerge.
> A considerable portion of them can be concentrated
> by developing a research program, focused on a
> limited number of high priority projects.*
>
> *A greater amount of control over the choice of
> priority areas for mission-oriented research
> might profitably be concentrated in the U. S.
> Office of Education or a comparable level of
> initiative, working with a task force of re-
> searchers and practitioners. And half the pre-
> rogative should be given to individual researchers
> to propose studies that do not cohere with other
> work, and consequently, do not necessarily con-
> tribute to the bulk of important knowledge. This
> procedure would tend to maximize the use made of
> available funding resources.*

About development of materials and equipment. Title VII
made almost no direct contribution to the development of
and less than might have been expected to the specific
production of widely used curriculum materials. For

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example, the large programs of curricular revision in the
late 1950's and 1960's went forward without much direct
help from Title VII. Title VII had little also to do with
the technical developments that promise to have a considerable
impact upon instructional technology—8 mm. film and film
projectors, cassette loading tape recorders, and inexpensive
videotape recorders, for example. Yet successful innovation
requires that materials and equipment of these kinds be made
available. It is suggested that:

> *Future legislation in support of educational
> innovation should provide funding (wholly or
> partly) for some high priority development
> activities at a level adequate to carry through
> all the developmental steps from conception to
> ultimate application by the general user.*

> *Such projects should not only allow for the
> original research and product development phases
> but should include provisions for initial periods
> of controlled use of the products in actual school
> or institutional settings so as to provide for
> effective feedback channels for product evaluation
> and subsequent redevelopment. Thus, when such
> feedback indicates needs for revisions or for
> additional software, then such improvements could
> be solicited from interested manufacturers. A
> development project involving hardware should
> thus also provide for a coordination link to
> assure more effective use of the resultant product.
> Close examination also should be given to how pro-
> grammatic product development is being undertaken
> in currently supported OE efforts such as the
> regional laboratories and R&D centers directed
> toward product evaluation.*

About making maximum use of existing knowledge. At the
beginning of Title VII, relatively little experience was
available with research programs such as those encouraged
by the National Defense Education Act. There is now a
considerable amount of such information and this should
be utilized in formulating any future legislation. One
of the things found out was that available knowledge in
the field was being inadequately utilized. The creation
of the Educational Resources Information Centers (ERICs)
was a useful, though incomplete effort, to remedy the
situation. As steps toward a more complete solution,
it is recommended that:

Any future legislation for research and
application studies should endeavor to take
maximum account of both the research that has
been done and the experience that has been
gained with regard to the subject matter to
which the act is directed.

The legislation should stipulate that an initial
study be conducted in which information about
the current state of the art should be compiled,
evaluated, and summarized for presentation in
forms usable at different levels, such as by
the researcher, the manufacturer, and the teacher.
Some agency similar to the regional laboratories
might well be used to research and gather field
experience data and compile it for feedback to
a central unit for processing and distribution.

The ERIC system might well be supplemented by
special units or task forces to process the above-
mentioned research findings for use at different
levels of educational needs.

About accountability. Although Title VII did stress the
idea of accountability and evaluation, future legislation
should do even more. Particularly, in terms of developing
better and more consistent schemes for accounting for
results..... reports of cost-benefits should be encouraged
in connection with innovations. Most professionals are
concerned about accounting the outcomes of their efforts,
and are willing to cooperate in such reporting, provided
meaningful methods are available. In the past, they have
seldom been asked to do so. Thus, it is suggested that:

Future legislation should stipulate that more of
the study contract projects require an accounting
by project directors of the accomplishments of
their projects including a precise statement of
goals and objectives sought, their impact on class-
rooms, the dissemination of these results, and so
forth. Cost-benefits measures should be fully
incorporated into projects that include the appli-
cation and use of an instructional innovation.
However, leeway should be provided occasionally
for the exploration of such project goals which
might not yield any impressive cost effective
outcomes.

APPENDIX

NDEA TITLE VII PROJECTS PART A

NAME	PROJECT	LOCATION	DATE	AMOUNT (in thousands)
ADKINS, Galo R. BR5-0077	A study of the critical requirements for directors in educational TV stations.	University of Kansas	1965—66	8
ALLEN, William H. A-422	A study of the non-linearity variable in filmic presentation.	University of Southern California	1960—63	49
BR5-0741	Audio implementation of still and motion pictures.	University of Southern California	1965—67	50
BR5-0867	A...dy of visual and auditory presentation in dental lecture and lab instruction.	University of Southern California	1965—67	73
BR5-1177	Learner response, feedback and review in filmic presentation.	University of Southern California	1965—67	68
BR5-1123	Motion variables in film presentations.	University of Southern California	1966—67	60
BR5-8350	Exploratory study of form perception as applied to the production of educational media.	University of Southern California	1966—67	9
BR6-1265	Effectiveness of different combinations visual and verbal presentation modes in teaching different kinds of learning tasks.	University of Southern California	1967—69	97
AMIRIAN, Gerard T. (Garry, Ralph) A-427	Retention by elementary school children of natural science material taught by TV.	Boston University	1960—61	18
ARCHER, N. Sidney BR5-0889	Assessment of five conditions of teacher-program instruction.	Department of Public Instruction Harrisburg, Pennsylvania	1963—65	174
ARCHER, N. Sidney A-961	Administrative and instructional adjustments resulting from the use of programmed materials.	Pennsylvania State Department of Instruction	1962—64	18
ASHER, James J. A-578	Sensory interrelationships in the automated teaching of foreign languages.	San Jose State College	1960—61	9
A-873	Vision and audition in language learning.	San Jose State College	1961—63	24
ATKINSON, Richard C. BR5-0684	An automated primary-grade reading and arithmetic curriculum for culturally deprived children.	Stanford University	1966—68	180
BAILEY, Judith A. A-534	Experimental investigation of the use of automated instructional devices in teaching elementary latin.	Hollins College	1960—61	3
BAKER, Robert L. BR5-0426	Application of Guilford's structure on intellect to programmed learning.	Arizona State University	1964—66	32
BALIN, Howard BR5-0802	Cross-media evaluation involving television and photography in the teaching of endoscopy.	Pennsylvania Hospital	1965—67	167
BARLOW, John A. A-143	New instructional media, self-instruction, guided instruction and the role of the teacher.	Earlham College Richmond, Indiana	1959—62	151
BAUER, Eric W. BR5-0423	Exploratory investigation of "Sensory Image Types" in foreign language learning.	Indiana University	1961	3
BEACH, Leslie R. BR7-E020	Learning and student interaction in small self-directed college groups.	Hope College	1967—68	9
BEAIRD, James H. BR5-0836	Increasing prediction of teacher's classroom behavior through use of motion picture tests.	Oregon State System of Higher Education	1965—67	62
BR5-0953	Audiosimulation in counselor training.	Oregon State System of Higher Education	1964	4
BEBERMAN, Max A-158	Study to determine the relative effectiveness of the use of a series of filmed demonstrations in teacher education for a new High School Math Curriculum.	National Educational TV and Radio Center New York	1959—62	254
BECK, Lester F. A-590	Assessment of some newly designed educational programs for the self-teaching of young children in school and at home	Portland State College, Oregon	1960—61	72
BR5-1120	Comparative study of current educational programs for pre-school children.	Oregon State System of Higher Education	1966—67	64
BECKER, Samuel L. A-739	Relationships of interest and attention to retention and attitude change.	University of Iowa	1961—63	8

NAME	PROJECT	LOCATION	DATE	AMOUNT (in thousands)
BELFORTE, John BR5-1082	Exploring ways to integrate audiovisual media with elementary school instructional practices.	Jefferson Elementary School District, California	1966	9
BENNETT, Ann BR5-1377	To index research projects suitable for making up termatrix search cards.	Self	1965—66	.28
BERGER, Emanuel BR5-0683	Assessment of three foreign language strategies utilizing three language laboratory systems.	Pennsylvania Depart- ment of Public Instruction Harrisburg, Pennsylvania	1965—67	161
BERN, H. A. BR5-0861	Improving the quality of teacher performance by use of the video tape recorder.	Indiana University	1959—61	66
BIDDLE, Bruce J. BR5-0627	Impact of media on the school as an institution.	University of Missouri	1962—63	154
BR5-0892	Essays on the social systems of education.	University of Missouri	1962—63	40
BIRCH, Jack W. A-773	The development and evaluation of programmed instruction in language for children with auditory disorders.	University of Pittsburgh	1961—62	12
(E. Ross Stuckless) A-978	Programmed instruction and the correction of written language of adolescent deaf students.	University of Pittsburgh	1962—63	18
BLACK, Harvey B. BR5-0871	Relevant and irrelevant pictorial color cues in discrimination learning — manipulation stimuli practice procedures and intervals, shape discriminatability, test procedure and age of subject.	Indiana University	1963—65	9
A-688	Improving the programming of complex pictorial materials.	Indiana University	1961—62	3
BR5-0878	The effect of observation of pictorial stimuli on Transfer Tasks.	Indiana University	1963—66	82
BLACK, William A. A-091	The effectiveness of filmed science courses in public secondary schools.	Kansas State College Pittsburg, Kansas	1959—60	82
A-625	Retention value of filmed science courses.	Kansas State College Pittsburg, Kansas		
BLACKMAN, Leonard S. A-368	Development and evaluation of a curriculum for educable mental retardates utilizing self-instructor devices or teaching machines.	Edward Johnstone Research Center	1960—63	176
BLOCK, A. Harvey BR5-8356	Test of the use of a program of instruction in basic math requiring only minimal reading skills for use as a remedial tool for college freshman.	Morgan State College Baltimore, Maryland	1966	9
BOGUSLAVSKY, G. W. BR5-0458	Study of characteristics contributing to the effectiveness of visual demonstrations.	Rensselaer Polytechnic Institute	1962—65	57
BOND, Jack H. BR5-0951	Using simulation techniques to change attitudes of education majors toward professional course objectives.	Oregon State System of Higher Education	1964—65	4
BORGLUM, George P. A-112	Modern language audio-visual research.	Wayne State University	1959—63	253
BORNSTEIN, Harry A-985	Development of a filmed program for teaching the manual alphabet.	Gallaudet College	1962—65	47
BRIGGS, Leslie J. A-683	Role of teaching machine programs in achieving educational objectives.	American Institute for Research, Pittsburgh, Pennsylvania	1961—62	88
A-946	Research in degree of student control over programmed instruction: Initial and cumulative effects of self-direction and self-evaluation of progress.	American Institute for Research, Pittsburgh, Pennsylvania	1962—63	66
A-1002	Investigations of thinking via self-instructional programs.	American Institute for Research, Pittsburgh, Pennsylvania	1963—64	42
BR5 0760	Increasing long-term retention of knowledge — methods of instruction for students of different ability levels.	American Institute for Research, Pittsburgh, Pennsylvania	1963—65	96

NAME	PROJECT	LOCATION	DATE	AMOUNT (in thousands)
BRYAN, Edward E. A-447	A comparative study in the teaching of high school chemistry and physics.	Oklahoma State Department of Education	1960–61	16
BUCH, John H. (Edward Tracy) A-759	A comparison of four variations of language instruction in boginning French.	Easton, Pennsylvania High School System	1961–63	31
BUCHANAN, Cynthia D. A-482	Investigation of principles involved in adapting linguistic materials for use with eutomatic instructional media.	Hollins College	1960–61	3
BUCHHEIMER, Arnold BR5-0870	Videotapes and kinoscopic recordings as situational test and lab exercises in empathy for the training for counselors.	City University of New York	1962–64	98
BURKHART, James A. A-250	Experiment to determine the values of using amplified classroom telephone interviews with significant individuals to enrich certain college courses.	Stephens College Columbia, Missouri	1959–60	16
BURRIS-MEYER, H. BR5-0646	Inquiry into the educational potential of non-verbal communications.	Florida Atlantic Ocean Science Institute	1968–70	216
BURROUGHS, Elaine L. A-535	Experiments with the applications of audiovisual and automatic devices to the teaching of French.	Hollins College	1960–61	3
CAMPBELL, Donald T. BR5-0893	Exploration of novel research designs and measurement techniques.	Northwestern University	1962–64	77
CAMPBELL, Vincent N. (Leslie Briggs) A-520	Studies of bypassing as e way of adapting instruction programs to individual differences.	American Institute for Research and Behavioral Sciences	1960–62	65
BR5-0717	Degree of student control over programmed instruction — long term cumulative effects on problem solving and transfer.	American Institute for Research and Behavioral Sciences	1964–65	80
CAMPEAU, Peggie L. A-1155	Level of anxiety and presence or absence of feedback in programmed instruction.	American Institute for Research and Behavioral Sciences	1964–65	4
CARPENTER, C. R. C-1058	Research report on operational plans for developing regional educational media research centers.	Pennsylvania State University	1961–62	25
A-567	Comparative research on methods and media for presenting programmed courses in Math and English.	Pennsylvania State University	1960–62	167
CARTER, Lemore J. A-272	Comparative study of the effectiveness of three techniques of film utilization in teaching a selected group of educable mentally retarded children enrolled in public schools in Louisiana.	Grambling College Louisiana	1959–60	21
CARTER, Roy E. A-891	A field experimental study of the functions of educational TV.	University of Minnesota	1962–64	44
CASE, Harry W. A-458	Measurement and analysis of physiological response to film.	University of California	1960–62	37
A-635	Basic properties of an automated teaching system.	University of California	1961–63	100
CATE, Charles A. A-361	Effectiveness of photographic media in the modification of children's classroom behavior and self concepts.	University of Florida	1960–62	39
CHANCE, Clayton W. A-243	Experimentation in the adaption of the overhead projector utilizing 200 transparencies and 800 overlays in teaching engineering descriptive geometry curricula.	University of Texas	1959–60	11
CHRISTENSEN, Peter B. A-344	Cinematographic method for teaching the concept of dental occlusion and articulation.	Loyola University	1959–61	7
CLINE, Marion, Jr. A-198	Improving language arts of bilinguals through audiovisual.	New Mexico Highlands University	1959–62	22
COBIN, Martin T. A-448	Development of new method to test the relative effectiveness of specific visual production techniques for instructional TV.	University of Illinois	1960–61	11

NAME	PROJECT	LOCATION	DATE	AMOUNT (in thousands)
COGSWELL, John F. BR5-0738	New solutions to implementing instructional media through construction of school simulation vehicle.	System Development Corporation California	1963—65	194
COHEN, David B. BR6-8670	Study of the efficiency of learning when both incidental and intentional learning occur simultaneously.	St. Leo College	1966—67	7
COHEN, Jozof BR5-0516	Studies in Mnemonic Programming.	University of Illinois	1965—66	8
COOK, H. Robert A-1018	Effects on learning of structural drills in Spanish broadcast via high frequency AM radio.	Indiana University	1963—64	4
COONEY, Joan BR8-0475	Television for preschool children.	National Educational TV, New York	1969	1,030
COOPER, Theodore B. A-280	Exploratory investigation of perceptual reactions of southern undergraduate Negroes to visual material depicting various groupings of ethnic subjects.	Florida Agricultural and Mechanical University	1959—60	12
CRAMER, H. Leslie BR5-0958	Intelligibility of compressed speech.	Harvard University	1965	9
CROSBY, Gladys A-391	Development and evaluation of perceptual materials for an individualized approach in ninth grade algebra.	Queens College	1959—62	34
CURTIS, H. A. (Kropp) A-385	Experimental analyses of the effects of various modes of item presentation on the scores and factorial content of tests administered by visual and audiovisual means — a program of studies basic to TV testing.	Florida State University	1960—61	40
DAWSON, Marvin A-1020	Role of context in learning pictorial materials.	Indiana University	1963—64	2
DAY, Willard F. A-676	Programming a teaching machine course in thinking and problem solving.	University of Nevada	1960—62	2
de SOLA PCOL, Ithiel A-083	The out-of-classroom audience of WGBH a study of motivation in viewing.	Massachusetts Institute of Technology	1959—61	80
DETERLINE, William A. BR7-1071	Development of a programmed course for group instruction of secondary teachers and administrators in the techniques of instructional technology.	General Program Teaching Palo Alto, California	1967—68	84
DEVAULT, M. Vere A-419	TV and consultant services as methods of inservice education for elementary school teachers of math.	University of Texas	1960—61	72
DEVITT, Joseph J. A-032	ID & evaluation on economical and practical method of proving intellectual stimulation to gifted pupils in small secondary schools through a TV instructional program.	Department of Education State of Maine	1959—62	227
DIMLING, John A., Jr. BR8-0479	Identification and analysis of the alternative for achieving greater TV program diversity in the United States.	Spindietop Research Center Lexington, Kentucky	1968	38
DOETKOTT, Richard BR5-0823	Development, testing and evaluation of a programmed method for the teaching of I.P.A. transcription.	Chapman College	1965—66	9
DOROUGH, C. Dwight (Martin Shapiro) A-551	Automated instruction of remedial English.	University of Houston	1960—63	50
DREWS, Elizabeth M. A-647	The effectiveness of special training with AV in changing aspirations of intellectually superior students.	Michigan State University	1961—63	116
BR5-0610	Effectiveness of audio-visuals in changing the aspirations of intellectually superior students. Phase II.	Michigan State University	1963—65	49
DRISCOLL, John P. A-365	The effects of mental retardation on film learning.	University of California	1960—61	12
DUROST, Walter N. A-120	Report on evaluation on "When is September?"	Pinellas City Public Instruction, Florida	1959	27
EDLING, Jack V. (Walter Snyder) A-221	Study of the effectiveness of audiovisual teaching materials when prepared according to the principles of motivational research.	Oregon State System of Higher Education	1959—63	60

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NAME	PROJECT	LOCATION	DATE	AMOUNT (in thousands)
EDLING, Jack V. BR6-2454	Experiments with education media designed to modify attitudes.	Oregon State System of Higher Education	1966—68	36
ENGAR, Keith M. A-575	Investigating TV distribution of visual aids on the University of Utah campus via low-power UHF.	University of Utah	1960—62	50
ENTWISLE, Doris R. A-1012	Four studies involving the use of programmed materials in engineering education.	Johns Hopkins University	1962—63	5
BR5-1370	Teaching engineering design, a study of jobshop.	Johns Hopkins University	1964—65	65
EVANS, Richard I. A-051	The University Faculty and educational TV hostility, resistance, and change, a social psychological investigation in depth.	University of Houston	1959—62	114
FATTU, N. A. BR5-0850	Variations in instructional media, processes, content and aptitude variables in relation to efficiency of cognitive goal attainment.	Indiana University	1962—64	112
FELDMAN, Shirley (Deutsch, D. P.) BR5-0737	A study of the effectiveness of training for retarded readers in the auditory perceptual skills underlying reading.	New York Medical College New York	1963—65	90
FERSTER, C. B. A-355	The role of review material in continuous programming with teaching machines.	Indiana University	1960	9
FLANDERS, Ned A. A-033	Development & evaluation of sound filmstrips for improving teacher-pupil contacts in the classroom.	University of Michigan	1959—62	53
FLEMING, Malcolm A-800	Influence of three teaching machine factors — feedback to programmer, participation by the learner, and feedback to learner on the production and utilization of science films.	Indiana University	1961—63	33
BR5-0512	Instructional illustrations — a survey of types occurring in print material for four subject areas.	Indiana University	1965—66	29
BR5-0447	Message design, the temporal dimension of message structure.	Indiana University	1965—67	19
FOLLIS, Lee A-269	The use of closed circuit TV to improve teacher effectiveness.	Fontana School District, California	1959—61	23
FRAZIER, Alexander A-298	Testing the effectiveness of Two-Purpose TV programs in contributing to both teacher and pupil learning.	Ohio State University	1959—60	35
FRITZ, John O. A-399	The effect on instruction of the complementary use of audiovisual media with modified patterns in the use of the teaching staff.	University of Chicago	1960—62	51
FRYE, Charles H. A-847	Group versus individual pacing in programmed instruction.	Oregon State System of Higher Education	1961—62	3
FULTON, W. R. (Omer Rupiper) A-192	Selected vicarious experiences versus direct observational experiences of pre-service teacher in the foundation areas of professional preparation at the University of Oklahoma.	University of Oklahoma	1950—61	75
GAGNE, Robert M. BR5-0425	The relationship of visual presentations to individual differences and effective learning and retention.	American Institute for Research, Pittsburgh, Pennsylvania	1963—65	60
GAMES, Paul A. A-863	Student response to linear and branching sequences in conventional and programmed televised instruction.	University of Ohio	1962—64	43
GARRY, Ralph J. A-031	The integration of science teaching by TV into the elementary school program.	Boston University	1959—60	83
A-527	An investigation of concept development in elementary school science teaching by TV.	Boston University	1960—63	84
A-428	Modern language project of the Massachusetts council for public schools, teachers training division, summary of research on "parlons francais," year two.	Boston University	1960—61	69
GILBERT, William M. BR5-0868	An investigation of the importance of the personal relationship and associated factors in teaching machine procedures.	University of Illinois	1962—64	50

NAME	PROJECT	LOCATION	DATE	AMOUNT (in thousands)
GILMORE, Aldon S. BR5-0667	Further dovelopmont, comparison, and evaluation of programmod instruction for retarded children.	University of South Florida	1965-67	108
GLASGOW, M. W. A-253	A study of the relative offoctivenoss of selected approachos to the in-sorvico education of toachors in the utilization of in-school radio and TV broadcasts.	University of Oklahoma	1959-61	57
GOLDEN, Ruth I. A-559	Effectiveness of instructional tapos for changing regional spoech patterns.	Detroit Public Schools	1960-62	30
BR5-0386	Effuctivoness of instructional tapos for changing dialect patterns of urban primary school children.	Detroit Board of Education	1965-67	72
GORDON, John M. BR5-0747	The offoctivenoss of four variations of programmod scionco matorials.	Michigan Stato University	1965	7
GORDON, Morton J. A-425	TV Education in olementary school speech Improvomont.	University of Hawaii	1960-62	18
GORDON, Oakley J. (Koith Engar) A-129	Challenging the superior student by making the study of Russian available in the elementary school curriculum via TV.	University of Utah	1959-63	106
GOTTLIEB, David BR5-0714	The elomentary school systom in rolation to teaching and learning mothods.	Michigan State University	1962-64	68
GRANT, Theodore S. A-064	TV in health sciences education.	University of California	1959-63	152
GROPPER, George L. A-336	Stimulating pupil participation in the learning procoss by techniques of suspenso anticipation, and competition in tolevised Instruction.	Metropolitan Pittsburgh Educational TV Station	1959-61	126
A-637	Instructional techniques for improving understanding of scientific principlos through televisod demonstrations.	Metropolitan Pittsburgh Educational TV Station	1961-63	127
A-872	Evaluation of procedures for "individualizing" group Instruction by tolovision.	Metropolitan Pittsburgh Educational TV Station	1962-64	105
BR5-0445	Programming visual presentations for procedural learning.	American Institute for Rosoarch, Pittsburgh, Pennsylvania	1965-66	63
BR5-0877	Experimental evaluation of mothods for improving conventional TV lessons.	Motropolitan Pittsburgh Educational TV Station	1964-65	80
BR5-0896	Experimental investigation of visual representation in instruction.	Metropolitan Pittsburgh Educational TV Station	1963-65	98
GROW, Earl S. BR6-8241	Large screen TV involving student learning, space saving, and faculty acceptance.	Marquette University	1966-67	8
GUBA, Egon (Willavene Wolf) A-875	Perception and TV – physiological factors in TV viewing.	Ohio State University	1961-63	61
BR5-0427	A study of eye movoment in TV viowing.	Ohio State Unive...	1964-68	167
HALL, Koith A. A-659	Investigation of programming principles as appliod to the production and utilization of filmstrips and filmstrip type materials in natural science.	Pennsylvania State University	1961-64	30
HANCOCK, John G. A-1024	Level of achiovement, rotention, and transfer of training in spelling as a function of mode of prosentation.	Bucknell University	1963	3
HANSEN, Duncan BR7-0071	Rosoarch and implemontation of collogiate instruction of physics via computor-assisted Instruction.	Florida Stato University	1966-68	237
HANZELI, Victor A-108	Comparative evaluation of two modern mothods for teaching a spoken languago.	University of Washington	1959-60	10
HARDAWAY, Charles W. A-988	Study of attitudinal changos of toachers and pupils toward educational TV and an onalysis of attitudos of various groups toward educational TV.	Indiana University	1962-63	7

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NAME	PROJECT	LOCATION	DATE	AMOUNT (in thousands)
HARRIS, Charles O. A-251	Development of problem solving ability and learning of relevant-irrelevant information through film and TV versions of a strength of materials testing laboratory.	Michigan State University	1959—62	65
HAYDEN, Joss BR5-0898	Animated serial sections — a teaching aid for oral histology and embreology.	Loma Linda University	1965—66	5
HAYES, Robert B. BR6-2179	Immediate learning reinforcement in a complex mental motor skill (driver training) using motion pictures.	Harrisburg School District, Pennsylvania	1966—67	12
HEAD, Sydney A-060	Field experiment in the summertime use of open-circuit TV instruction to bridge the gap between high school and college.	Miami University	1959—61	63
HERRICK, Merlyn C. A-674	The effect of problem-setting questions on rate and amount of learning in programming teaching machines.	Indiana University	1961—62	2
HICKEY, Albert A-899	Requirements for graphic teaching machines.	Northeastern University	1961—62	33
HOBAN, Charles F. A-523	Determinants of audience formation and reactions to early-morning TV college credit courses.	University of Pennsylvania	1960—63	86
BR5-0837	Determinants of adult enrollment in televised college — credit courses, social characteristics and reactive behavior.	University of Pennsylvania	1963—65	47
HOFFMAN, Lee BR5-0750	Learner-participation techniques in a programmed course on elementary government and civics via TV.	Tulane University	1963—64	48
HOWE, Harold B. A-259	Development of animated films to facilitate creative space perception.	Rensselaer Polytechnic Institute	1959—61	37
HUGGINS, William H. BR6-2816	Exploratory studies of two kinds of films of engineering education.	Johns Hopkins University	1967—68	35
HUNT, Lyman C. A-309	Experimental project appraising the effectiveness of a program series on reading instruction using open-circuit television.	Pennsylvania State University	1959—61	77
HUNT, William A. A-1075	The use of programmed instruction in introductory psychology for teachers.	Northwestern University	1963—64	3
IVEY, Sara A-278	Study of closed-circuit TV as a teaching technique for speech improvement in the public school system.	University of Arkansas	1959—60	21
JACKSON, John R. A202	Improvement of biology instruction through use of recorded lectures to increase contact between students and senior staff members.	Wayne State University	1959—60	75
JAFFE, Abram (Allan Barton) BR5-0739	Studies in the utilization of TV in the schools: a further analysis of data collected for the NY State regents educational TV project.	Teachers College Columbia University	1963—64	10
JENSEN, Paul H. BR5-1121	Self-evaluation in in-service teacher education.	Oregon State System of Higher Education	1966—68	147
JENKINS, Esther C. BR5-0886	The efficacy of videotapes and direct observation for teaching observational skills.	University of Hawaii	1964—65	10
JOHNSON, Charles E. A-324	Development of methods and materials to facilitate foreign language instruction in elementary schools.	University of Illinois	1959—61	92
A-710	Development and evaluation of methods and materials to facilitate foreign language instruction in elementary schools.	University of Illinois	1961—62	51
JOHNSON, Donald W. BR5-0899	Educational psychology by videotape for in-service teachers.	Pennsylvania State University	1964—65	10
JOHNSON, F. Craig A-374	Investigation of motion picture film and the program analyzer feedback to improve TV teacher training.	University of Ohio	1960—61	34
JOHNSTON, Roland E. A-240	Magnetic recordings and visual displays as aids in teaching introductory psychology to college students.	Drexel Institute Philadelphia, Pennsylvania	1959—61	28

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NAME	PROJECT	LOCATION	DATE	AMOUNT (in thousands)
JOYCE, Bruce BR5-1079	Exploration of the utilization of Personnel in the supervision of student teachers when educational media are employed.	Columbia University	1966—67	10
KAGAN, Norman BR5-0887	The interpersonal recall techniques in the counseling process.	Michigan State University	1963—65	120
BR5-0880	Interpersonal process recall technique.	Michigan State University	1965—67	175
KALLENBACH, W. Warren BR6-1303	Effectiveness of videotape practice teaching sessions in the preparation of elementary intern teachers.	San Jose State College California	1966—67	69
KARIS, Charles BR5-0773	The interactive effect of response per frame, response mode, and response confirmation on inframe S-R association strength.	Northeastern University, Boston	1965—67	35
KARLSEN, Bjorn BR5-0746	Teaching beginning reading to hearing-impaired children, using a visual method and teaching machines.	University of Minnesota	1964—66	71
KEENAN, Thomas A. BR8-0697	The Educational Network.	EDUCOM	1968—69	135
KELLER, Robert J. A-077	Closed-circuit television in teacher education.	University of Minnesota	1959—63	286
KERSH, Bert Y. A-907	Directed discovery versus programmed instruction: A test of a theoretical position involving educational technology.	Oregon State System of Higher Education	1962—64	15
BR5-0848	Classroom simulation — further studies on dimensions of realism.	Oregon State System of Higher Education	1964—66	45
A-886	Classroom simulation — a new dimension in teacher education.	Oregon State System of Higher Education	1962—63	17
(Twelker) BR5-0774	Successive vs. simultaneous attainment of instructional objectives in classroom simulation.	Oregon State System of Higher Education	1965—67	78
KETCHAM, Carl H. A-378	Experiment to determine the effectiveness of motion pictures with sound in the teaching of materials which cannot be directly portrayed in visual images.	University of Arizona	1960—63	11
KINNIELL, W. T. BR5-0351	The testing and modification of overhead projection transparencies for special use with classes for the deaf.	Texas Educational Agency	1965—67	75
KLAUS, David J. (Lumsdaine) A-337	Self-instructional supplements for a televised physics course, study plan and experimental design.	American Institute for Research in Behavioral Sciences	1959—61	96
BR5-0712	Development and evaluation of procedures for using self-instructional media to develop student capability for independent thinking and judgment.	American Institute for Research in Behavioral Sciences	1960—62	69
KEISLAR, Evan R. BR5-0511	A "talking book" system of teaching beginning reading.	University of California	1965	7
KNOWLTON, James Q. A-038	Studies of patterns of influence in the school situation as they affect the use of A-V materials.	Indiana University	1959—62	42
KNUDSON, James G. BR6-2813	An investigation of the feasibility of the use of telecture and electrowriter systems to teach graduate engineering courses at remote locations.	Oregon State University	1967—69	26
KOVACS, Arpad BR5-0897	An analysis of the effectiveness of closed-circuit TV on team teaching.	St. Johns University New York	1965	10
KRAUSER, Arthur A-845	Development of abstract thinking in children through programmed instruction.	University of Rochester New York	1961—62	3
KRESS, Gerard C. BR5-1122	Study of social facilities during programmed instruction.	American Institute for Research in Behavioral Sciences	1966—67	30
BR5-0722	The effects of pacing on programmed learning under several administrative conditions.	American Institute for Research in Behavioral Sciences	1966	41
KRUMBOLTZ, John D. BR5-0851	Factors affecting the design of effective teaching machine programs.	Michigan State University	1961—64	61

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NAME	PROJECT	LOCATION	DATE	AMOUNT (in thousands)
LEE, Allan A-C-1057	Need for and feasibility of regional educational media research organizations with a regional research improvement orientation.	Oregon State System of Higher Education	1961–62	25
LEMKE, Olga A-491	The effectiveness of TV in teaching guidance at the sixth grade level.	Portland School Department	1960–61	3
LEVENS, A. S. A-686	Teaching the fundamentals of orthognal projection, a study in the film presentation of the thought model method.	University of California	1961–63	11
LEVIN, Gerald R. A-538	Principles of programming materials for teaching machines and their relation to transfer of training.	Brown University Providence, Rhode Island	1960–61	3
LEVINSON, Elias A-445	Effects of motion pictures on the response to narrative.	New York University	1960–61	2
LIVINGSTON, J. Sterling BR8-0447	Development of a multi-media course in economics for the U.S. Naval Academy.	Sterling Institute Washington, District of Columbia	1968–69	241
LOWELL, Edgar L. A-023	Experimental evaluation of AV methods-changing attitudes toward education.	John Tracy Clinic Los Angeles	1959–63	163
LUMSDAINE, A. A. BR5-0844	Automated instruction for procedural skills required by professional personnel.	University of California	1961–63	35
BR5-0883	Study of cueing on request or on a delayed response in automated instruction.	University of California	1961–62	2
LYBRANO, William A. BR8-0471	International uses of media and cross-cultural comparisons.	American University	1968–70	149
Mc BEATH, Ronald J. A-462	A comparative study on the effectiveness of the filmstrip, sound filmstrip, and filmograph for teaching facts and concepts.	University of Southern California	1960–61	3
MacDOUGALL, Mary A. BR6-1310	Methods of presenting programmed science materials to fourth grade level pupils of varying ability and achievement.	University of Virginia	1966–68	65
McINTYRE, Charles J. A-457	Televised instruction in university residence halls with trained undergraduates as discussion leaders.	University of Illinois	1960–64	141
BR5-0841	An application of the principles of programmed instruction to a televised course in college — economics.	University of Illinois	1964–65	10
McINTYRE, Kenneth A-332	Study to determine specific sources of resistance to the use of audiovisual materials by college and university teachers and the development of procedures for overcoming the barriers to optimum use.	University of North Carolina	1959–61	92
McKEEGAN, Hugh F. (Richard P. Wynn) A-939	Assessment of a graduate level self-teaching based on a combination of programmed instruction and the case method.	Pittsburgh University Pennsylvania	1962–63	3
McLUHAN, Herbert M. A-279	Understanding Media.	National Association of Education Urbana, Illinois	1959–60	35
McNEIL, John D. BR5-0503	Auditory discrimination training in the development of word analysis skills.	University of California	1965–67	39
MacDONALD, Neil W. BR5-0457	Television drama preference choice.	University of Minnesota	1964–65	7
MACCOBY, Nathan A-680	Sound film recordings in improving classroom communications.	Stanford University	1961–63	118
MAHLER, Thomas W. BR5-1107	An evaluation of the communications media used in the adult liberal studies program: Phase I.	University of Georgia	1959–61	13
BR5-1106	An evaluation of the communications media used in the adult liberal studies program: Phase II.	University of Georgia	1961–63	30
BR5-1105	An evaluation of the communications media used in the adult liberal studies program: Phase III.	University of Georgia	1963–64	23

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NAME	PROJECT	LOCATION	DATE	AMOUNT (in thousands)
MALLINSON, George G. BR5-0758	Programmed materials for the blind.	Western Michigan University	1963—66	10
MARTIN, Walter T. A-109	Oregon Educational Television Project	University of Oregon	1959—63	177
MARTINI, Harry R. BR5-0558	Development of filmstrip sequence photographs and sound reproduction of educational television presentations.	North Brandywine Junior High, Pennsylvania	1965—66	10
MARZOLLO, Frank BR5-1119	Methods of presenting programmed instructional materials by teaching machine and computer.	Michigan State University	1966—67	32
METCALF, Richard M. BR5-0422	Exploratory analysis of projection-standard variables (screen size, image size and image contrast) in terms of their effects on the speed and accuracy of discrimination.	University of New Hampshire	1961—62	2
MEYN, Constance F. A-1023	The effects of negative practice on the acquisition and retention of material in a self-instruction program of spelling.	Bucknell University	1963	3
MILLER, Thomas E. BR5-1078	Educational media in instructional systems development at the Ohio State University.	Ohio State University	1965—67	10
MILLER, William C. BR5-0731	The relationship of film movement and emotional involvement response and its effect on learning, etc.	University of Southern California	1965—66	6
MOAKLEY, Francis BR5-0424	The effects of relative sound increase and decrease in film mediated learning.	Indiana University	1965—67	4
MONOHAN, Patrick E. BR5-0748	Assimilation of new automated teaching methods into the school instructional repertoire.	Wisconsin Heights Joint District No. 1	1965	9
MOORE, J. William BR5-0757	Development and evaluation of a programming technique for relating frame difficulty to the ability of the learner.	Bucknell University	1963—65	40
(Wendell Smith) BR5-1381	Motivational aspects of automated instruction.	Bucknell University	1961—63	77
MORRIS, James H. A-107	Television Junior College in Oregon.	Oregon State System of Higher Education		
MORRISON, Arthur H. BR5-0884	Experimental study utilizing closed-circuit television in the teaching of dentistry.	New York University	1959—61	165
MYERS, Lawrence, Jr. BR5-0869	The identification of effective TV teachers.	Syracuse University	1962—65	71
A-161	An experimental study of influence of the experienced teacher on TV.	Syracuse University	1959—60	37
NASCA, Donald BR5-0718	Effect of varied presentations of laboratory exercises within programmed materials on specific intellectual factors of science problem solving behavior.	State University of New York	1964—65	19
A-1017	Effect of varied presentations of laboratory exercises within programmed materials on student ability to apply scientific principles to problem situations.	State University of New York	1963—64	12
NEIDT, Charles O. BR5-1118	The relationship of the new educational media to non-intellectual factors in learning.	Colorado State University	1966—67	32
A-C1000	The relationship of new educational media to non-intellectual factors in learning. Literature review of research involving non-intellective factors in learning.	Colorado State University	1962—63	33
BR5-0827	Use of videotaped instructional TV for teaching study skills in a university setting.	University of Colorado	1965—66	10
A-C1139	The relationship of New Educational Media to non-intellective factors in learning Phase II.	Colorado State University	1963—64	41
NELSON, Carl B. BR5-1084	Effectiveness of the use of adjunct programmed analyses of musical works on students' perception of form.	State University of New York	1966—67	33

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NAME	PROJECT	LOCATION	DATE	AMOUNT (in thousands)
OLIVER, G. E. A-130	Study of preservice teacher education in the use of media of mass communication for classroom instruction.	University of Georgia	1959–62	47
ORR, David B. A-1056	Factors associated with the rate of speech and learning.	American Institute for Research, Pittsburgh, Pennsylvania	1963–65	54
BR5-0801	Further research on speeded speech as an educational medium.	American Institute for Research in Behavioral Sciences	1965–67	144
BR7-0642	Time-compressed speech as an educational medium — studies of stimulus characteristics and individual differences.	American Institute for Research in Behavioral Sciences	1967–69	101
PAINE, Frank R. A-375	Student councils, investigation of their visual aids and utilization.	University of Mississippi	1960	30
PAINTER, William I. A-127	Production and use of classrooms on film versus traditional observations in teacher education.	University of Akron, Ohio	1959–61	31
PALMER, Edward BR8-0520	Development and validation of criteria for evaluating media training.	Oregon State System of Higher Education	1968–69	108
PARNES, Sidney J. BR5-0716	Programming creative behavior.	State University of New York	1963–66	60
PATRICK, Robert B. A-217	Measurement of the effectiveness of the documentary sound-film as a supplement in the teaching in the secondary schools.	Pennsylvania State University	1959–62	97
A-868	Effectiveness of the documentary sound film as a supplement in secondary school teacher education — a followup of first year teacher performance.	Pennsylvania State University	1962–63	27
PAULSON, Casper F. A-1083	Slow learners, competition, and programmed instruction.	Oregon State System of Higher Education	1963–64	4
BR5-0952	Relationship of two techniques for developing slide-tapes to their structure and effectiveness.	Oregon State System of Higher Education	1964–65	5
PEERSON, Nell A-417	Experiment with evaluation in the eradictation of adult illiteracy by use of TV instruction over a state education network supplemented by supervised group viewing.	Florence State College, Alabama	1960–61	66
PLUMPTON, Russel A. BR5-0751	Methods of determining pupil readiness for specific units of instruction presented through simulated environment media.	Board of Cooperative Education	1963–64	4
POLING, E. Gordon A-1235	Videotape recordings in counseling practicum.	University of South Dakota	1964	10
POPHAM, W. James A-470	Tape recorded lectures in the college classroom — an experimental appraisal.	San Francisco State College	1960–61	3
A-474	Tape recorded lectures in the college classroom — an experimental appraisal.	Kansas State College of Pittsburg	1960	2
A-841	The influence of novelty effect upon teaching machine learning.	San Francisco State College	1961–62	3
BR5-0201	The use of videotapes in teacher education.	University of California	1965–66	6
PORTER, David H. (Fred Bryon) A-1090	Immediate learning reinforcement in driver training through motion pictures.	Harrisburg, Pennsylvania	1963–64	14
BR5-0715	Immediate learning reinforcement in a complex mental motor skill (driver training) using motion pictures.	Harrisburg, Pennsylvania	1964–65	13
POULOS, Chris G. BR5-0720	Team teaching in high school biology via closed-circuit television.	Wisconsin	1964–66	8
PRICE, George W. BR5-0759	Effect of paried associate learning of contour cues and reducing irrelevant cues in the pictorial stimuli.	Indiana University	1964–66	4
PRICE, James E. A-670	A comparison of automated teaching programs with conventional teaching methods as applied to teaching mentally retarded students.	Partlow State School, Alabama	1961–62	3

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NAME	PROJECT	LOCATION	DATE	AMOUNT (in thousands)
RAMSEY, Curtis P., A-492	Research project for the development of a measure to assess attitudes regarding the uses of newer educational media.	George Peabody College, Tennessee	1960—61	5
RANDALL, Earle S. A-316	Foreign languages in elementary schools, television and film project — teacher training division.	Massachusetts Council for Public Schools	1959—60	57
RICH, Owen S. BR5-0843	Utilization of large-screen TV to overcome shortages of classroom space and teaching personnel.	Brigham Young University	1965—66	10
RICHARD, Scott T. BR5-8351	Application of audiovisual materials and simulation to modify the Harvard case study method for preparing student personnel administrators.	Indiana University	1966	9
RICHARDSON, John S. A-177	Development of a mobile laboratory for in-service education of teachers of science and mathematics.	Ohio State University	1959—61	90
RIPPLE, Richard BR5-0567	Relationship of anxiety creativity and intelligence to programmed learning.	Cornell University	1965—66	8
ROGERS, William R. A-093	TV utilization in the observation program for teacher education.	San Jose State College	1959—62	203
ROSEN, Marvin J. BR5-8332	Experimental design for comparing the effects of instructional media programming procedures.	American Institute for Research in Behavioral Sciences	1966—67	9
ROWLETT, John D. A-629	Experimental comparison of direct detailed discovery methods of presenting tape-recorded instruction.	Eastern Kentucky State College	1960—61	1
ROY, Rob BR5-1081	Computer aided instruction for a course in Boolean algebra and logic design.	Rensselaer Polytechnic Institute	1966—67	9
RUST, Gosvenor C. BR5-0845	Effectiveness of color photographs in programmed instruction.	Southern Illinois University	1961—63	3
SALTZMAN, Irving J. A-658	Construction and evaluation of a self instructional program in Russian.	Indiana University	1961—63	87
SANDEFUR, J. T. BR5-1009	Observation and demonstration in teacher education by closed-circuit TV and videotape recordings.	Kansas State Teachers College	1966—67	10
SARGEANT, Leslie W. A-515	Comparison of the short-term effects of certain types of TV program materials.	Pacific Union College	1960—61	2
SAUL, Ezra A-694	Effect of selected spatial design factors in educational displays on learning and retention.	Tufts University	1961—62	3
SCHALOCK, Henry D. A-971	Motion pictures as test stimuli — an application of new media to the prediction of complex behavior.	Oregon State Systems of Higher Education	1962—64	54
SCHLESINGER, Lawrence E. A-1027	Effect of relevant emotional content on performance and learning in programmed instruction.	George Washington University	1963—65	39
SCHRAMM/OBERHOLTZER A-354	Denver-Stanford Project: Four years of research on the context of ITV.	Denver-Stanford	1960—64	321
SCHUELER, Herbert A-068	Improvement of student teaching — use of TV for improving teacher training and for improving measures of student teaching performance.	City University of New York	1959—63	161
SCHURE, Alexander BR8-0446	Development of a multi-media course in physics in the U.S. Naval Academy.	New York Institute of Technology	1968	375
SCHUTZ, Richard BR5-0459	Measurement procedures in programmed instruction.	State University of Arkansas	1962—64	45
BR5-0740	Reinforcement schedules in pacing reading rate and adjusting reading behavior.	State University of Arkansas	1964—66	28
BR5-0394	Synchronized filmstrips and tape recordings to stimulate observation in educational psychology.	State University of Arkansas	1964—65	10
SCHWARZWALDER, John A-085	An investigation of the relative effectiveness of certain specific TV techniques on learning.	Twin City Educational TV Corporation	1959—60	50

NAME	PROJECT	LOCATION	DATE	AMOUNT (in thousands)
SCREVEN, C. G. BR7-0138	Application of programmed learning and teaching systems procedures for instruction in museum environment.	University of Wisconsin	1967–69	142
SEIBERT, Warren BR5-0431	Correlational analysis of the effects of learner and linear program characteristics.	Purdue University	1965–67	45
BR5-0846	A study of motion pictures in educational and psychological testing.	Purdue University	1962–63	51
BR5-0815	Studies in cine-psychometry, factor analysis of audiovisual memory.	Purdue University	1965–67	86
SHELL, William B. BR6-8294	The differential effect of interim testing in the use of an auto-instructional program in an area of general science for teachers.	Auburn University	1966–67	9
SHEMICK, John M. A-1157	Study of the relative effectiveness of teaching a manipulative skill — a multi-media teaching program versus classroom demonstration with printed instruction sheets.	Pennsylvania State University	1963–64	4
SHORT, J. G. BR5-0721	An experimental study of sequencing strategies.	American Institute for Research Pennsylvania	1965–66	29
SIEGEL, Laurence BR5-0852	Study of the instructional gestalt in university courses presented by TV.	Miami University	1960–64	139
SILBERMAN, Harry A-968	Individual tutoring techniques for the development of programming methods and theory.	System Development Corporation, California	1962–64	105
(John Coulson) BR5-0719	Non-program variables in the application of programmed instruction.	System Development Corporation, California	1964–65	79
(John Coulson) A-671	Development and evaluation of self-instructional materials for under-achieving and over-achieving students.	System Development Corporation, California	1961–62	88
SKINNER, B. F. A-191	An analysis of the behavioral processes involved in self-instruction with teaching machines.	Harvard University	1960–63	250
S.IITH, Hope A-486	Viewing of oneself performing selected motor skills in motion pictures and its effect upon the expressed concept of self in movement.	University of California	1960–61	1
SMITH, M. Daniel BR5-0888	Non-wordal programming: a study of selected variables.	Earlham College	1964–65	12
BR5-0872	An exploration of non-wordal programming in mathematics and science.	Earlham College	1962–63	19
SMITH, Martin E. (Warren Seibert) BR5-0954	Prediction of effects with selected characteristics of linear programmed instruction.	Purdue University	1965	8
SMITH, Philip D. A-719	Knowledge of results and continuity of various techniques in presenting a filmstrip as factors in immediate learning and retention.	Bob Jones University Greenville, South Carolina	1961–63	3
SMITH, Wendell I. A-489	Programmed materials in mathematics for superior students in rural areas.	Bucknell University	1960–62	58
(J. William Moore) A-485	Size-of-step and achievement in programmed spelling.	Bucknell University	1960–61	2
BR5-0838	Learning sets in programmed instruction.	Bucknell University	1963–65	37
SNOW, Richard E. A-732	Importance of selected audience and film characteristics as determiners of the effectiveness of instructional films.	Purdue University	1961–62	3
BR5-0847	Factor-analytic study of instructional film learning.	Purdue University	1963–65	18
SOWELL, Katye BR5-0757	Effect of an aural increment in auto-instructional mathematical material for college students.	Florida State University	1965–66	5
SPENCER, William A. A-074	Teaching human psychology via a multi-channel data broadcasting system.	Baylor Medical College	1959–62	60

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NAME	PROJECT	LOCATION	DATE	AMOUNT (in thousands)
SPOHN, Charles L. A-876	Evaluation of two methods using magnetic tape recordings for programmed instruction in the elemental materials of music.	State University of Ohio	1962–63	57
BR5-0540	Comparison between different stimuli combined with two methods for providing knowledge of results in music instruction.	State University of Ohio	1963–65	87
STAKE, Robert E. A-753	Activity level and learning effectiveness.	University of Nebraska	1961–63	15
STARKWEATHER, J. A. BR5-0652	Computer science instruction in elementary grades.	University of California	1965–67	76
STREVELL, Wallace H. A-306	High school physics by TV — the Houston area project.	University of Houston	1959–60	59
STOLUROW, Lawrence BR5-0455	Psychological and educational factors in transfer of training. Learning how to learn several cue conditions.	University of Illinois	1962–64	71
BR5-0230	Psychological and educational factors in transfer of training — bibliography of studies of transfer of training.	University of Illinois	1964–66	149
BR5-0452	Comparative studies of principles for programming mathematics in automated instruction.	University of Illinois	1961–64	181
STROTHER, G. B. BR5-0842	Educational applications of management games.	University of Wisconsin	1965–66	85
SUCHMAN, J. Richard A-216	The elementary school training program in scientific inquiry.	University of Illinois	1959–61	79
SULLIVAN, Howard J. BR5-0744	The effects of selected film and counseling experiences on capable girls' attitudes toward college.	Oregon State System of Higher Education	1963–64	5
SUPPES, Patrick BR5-0679	Development of mathematical concepts in children.	Stanford University	1967	46
TEAHAN, John BR5-0785	Some effects of audiovisual techniques on aspirational level and ethocentric shift.	University of Wisconsin	1965–67	120
TENDAM, D. J. A-132	Preparation and evaluation in use of a series of brief films of selected demonstrations from the introductory college physics course.	Purdue University	1959–61	71
TICKTON, Sidney G. BR8-0235	Study of the use of new instructional media, with special attention to educational television.	Academy for Educational Development	1968	15
TIEDMAN, David BR6-1819	Information systems for vocational decisions.	Harvard University	1965–69	415
TIEMENS, Robert K. A-459	Comparative effectiveness of sound motion pictures and printed communications for the motivation of high school students in math.	University of Iowa	1960–61	3
BR5-0849	Analysis of the application of instructional media to a basic university speech course.	Wayne State University	1964–65	10
TINTERA, James B. A-008E	Analysis of methods in which application of new communications media may improve teacher preparation in Language, Science and Math.	Michigan State University	1959–63	109
TOBIAS, Sigmund BR6-2380	Response mode to programmed material and associative creativity.	City University of New York	1967–68	29
TOFFEL, George M. A-302A	Effectiveness of instruction by TV in teaching high school chemistry in Alabama schools.	University of Alabama	1959–60	8
TORKELSON, G. M. A-079	An experimental study of patterns for improving the preparation of pre-service teachers in the use of audiovisual materials and of effects on pupils.	Pennsylvania State University	1959–63	166
TORRANCE, E. Paul A-880	Development and evaluation of recorded programmed experiences in creative thinking in the fourth grade.	University of Minnesota	1961–64	55
TOSTI, Donald T. BR8-0448	Development of multi-media course in leadership for the U.S. Naval Academy.	Westinghouse Learning Corporation, New York	1968–69 ...	400
TRAVERS, Robert M. W. BR5-0456	Research and theory related to audiovisual information transmission.	University of Utah	1962–65	92

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NAME	PROJECT	LOCATION	DATE	AMOUNT (in thousands)
TWELKER, Paul A. BR5-0950	Prompting as an instructional variable in classroom simulation.	Oregon State System of Higher Education	1965—66	9
BR6-1117	Interaction analysis and classroom simulation as adjunct instruction in teacher education.	Oregon State System of Higher Education	1966—67	42
TWYFORD, L. A-283	New media for improvement in math and science instruction.	State University of New York	1959—63	101
VANDERMEER, A. W. A-224	Investigation of the improvement of educational filmstrips and a derivation of principles relating to the effectiveness of these media.	Pennsylvania State University	1959—63	28
A-225	Investigation of the improvement of educational motion pictures and a derivation of principles relating to the effectiveness of these media.	Punnsylvania State University	1959—63	36
VAN HORN, Charles BR5-0713	Investigation of the applicability of motion pictures to educational testing.	University of Illinois	1960—62	3
VLCEK, Charles W. BR5-0959	Assessing the effect and transfer value of a classroom simulator technique.	Michigan State University	1965	8
VUKE, George J. A-657	Effects of inserted questions in films on developing an understanding of controlled experimentation.	Indiana University	1961—62	2
WENDT, Paul R. A-396	Study to determine the extent to which instruction to university freshman in the use of the university library can be turned over to teaching machines.	Southern Illinois University	1959—63	57
BR5-0873	To test refinements in intrinsic programming in pictorial, audio, and performance frames to maximize the probability of desired terminal behavior.	Southern Illinois University	1962—65	31
WICKLINE, Lee E. A-279	The use of motivational films to favorably change the attitudes of high school students toward science and scientists.	West Virginia State Department of Education	1961—62	1
WIGREN, Harold E. BR6-2026	Survey of in-school closed-circuit TV and Instructional TV fixed services.	National Educational Association Washington, District of Columbia	1966—67	14
WILDS, Preston L. BR5-0839	Effectiveness of a programmed text in teaching gynecological oncology to junior medical students.	Medical College of Georgia	1963—65	117
WILLIAMS, Deloss E. A-471	The role of sponsored motion pictures in the high school.	University of Southern California	1960—61	1
WITTICH, Walter A. A-015	Evaluation of ways of training teachers to improve day-to-day classroom learning activities through uses of AV media.	University of Wisconsin	1959—61	85
WITTROCK, M. C. A-1107	The effects of verbal cues on transfer of training.	University of California	1963—64	9
WODTKE, Kenneth H. BR5-8334	Random versus ordered sequencing in computer-assisted instruction.	Pennsylvania State University.	1966—67	8
WOLGAMUTH, Dale A-453	Comparative study of three techniques of student feedback in TV teaching — the effectiveness of an electrical signal feedback.	American University	1960—61	11
WOOD, C. David BR5-0745	Comprehension of compressed speech by elementary school children.	Indiana University	1965	6
WOOLSEY, Frank M. BR5-0876	The use of two-way radio in graduate medical education.	Union University	1964—65	136
BR6-2745	Development, utilization and evaluation of graduate education by two-way radio active participation conferences.	Albany Medical College	1966	71
WEDBERG, Desmond P. A-685	Comparative investigation of the instructional and administrative efficiency of various observational techniques in the introductory course in education.	University of Southern California	1961—62	3
YOSHIMO, Roger (J. W. Perry) A-914	Study of the effects of automated information retrieval on university students.	University of Arizona	1962—64	56

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NDEA TITLE VII PROJECTS PART B

NAME	PROJECT	LOCATION	DATE	AMOUNT (in thousands)
ALLEN, James BR5-0228	The Cue Report.	State Education Department New York	1963–64	159
ALLEN, William H. B-135	Analysis of research being conducted under Title VII, of the National Defense Education Act and preparation of related visuals.	Pasadena, California	1960	1
B-236a	Preparation of a course of study for the research information theory portion of a course in educational media research.	University of Southern California	1963–65	16
ANDERSON, James A. BR5-8471	Equivalence of meaning among similar statements presented in print, oral and pictorial media.	Wisconsin State University	1967	5
ARNEST, Phillip G. BR5-1357	Film clip pavilion, Washington, D. C. creative arts studio Inc.	Creative Arts Studio, Washington, District of Columbia	1964	14
BARSON, John BR5-0990	A procedural and cost analysis study of media in instructional systems development.	Michigan State University	1965	211
BR5-1411	Instructional systems development – a demonstration and evaluation project.	Michigan State University	1965–67	268
BAUER, Eric W. BR5-0423	Exploratory investigation of sensory image types in foreign language learning.	Indiana University		3
BECK, Lester B-262	Interinstitutional teaching by TV in the Oregon State System of Higher Education.	Oregon State System of Higher Education	1962	29
BR5-0711	Educational media (TV) for the preschool child.	Oregon State System of Higher Education	1965	11
BR5-0285	Media, creativity and change.	Oregon State System of Higher Education	1966	5
BIDDLE, Bruce J. BR5-1343	The impact of new media on education and the society.	University of Chicago	1962–64	19
BIGGY, Virginia BR5-1192	Northeast regional instructional TV library project.	Eastern Education Network Massachusetts	1961–62	234
BR5-0266	The identification, coordinated exchange and distribution of quality instructional TV programming in the northeast region.	Eastern Education Network Massachusetts	1965–66	121
BILINSKI, John BR7-9006	A cost study of educational media systems and their equipment components.	General Learning Corporation Washington, District of Columbia	1967	82
BIXBY, Paul W. B-374	Campus school to a research and dissemination center.	Pennsylvania State University	1965	62
BLACKMAN, Leonard BR5-1342	Demonstration film on the use of self-instructional devices in a curriculum for educable mental retardates.	Johnstone Center Bordentown, New Jersey	1963–64	33
BLOCK, A. Harvey B-285	Programmed instruction and teaching machines – a national demonstration exhibit.	Columbia University	1962–63	295
BLOODWORTH, Mickey BR6-2536	Plan for the systematic and continual identification of schools in the U.S. making significant use of educational media in their instructional programs.	National Association of Education, Washington, District of Columbia	1966–67	111
BR5-0299	A plan for the systematic and continual identification of schools making significant use of newer media.	Department of Audio-Visual Instruction, National Education Association	1965–66	27
BOBONIS, Augusto B-074	Television for teachers in service.	University of Puerto Rico	1960–61	14
BOECKLEN, Warren BR6-1519	A computer study of the allocation of channels and placement of transmitters for 2500 megacycle fixed-station service in a metropolitan area containing many eligible applicants for licensing.	Audio-Visual Corporation of St. Louis	1966–67	32
BONDRA, George BR5-1197	Procedures for creating a media environment to help change teacher role from disseminating to guiding independent learners.	Mount Kisco New York	1965–67	181

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NAME	PROJECT	LOCATION	DATE	AMOUNT (in thousands)
BOWEN, William BR5-0987	A regional project to assist the planning and development of inter-institutional use of recorded materials and new media.	Southern Regional Education Board, Atlanta	1963--65	159
BRIGGS, Leslie J. BR7-1070	Sequencing of instruction in relation to hierarchies of competencies.	American Institute for Research in Behavioral Sciences	1967	15
BR5-1354	Development of motion picture films to disseminate information on teacher roles in classroom use of programmed instruction.	American Institute for Research in Behavioral Sciences	1963-64	143
BR5-0291	Instructional media — procedure for the design of multimedia instruction, a critical review of research, and suggestions for future research.	American Institute for Research in Behavioral Sciences	1965	26
BRONSON, Vernon B-160	The needs of education for television channel allocations.	National Association of Education Broadcasters	1961-62	66
BR5-1347	Standards of TV transmission, factors affecting microwave relay and closed-circuit transmission of educational materials.	National Association for Educational Broadcasters	1962	216
B-196	Developing human resources for educational TV, reporting of a survey of personnel in educational TV.	National Association for Educational Broadcasters	1962-63	48
BROWN, James W. BR5-0270	Educational media institute evaluation report.	National Association for Educational Broadcasters	1965-67	143
BROWN, Louis BR5-1157	Determine the feasibility of developing two coordinated distribution systems for audiotape recorded materials.	University of Colorado	1966-67	35
BROWNE, Duff BR5-0267	Investigation, development and dissemination of procedures and techniques helpful to interinstitutional use of TV and related media.	Education Board Atlanta, Georgia	1965-67	302
BRUGGER, John R. B-004	Survey of television equipment and facilities used for purposes of instruction by public schools, colleges, and universities.	Washington City Education Board Maryland	1959-60	22
BUSHNELL, Don D. BR5-1129	The computer: a new media for the improvement of instruction.	Brooks Foundation, California	1966	11
BUSWELL, Guy T. B-258	Identification of needed research on the relationship of newer educational media to fundamental problems of teaching and learnings.	American Education Research Association Washington, District of Columbia	1961-62	9
BR5-1013	Recommendations for reporting the effectiveness of programmed instruction materials.	American Education Research Association Washington, District of Columbia	1961-65	33
B-210	Study formulation, and dissemination of technical information on auto-instructional programs, devices and research.	American Education Research Association Washington, District of Columbia	1961-65	33
CAMPION, Lee ODCc	Fourth regional leadership conference to explore ways and means of disseminating information concerning new educational media.	National Education Association	1960-61	18
OCCd	Fifth regional leadership conference to explore ways and means of disseminating information concerning new educational media.	National Education Association	1960-61	14
OOCe	Sixth regional leadership conference to explore ways and means of disseminating information concerning new educational media.	National Education Association	1960-61	21
ODCf	Seventh regional leadership conference to explore ways and means of disseminating information concerning new educational media.	National Education Association	1960-62	17
BR5-0279	Cooperative state leadership in educational communication.	Colorado State Department of Education	1965-66	55

NAME	PROJECT	LOCATION	DATE	AMOUNT (in thousands)
CARPENTER, C. R. BR7-1142	Conditions and variables affecting the quality of instructional TV.	Pennsylvania State University	1967-68	40
B-159	Bibliography of human communications with special reference to the new educational media.	Pennsylvania State University	1960-61	2
CARROLL, John B. BR7-1069	Learning from verbal discourse in educational media.	Educational Testing Service	1967-68	15
COCHRAN, Lee W. B-254	Work-study conference on new educational media for National University extension association.	University of Nebraska	1961-62	8
COGAN, Morris L. B-260	Professional education of media service personnel preliminary edition.	University of Pittsburgh	1963-64	29
COHEN, Edwin G. B-035b	National instructional television demonstration.	National Educational TV & Radio Center	1962-63	262
B-035d	National instructional library demonstration.	National Educational TV & Radio Center	1963-64	253
CONNELLY, John W. B-106a	Findings and discussion on state laws dealing with the use of audiovisual instructional aids in the public elementary schools.	Washington, District of Columbia	1961-62	29
COX, Robert A. BR6-1431	Director of summer session courses on educational media for 1966.	Educational Media Washington, District of Columbia	1965-66	3
BR6-1570	Sources of information on educational media.	Educational Media Washington, District of Columbia	1966-67	11
CUTHBERTSON, Jack BR5-0993	Study and plan for the use of media in the preparation of administrators.	University of Ohio	1964-67	204
CYPHER, Irene F. B-029	A survey of the kinds of dissemination activities that hold the greatest promise for improving the use of new educational media in the public schools and institutions of higher education in New York State.	New York State Audio-Visual Council	1960-61	27
DAVIS, D. L. (Harold Wigren) B-00Ca	Second pilot regional leadership conference to explore ways and means of disseminating information concerning new educational media.	Phoenix, Arizona	1959-60	19
(Harold Wigren) B-00Cb	Third pilot regional leadership conference to explore ways and means of disseminating information concerning new educational media.	Norman, Oklahoma	1960-61	18
B-0CCg	Study of the impact of Office of Education regional leadership conferences.	Kent University	1962	1
DAY, James B-138	Plan for educational TV in Hawaii.	Station KQED San Francisco, California	1961-62	11
DeBERNARDIS, Amo B-007	Planning schools for new media.	Portland State College	1959-61	31
DE HAAN, Robert F. BR5-0988	Use and development of programmed materials and media in private liberal arts colleges.	Great Lakes College	1963-65	213
De KIEFFER, Robert B-083	Preplanning Title VII conference.	University of Colorado	1959	2
B-083a	Title VII research seminar, April 11-13, 1960, University of Colorado.	University of Colorado	1960	20
DETERLINE, William A. B-479	Instructional programming procedures, a programmed course in the basic methods and techniques of preparing programmed instructional materials.	Texas	1963	83
DREWS, Elizabeth BR5-1349	Summary information of film on the effectiveness of special training with audiovisuals in guidance and counseling.	Michigan State University	1963-64	25
DUKE, Benjamin C. B-134	Survey of educational media research in the Far East: Instructional uses and research direction — new media for instruction.	International Christian University	1960-62	28

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NAME	PROJECT	LOCATION	DATE	AMOUNT (in thousands)
DURSCHLAG, Stephen P. BR7-0421	Illinois Educational TV Project.	Illinois Television Communications Commission	1967—69	17
EBOCH, Sidney C. BR5-0264	Implementation of research strategies and tactics for demonstrations for newer media.	Ohio State University	1965	91
BR5-0296	Planning and dissemination conference on novel strategies and tactics for field studies of new educational media demonstrations.	Ohio State University	1965	23
ELY, Donald P. B-418	Survey of educational media research and programs in Latin America.	Syracuse University	1965	4
ENGAR, Keith M. BR5-0301	Utah survey on educational TV.	University of Utah	1964	24
EVANS, Richard I. BR5-0992	University faculty and innovation — theory, a research case history (TV) implications. A social psychological analysis in depth.	Houston Research Institute	1965	26
FELLOWS, James A. B-450	Educational communications system.	National Association of Educational Broadcasters	1965	76
FINN, James D. B-069	A study of the impact of present and predicted technological developments on education.	National Education Association Washington, District of Columbia	1960	4
B-069a	A planning conference for a study of the Impact of present and predicted technological developments on education.	National Education Association Washington, District of Columbia	1960	2
B-069b	Technological development and the teaching profession (with particular reference to the New Educational Media).	National Education Association Washington, District of Columbia	1960—63	212
BR5-0292	Instructional technology and media project.	University of Southern California	1963—65	339
FLETCHER, Scott BR5-1200	Study on the long-range financing of educational TV stations.	National Association of Educational Broadcasters	1964—65	50
BR7-0738	Study to analyze and evaluate various new ETV proposals in coordination with the second national conference on the long-range financing of educational TV stations.	National Association of Educational Broadcasters	1967	26
FLORY, John B-045	A survey of the needs for and developments in audiovisual devices suitable for educational use.	Society for Motion Pictures and TV Engineers	1960—63	24
FOLEY, Walter J. BR6-1502	Educational information project.	University of Iowa	1965—67	124
FORSOALE, Louis BR5-0297	Production of a motion picture and accompanying manual about the emerging role of 8 mm film in education.	Columbia University	1964—66	33
FOSTER, J. Edwin B-156	Five publications for the dissemination of information about the new educational media.	Educational Media Council, Incorporated New York	1961	4
B-156a	Preparation of two manuscripts of publications for the dissemination of information about the new educational media.	Educational Media Council, Incorporated New York	1962	4
BR5-1341	Series of study projects to assist in the development of national guidelines in the educational media field.	Educational Media Council, Incorporated New York	1961—63	177
B-157	National directory service for new educational media materials.	Educational Media Council, Incorporated New York	1961	18
BR5-1199	Pilot national directory and subdirectories for new educational media materials.	Educational Media Council, Incorporated New York	1961—64	513
FULTON, W. R. BR5-304	Self-evaluative checklist and criteria for evaluating educational programs.	University of Oklahoma	1966	38

NAME	PROJECT	LOCATION	DATE	AMOUNT (in thousands)
GARRY, Ralph BR5-1345	Economics of educational TV, a report on the national conference held at Brandeis University, Massachusetts.	Brandeis University	1962-63	3
GEMMELL, James BR5-0706	Programmed instruction for superior students in small high schools.	Clarion State College, Pennsylvania	1963	136
GERARD, R. W. BR5-0997	Computers and universities. A workshop conference presented by the University of California, Irvine, with the cooperation of the University of Michigan, Newport Beach, 1965.	University of California	1965	21
GERLACH, Vernon BR5-0269	Producing the 8mm self-instructional film, a demonstration kit.	Arizona State University	1965-67	41
GLASER, Robert BR5-0253	Learning research and development center.	University of Pittsburgh	1964-68	400
BR5-1355	Interface between student and subject matter.	University of Pittsburgh	1963-64	43
GLIESSMAN, David BR5-1195	Inter-university film project-developing titles, plan of utilization, and plan of evaluation for a series of problem-centered open-ended films to be used in teacher training.	University of Missouri	1964-66	18
BR5-0996	Inter-university film project — the production of five stimulus films to be used in teacher training.	University of Missouri Kansas City	1965-66	94
GODFREY, Eleanor P. B-081	Audiovisual equipment and materials in public schools and factors influencing their use.	Bureau of Social Science Research Washington, District of Columbia	1960-61	160
B-081a	Factors associated with use of audiovisual media vs. teachers in elementary and secondary schools.	Bureau of Social Science Research Washington, District of Columbia	1963-64	143
GOLDSTEIN, Harold B-269	National conference on the implications of the new media for the teaching of library science.	University of Illinois	1963	31
GOLDWYN, A. J. BR5-0287	An operating test of a pilot educational media research information center.	Western Reserve University, Ohio	1963-65	143
BR5-1185	Preparation of a thesaurus of educational terms.	Western Reserve University, Ohio	1966	51
GREEN, Allan C. BR5-1193	Planning and design of facilities to house the current trends in instructional methods and technologies.	Rensselaer Polytechnic Institute	1963-64	95
GREEN, Leroy A. BR5-0280	Educational technology dissemination project; a project in selected methods of disseminating information regarding educational media by state departments of education.	Colorado State Department of Education	1966	61
GREENHILL, L. P. B-229	Documentary motion picture report on the Pennsylvania State University System of televised instruction.	Pennsylvania State University	1962-63	21
GROSSMAN, Alvin BR5-0308	Development of an educational information retrieval system for the State of California.	California State Department	1965-67	209
GUNN, Hartford N. B-237	Demonstration for the use of FM radio networks to facilitate the conference technique of communication among institutions of higher education.	WGBH Educational Foundation	1961-62	39
GUSS, Carolyn (Margaret Rufsvold) B-OOE	A study to determine a feasible method of establishing bibliographic control of educational audiovisual materials for the purpose of informing teachers concerning available materials and their educational utility.	Indiana University	1959	5
(Margaret Rufsvold) B-OOEa	A conference on implementing a system for national bibliographic control of the newer educational media.	Indiana University	1960-61	15
HALL, Robert O. B-208	Content and pattern for the professional training, AV communication specialists.	California State College at Hayward	1962-63	34

NAME	PROJECT	LOCATION	DATE	AMOUNT (in thousands)
HAMILL, Patricia B-65	Directory of college courses in radio and TV in school year 1957-58.	American University	1957-58	5
B-154	Directory of college courses in radio and TV in school year 1961-62.	American University	196:-63	5
HANSON, Lincoln F. B-232a	Programs, a guide to programmed instruction materials available to educators by September, 1963.	Teachers College Columbia University	1963-64	22
B-232	A guide to programmed instructional materials available to educators by September, 1962.	Teachers College Columbia University	1962	11
HARBY, Samuel F. B-221	Study of audience response systems in teaching.	University of Miami Florida	1961-62	5
HARCLEROAD, Fred F. B-394	Development and an educational plan for the library-audiovisual services administration building for the California State College at Hayward.	Alameda State College	1963-64	25
HARLEY, William G. BR7-0739	Educational media council as a forum, dissemination, and consulting service an 18 month plan for self study operations and continuity.	Educational Media Council Washington, District of Columbia	1967-68	59
HARRISON, J. A. B-139	Survey of European research in audiovisual aids.	National Committee Audio-Visual Education	1960-62	21
HAZARD, Patrick D. BR5-0276	Feasibility study of the dissemination of information concerning the uses of newer communication in teaching English.	Beaver College Pennsylvania	1966	18
HILL, Harold BR5-0080	Mobilization of educational media resources to assist in federal programs of education and training.	Educational Media Council Washington, District of Columbia	1965-67	155
HITCHCOCK, Arthur A. B-176	National conference on guidance and the utilization of new media.	American Personnel and Guidance Association	1961-62	40
HOBAN, Charles F. BR5-1198	Survey of professional journals in the field of public communication and new media.	University of Pennsylvania	1965-67	59
HODGKINSON, Anthony W. BR6-1535	Investigation into the practice of screen education (the introduction of films and TV into education as an essential area of study).	Reading, Massachusetts	1967-69	78
HOLTZMAN, Paul D. BR5-0989	Interdisciplinary graduate programs in communications, a descriptive study.	Pennsylvania State University	1963-64	54
HOMME, Lloyd E. B-487	Demonstration of the use of self-instructional and other teaching techniques for remedial instruction of low-achieving adolescents in reading and mathematics.	TMI Institute New Mexico	1965	63
BR6-1530	Use of contingency for remedial instruction of low-achieving adolescents.	Westinghouse Management Service	1966-67	135
HUCKLEBERRY, Alan W. B-339	Steering committee conference to plan a 5-year elementary and secondary curriculum study using visual aids in the education of the deaf.	Ball State University Muncie, Indiana	1963	2
HULL, Richard BR5-0289	Two depth seminars on current status continuous census and projected uses of TV in education for the next decade.	North Central Association of Colleges and Schools.	1963-66	62
HYER, Anna L. B-063	Title VII research abstracting project.	Department of Audio-Visual Instruction	1961-62	19
B-063a	A 2-year educational media research abstracting project.	National Educational Association	1963-65	20
BR6-8424	Educational media research abstracting.	National Educational Association	1965	5
INGRAHAM, Rex B-305	Proceedings of the national conference on programmed audiovisual instruction in medical and dental education.	University of Southern California	1963	12
JACKSON, David M. B-072	Two films to demonstrate the use of film techniques in teacher education.	University of Illinois	1960-61	42

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NAME	PROJECT	LOCATION	DATE	AMOUNT (in thousands)
JOHNSON, Richard A. BR5-1000	Pilot demonstration of the application educational television to the inservice training needs of teacher of the mentally retarded.	Minnesota State Department of Education	1965–66	12
JORDAN, James BR5-0273	National Instructional TV library demonstration project.	Indiana University	1965–67	1,105
KEMMERER, Walter W. BR6-1246	Measurement and analysis of quality impairment in the transfer of recorded TV programs.	Twin City TV Corporation Minnesota	1966–67	21
KEMP, Jerrold E. B-191	National workshop in educational media demonstrations.	San Jose State College	1961–62	29
KENT, Allen B-170a	Preparation of a complete and exhaustive file of research abstracts in the educational media field.	Western Reserve University, Ohio	1962–63	44
B-170	Information service of educational research materials.	Western Reserve University, Ohio	1961–62	31
KIEFFER, Jarold A. B-152	Role and function of radio, TV film, and the other new media in the permanent program of the national cultural center.	National Cultural Center	1961–62	28
KINNIEL, William T. B-098, B-098a	Demonstration of the dissemination of information of new educational media by teacher demonstration teams.	Texas Educational Agency	1962–63	176
B-382	State demonstration and evaluation of development pilot overhead transparencies for the subject areas of secondary science, math, English, modern foreign languages and geography.	Texas Educational Agency	1964	83
KOMOSKI, P. Kenneth BR5-1184	Demonstrated project of programmed TV instruction	Teachers College Columbia University	1966	170
BR6-2012	Feasibility study of the potential of network TV as a distribution device for educational research information.	Teachers College Columbia University	1966-67	35
KONICK, Marcus BR5-0271	Demonstration model as a means to disseminate advancements in instructional uses of educational media.	State Department of Public Instruction Pennsylvania	1965–67	45
KNOWLTON, James Q. B-297	A socio and psycho linguistic theory of pictorial communication.	Indiana University	1963–64	11
KRESSE, Frederick H. BR5-0710	Material aids for teaching children, a project and evaluation multi-media kits for loan to elementary schools.	Children's Museum Boston, Massachusetts	1964–68	393
LAGRONE, Herbert F. BR5-0278	Project to improve the professional sequence in preservice teacher education through selective and planned use of new media.	American Association of Colleges for Teachers Education	1963–65	216
LANIER, Vincent BR5-0229	The uses of newer media in art education.	National Art Association Washington, District of Columbia	1966	68
LAWRENCE, Dick BR5-0278	Project to improve the professional sequence in preservice teacher education through selective and planned use of new media.	American Association of Colleges for Teacher Education	1963–65	215
LEWIS, Richard (Kemp) BR5-0707	Development of kits for presentations on educational media: Phase II.	San Jose State College	1965–66	97
LEYDEN, Ralph C. B-245	Planning of educational media for a new learning center.	Stephens College Missouri	1962–63	16
LIEBERMAN, Irving B-252	Recruitment and training of staff and support of staff dissemination activities at the American Library Association, Library 21, Exhibit Seattle World's Fair.	University of Washington	1961–62	110
LIPPITT, Ronald BR7-0028	Comparative study of literature on the dissemination and utilization of scientific knowledge.	University of Michigan	1966–68	114
LOHRER, Alice B-144	Identification and role of school libraries which function as instructional materials centers, with implications for training.	University of Illinois	1961–62	32

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NAME	PROJECT	LOCATION	DATE	AMOUNT (in thousands)
LOUBRIEL, Oscar B-194	Effectiveness of two university courses. Demonstrate the effectiveness of the use of TV as a means to broaden the education of teachers in Puerto Rico.	University of Puerto Rico	1961–62	54
LOVE, Pauline J. B-OOEb	Preparation, publication and distribution of "Guides to the Newer Educational Media, 1950–60."	American Library Association Chicago, Illinois	1961	3
LUMSDAINE, A. A. B-057	Experimental research on educational media.	University of California	1960–62	18
BR5-1340	Editing and camera copy preparation of a manuscript on education media research methodology.	University of California	1963	9
LUNGAARD, Harriet BR8-8050	Revision, amplification and continuation in 1968 of compilation and distribution of the EMC directory of summer session courses on educational media in a fifth annual edition.	Educational Media Council Washington, District of Columbia	1968–69	3
LUNSFORD, Terry F. B-284	Northwest conference on TV in education, April 23-24, 1962.	Western Interstate Commission for Higher Education	1962	3
LYBRAND, William A. BR7-1122	Exemplary utilization of innovative media systems — four case studies.	American University	1967–68	55
McBRIDE, Jack BR5-1010	Demonstration of instructional TV program exchange by the Great Plains Regional Library.		1965–66	155
McCLATCHEY, Merrill B-OOD	Filmed reports on the use of new media for instructional purposes in modern foreign languages, general science, and mathematics.	National Educational TV Radio Center	1959–63	117
B-OODa	A filmed report of teaching practices using new instructional media for instructional purposes in the field of mathematics.	National Educational TV Radio Center	1960–63	56
McCLUER, V. C. BR5-0302	Feasibility of a cooperatively owned multipurpose multichannel, closed-circuit TV system for instructional materials distribution and administrative data handling.	Audio-Visual Corporation St. Louis	1965	57
McDONALD, L. E. B-109	Application of newer communication media in correspondence study.	University of Texas	1961–62	17
McGILL, John E. BR5-1350	Survey of the development and use of TV recorded materials, films, and other simulated materials for application to teacher education in extending professional laboratory experiences.	University of Illinois	1963–64	9
McINTYRE, Charles J. BR5-0994	Study of the implications and feasibility of the full application of technological aids to the solution of staff, space, and curriculum problems associated with a rapidly growing urban university.	University of Illinois	1967	67
McKENZIE, Jack B-133	TV in medical teaching and research.	Institute for Advancement of Medical Communication	1961–63	46
McMURRAY, Glen BR5-1016	Southern California automated cataloging project.	University of Southern California	1964–66	113
MALTZMAN, Edward BR5-1410	National conference of the uses of educational media in the teaching of music.	Music Education National Conference	1965	74
MARS, Walter J. BR6-1565	Project to improve instruction in teacher education through the increased and better use of the new educational media.	American Association of Colleges for Teacher Education	1966–68	119
MARTIN, Ann M. BR5-1352	Study of regional instructional media resources.	University of Pittsburgh	1963–64	69
MAY, Mark A. BR5-0999	Enhancements and simplifications of motivational and stimulus variables in audiovisual instructional materials.	Hamden, Connecticut	1965	7
MEIERHENRY, W. C. BR5-1351	Media and educational innovation, a symposium on identifying techniques and principles for gaining acceptance of research results use of newer media in education.	University of Nebraska	1963–64	20

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NAME	PROJECT	LOCATION	DATE	AMOUNT (in thousands)
MEIR, Henry, W. C. B-035	Survey of the use of in-school telecast materials leading to recommendations as to their distribution and exchange.	University of Nebraska	1960–61	48
B-035a	Great Plains Regional Instructional television library.	University of Nebraska	1961–65	506
BR5-0730	Project to identify competencies needed by teachers in the use of the newer media and various approaches to achieving them.	University of Nebraska	1965	18
MILLER, Elwood E. BR5-0281	Development of practicable systems of film clips selection, packaging, storage, retrieval, information dissemination, distribution and projection.	Michigan State University	1964–67	287
MILLER, Harry L. BR5-0998	Patterns of educational use of a televised public affairs program. A study of metropolis — Creator or destroyer.	University of New York	1966	23
MILLS, Donald BR5-1363	Evaluation of an inservice television training program in math for elementary teachers.		1963–65	32
MITZEL, Harold BR5-1194	Development and presentation of four different college courses by computer teleprocessing	Pennsylvania State University	1964–66	219
MOLSTAD, John (Farris) B-086	Identify and describe present organizational patterns, practices, equipment, and facilities utilized in preparation of visual materials for public school instruction and an exploration of application of recent technology to this area.	Indiana University	1960–63	31
MORFORD, Leslie K. BR5-139	Study to determine the technical feasibility of interconnecting school districts in large geographic areas of low population density by electronic means for the provision of instructional and administrative services.	Central Michigan Education Department	1966–67	67
MORRIS, Barry B-222	Media demonstration and workshop for faculty members of teacher education institutions.	Florida State Department of Education	1961–62	21
MUKERJI, Rose BR5-0309	National demonstration project utilizing televised materials for the formal education of culturally disadvantaged preschool children.	United Planning Organization Washington, District of Columbia	1966	50
BR5-0312	National demonstration project utilizing TV materials for the formal education of culturally disadvantaged preschool children.	United Planning Organization Washington, District of Columbia	1966	206
MURPHY, J. Fred B-306	Report of eight dissemination conferences on the principles and practices in the uses of TV in education.	Association of College and Secondary Schools Chicago	1961–62	45
B-30	The uses of television in education.	Association of College and Secondary Schools, Chicago	1959	5
B-30a	Report of a pilot conference on the dissemination of principles and practices in the uses of TV in education.	Association of College and Secondary Schools, Chicago	1960–61	26
NOEL, Francis B-106	New Educational Media (including AV education) in State Departments of Education.	University of Southern California	1961–63	163
BR5-0295	States audiovisual education study, a summary report.	Sacramento State College		21
NORBERG, Kenneth D. BR5-0282	Iconic signs and symbols in audiovisual communication, an analytical survey of selected writings and research findings.	Sacramento State College	1966	17
B-083b	Pilot conference to explore ways and means of disseminating findings of research on news educational media.	Sacramento State College	1959–60	1
B-083c	Regional research conference on new educational media.	Sacramento State College	1960–61	15

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NAME	PROJECT	LOCATION	DATE	AMOUNT (in thousands)
NORTH, R. Stafford BR5-1002	Demonstration of the impact of certain instructional changes on the attitudes and practices of students and faculty.	Oklahoma Christian College	1965—67	72
OFIESH, Gabriel BR7-1042	State of the art study of dial access information retrieval.	Catholic University	1967—68	62
ORR, David B. BR7-9002	Analyses and evaluation of present and future multimedia needs in higher education.	American Institute for Research in Behavioral Sciences	1967—68	100
OXHANDLER, Eugene B-142	Instructional materials for teaching audio-visual courses.	Syracuse University	1961	7
BR5-0272	Computer simulation of a statewide film library network, a feasibility study.	Syracuse University	1965—66	57
BR5-1362	A conference to develop new dimensions for research in educational media implied by the "systems" approach to instruction.	Syracuse University	1963—64	27
BR7-0259	Prototype system for a computer based statewide plan film library network — a model for operation.	Syracuse University	1966—67	81
PARSEY, John M. B-083e	Pilot conference to explore ways and means of disseminating findings of research on new educational media.	Michigan State University	1960	3
B-083f	Regional work conference to develop a theoretical framework for new media research and application.	Michigan State University	1961—62	25
PETERSON, Edwin B-214	Pilot short-term workshops for training college teachers in the effective use of a new method of instruction in English composition using overhead projection.	University of Pittsburgh	1961—63	23
POMEROY, Edward B-084	National conference on teacher education and new media.	American Association of Colleges for Teacher Education	1960—61	33
POWER, Eugene B. B-145	Microfilm storage and dissemination of Title VII research projects.	University Microfilms Ann Arbor, Michigan	1961—62	2
PURPEL, David BR5-0991	Planning of an instructional media system for the Harvard Graduate School of Education.	Harvard University	1964—65	25
RAMEY, J.W. B-133a	Preparation of a manuscript on the uses of TV in medical education.	Institute for Advancement of Medical Communication Bethesda, Maryland	1963—64	4
RAY, Henry W. BR5-1026	Instructional media and heuristic learning.	Centennial School District Warmister, Pennsylvania	1965—66	59
REID, Chandos (Margaret Gill) B-050	Theoretical framework for the development and utilization of educational media and materials.	Association for Supervision and Curriculum Development Washington, District of Columbia	1959—60	18
REID, Seerley B-077	U.S. Government films for public educational use; 1960.	Library of Congress	1960—61	28
B-077a	Preparation and publication of U.S. Government film for public educational use; 1963.	Library of Congress	1963	6
RICHLAND, Malcolm BR5-0303	Traveling seminar and conference for the implementation of educational innovation.	System Development Corporation, California	1965	153
ROBINSON, Thomas P. BR5-1343	Learning resources center for the U.S. Virgin Islands, a feasibility study.	Laboratory for Educational Materials	1963—64	10
RUARK, Henry C. B-106b	State department of Education responsibilities for the use of new educational media in public elementary and secondary schools.	State Department of Education Salem, Oregon	1962	1
RUGG, K. C. B-002	Improving instruction — budgeting your audiovisual program.	Indiana University	1959—60	11

NAME	PROJECT	LOCATION	DATE	AMOUNT (in thousands)
RYANS, David G. B-216	Review and assessment of Title VII, NDEA programs.	System Development Corporation, California	1961	6
SCHENKKAN, R. F. B-058, B-058a	Field study in the wider use of faculty resources among a number of institutions of higher education by means of closed-circuit microwave TV.	University of Texas	1959—62	12
B-058b	Temp, Texas educational microwave.	University of Texas	1963	370
SCHEIN, Jerome B-200	Survey of visual aids in schools and classes for the deaf in the U.S.	Gallaudet College	1961—62	8
SCHULLER, Charles F. B-085	Conference to explore the desirability and feasibility of establishing a council of media organizations.	Michigan State University	1960	3
B-085a	Second conference to discuss the desirability and feasibility of establishing a council of media organizations.	Michigan State University	1960	3
B-085b	A conference of the educational media council.	Michigan State University	1960—61	4
B-118	A survey of the audiovisual instructional programs, resources, and services of educational institutions in the State of Hawaii.	Michigan State University	1960	4
SCHRAMM, Wilbur BR7-1123	Summary of the research on Instructional TV, and other media research relevant to it.	Stanford University	1967	24
BR7-0873	ERIC Clearinghouse for educational media and technology.	Stanford University	1967—70	286
B-322	Research on programmed instruction, an annotated bibliography.	Stanford University	1962—64	27
B-017	Education and the new media (an exploration of needed research in educational use of the new media).	Stanford University	1959—60	15
B-017a	Educational TV: the next ten years.	Stanford University	1960—61	53
B-158	People look at educational TV, report on and from the audiences of eight representative ETV Stations.	Stanford University	1961—62	60
SCHUELER, Herbert BR5-1348	Teacher education and the new media.	City College of New York	1962—64	18
SCOTT, Donald B-118b	A survey of the audiovisual instructional programs, resources, and services of educational institutions in the State of Hawaii.	Neenah, Wisconsin	1960	2
SECREST, James D. B-143	Technical guide for the purchase and use of language laboratory facilities and equipment.	Electronic Industry Association Washington, District of Columbia	1961	11
SEIBERT, Warren F. B-087	International seminar on instructional TV.	Purdue University	1961—62	33
SHERMAN, Mendel BR5-0265	Study to formulate quantitative guidelines for the audiovisual communications field.	Indiana University	1964—67	44
SIDNELL, Robert BR5-1083	Development of self-instructional drill materials to facilitate the growth of score reading skills of student conductors.	Michigan State University	1966—67	10
SKELLY, Harry J. B-118a	A survey of the audiovisual instructional programs, resources and services of educational institutions in the State of Hawaii.	Sacramento, California	1960	2
SKORNIA, Harry J. B-008	Feasibility and role of state and regional networks in educational broadcasting.	National Association of Educational Broadcasters	1959	10
SMITH, Dorothy B-220	Study of the problems of copyrights, royalties, compensation, and rights of teachers in the production, performance and distribution of educational TV and radio programs, educational films, and Programs for teaching machines.	American Council on Education Washington, District of Columbia	1961—62	68

NAME	PROJECT	LOCATION	DATE	AMOUNT (in thousands)
STANLEY, Julian C. B-236	Curriculum guide for a course in educational media research.	University of Wisconsin	1962	6
STEPP, Robert E. BR5-1356	Feasibility study to investigate the instrumentation, establishment, and operation of a learning laboratory for hard-of-hearing children.	University of Nebraska	1963—64	39
STONE, W. George B-020	Materials list for teacher of modern foreign languages.	Modern Language Association of America	1959	12
SUPPES, Patrick BR6-1493	Stanford program in computer-assisted instruction.	Stanford University	1966—67	1,018
TANZMAN, Jack B-353	Study to explore the role and feasibility of a regional educational communications center.	Plainview Public School, New York	1963—64	61
TAUBER, Maurice F. 8-00A	Feasibility study regarding the establishment of an educational media research information service.	Teachers College Columbia University	1959—60	21
8R5-0231	Conference on the use of printed and audiovisual materials for instructional purposes.	Teachers College Columbia University	1966	13
TAYLOR, Calvin BR5-1018	Instructional media and creativity on the Torrey Pines Conference	University of Utah	1965	13
TETTEMER, Clair B-096	Study of the feasibility of developing demonstration materials of classroom utilization of educational broadcasts.	National Association of Educational Broadcasters	1960—61	6
BR5-1012	Pilot series of six kits of filmed and published materials illustrating proper teacher utilization of broadcast materials.	National Association of Educational Broadcasters	1963—64	155
THORNBLAD, Carl E. BR7-0715	Great cities research council educational communications project.	Chicago, Illinois	1967—68	129
TICKTON, Sidney BR8-0571	Operation of the commission on instructional technology and preparation of a report on a study of new instructional technology.	Academy for Educational Development	1968—69	500
USLAN, David T. BR7-1143	Feasibility of using an experimental laboratory for identifying classroom multimedia problems and requirements.	System Development Corporation Falls Church, Virginia	1967—68	50
VANDERMEER, A. W. B-083d	Regional research conference on new educational media.	Pennsylvania State University	1960—61	15
VENTO, Charles BR6-8910	Systems approach for automating the cataloging and distribution of educational motion pictures.	University of Southern California	1967—68	8
VINSONHALER, John BR5-1144	Improving accessibility of educational materials. Retrieval of educational and psychological tests.	Michigan State University	1966—67	16
WAGNER, Robert W. B-131	Series of motion picture documents on communications theory and the new educational media.	Ohio State University	1961—62	6
BR5-0294	Series of motion picture documents on communication theory and the new educational media.	Ohio State University	1963—65	160
BR6-2775	Completion of a series of motion picture documents on communication theory and the new educational media.	Ohio State University	1966	40
WHALEY, Randall M. B-022	Evaluation of new curricula developments and new techniques of instruction.	National Academy of Sciences	1959—60	20
B-267	Feasibility study for establishing a pilot center for analysis and demonstration of educational resources at Wayne State University.	Wayne State University	1963—64	17
WHITE, Harvey BR5-0432	Planning, construction, and evaluation of media for teaching high school and junior college science via TV and for use in self-instruction.	University of California	1963—65	274

NAME	PROJECT	LOCATION	DATE	AMOUNT (in thousands)
WHITE, Harvoy BRG-0435	Planning, construction, and ovaluation of media for teaching high school and junior college science via TV for use in self-instruction.	University of California	1966—67	93
WILDS, Preston BR5-1145	Demonstration of clinical programming methods and dissemination of rosults of self-instruction clinical problem-solving project.	Modical Collogo of Georgia	1966—68	135
WILLIAMS, Catharine B-354	Dovelopment of packagod programs designed to enable groups of teachers to carry on their own inservice audiovisual instructional programs.	Ohio State University	1963—65	74
WILLIAMS, Don G. B-066	Motion picutre production facilities of selected colleges and universities.	University Film Foundation	1960—62	26
WILSON, Roy K. B-161	Conference on dissemination of information on newer educational media, report of national school public relations association.	National Education Association	1960—61	3
WITHERSPOON, John P. BR7-1021	Planning instructional TV facilities.	Brooks Foundation	1967—68	40
BR5-0995	Educational communications system.	National Association of Educational Broadcasters.	1966	145
WITTICH, Walter A. B-117	Demonstration of inservice teacher training in audiovisual education via TV and related news media.	University of Wisconsin	1960—61	52
WOOLSEY, Frank M. BR5-1358	Conference on the uses of two-way networks in medical education.	Albany Medical College of Union University.	1964	17
WYMAN, Raymond BR5-1344	Study of the availability of locally produced overhead transparencies and recommendations for national distribution.	University of Massachusetts	1964—65	19
BR5-1014	Study of the availability of locally produced overhead transparencies and recommendations for national distribution.	University of Massachusetts	1965—66	29
ZANT, James H. BR5-0708	Project for the improved use of newer educational media in elementary school mathematics.	Oklahoma State University	1965	55

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NUMERICAL INDEX TO VARIABLES EXAMINED IN TITLE VII A PROJECTS

1.0 **TV, Open Broadcast**
1.1 Audience Characteristics
1.2 Program preferences, educational level
1.3 Post high school guidance, health, social skills, self-concern, social relations
1.4 Post high school guidance, College preparation
1.5 In-service teacher, individualize reading instruction
1.6 Alternatives for program diversity

2.0 **Educational Television**
2.1 Requirements for directors
2.2 Adult illiteracy
2.3 Junior College classes
2.4 Telecast course determenants for credit enrollers
2.5 Pre-school experiences, orient, motivate
2.6 Pre-school, propensities, preferences, reactions.
2.7 Pre-school, intellectual and cultural growth
2.8 Elementary school use, structural aspects, social, economic demographic
2.9 To eliminate resistance to...
2.10 Attitude change, teachers, pupils, from neutral to positive
2.11 Audience and non-viewer characteristics

3.0 **TV, Closed Circuit**
3.1 Complilation of directory, facilities, courses presented, sources of, number of teachers, students, pattern of utilization
3.2 Instruction, abilities grouping, location of receiving school (urban/ rural),segregation of classes (White/Negro)
3.3 Student participation, educational environment of residence halls
3.4 Role of visuals in learning
3.5 Short term effect on ability to perform mental work
3.6 Teacher/learner process
3.7 Presentation techniques, pupil stimulation
3.8 Visual techniques
3.9 Perception, eye movement related to subject and stimulus
3.10 Eye movement, grade level, intelligence, types of stimulus material
3.11 Visual continuity, visual reinforcement manipulation of visual material
3.12 Response profiles interest in TV, galvanic skin,/retention of information, attitude change
3.13 Presentation conditions for acquisition of meaningful concept
3.14 Retention, elementary students, interest attitudes
3.15 Instructional improvement, retention, transfer
3.16 Electrical signal feedback, microphone feedback, vicarious feedback
3.17 Visual content, impart facility in manual manipulations
3.18 Visual presentation, realism, non-realism literal, nonliteral
3.19 Attitudes, professor resistance to TV instruction
3.20 Biology, High School, team teaching

3.21 College algebra, teaching machine, P.I. text, film strips
3.22 Science, 5th grade, achievement gains, attitude, interest
3.23 Dental health education, college
3.24 Russian, 4-5th grade, interest, motivation
3.25 French, elementary school, teacher training
3.26 Spanish, elementary school
3.27 Foreign language, elementary school, audio tapes
3.28 Foreign language, 4th grade
3.29 Remedial speech, 3rd grade
3.30 Adult, intellectual manipulation of life experience through TV
3.31 Supplementary visual aid
3.32 Supplementary, white/Negro students, qualified, unqualified teachers, good/poor laboratories
3.33 Enrichment
3.34 Supplementition of, correspondence study, visitations by Education major students
3.35 Augment, replace conventional lab,"Strength of Materials" course
3.36 Large groups, demonstrations, college human physiology
3.37 Large screen, theater, college
3.38 Large screen, distance, angles
3.39 Video tape, use of, counseling interviews
3.40 Mass instruction
3.41 Video tape, counselor-client interaction
3.42 Study skills, college

4.0   Programmed Instruction
4.1   TV Learner participation techniques
4.2   TV Individualization of pace, external pace, self-pace
4.3   TV Economics, college
4.4   TV Speech, statistics, college
4.5   TV Learner participation teaching
4.6   TV Mechanical skills, size of demonstration unit, mode of practice
4.7   Intermediate French, combinations of auto-devices
4.8   Latin
4.9   Manual alphabet, stimulus presentation, learner response
4.10   Modern math, superior students
4.11   Automated math, summary of math, PI research
4.12   Math-5th grade, highly directed, non-directed
4.13   Gynecologic-oncology, linearly (content), branching (application)
4.14   Thinking and problem solving, Skinner's views.
4.15   Remedial English, College freshman
4.16   Relevant/irrelevant pictorial color cues in discrimination learning
4.17   PI Pictorial stimuli/transfer tasks
4.18   Russian
4.19   College math, Russian, music, chemistry, biology, religion, geology, Spanish, physics
4.20   International Phonics Transcription
4.21   Music education/adjunct taped musical selections.

4.22   Written language, for deaf children
4.23   For the deaf, correction of written language
4.24   Mentally retarded
4.25   Mentally retarded, (arithmetic), answer-construct,
       multiple choice
4.26   Personal counseling
4.27   Abstract thinking, optimum properties, accelerate abilities,
       different age levels, patterns of development.
4.28   Language learning, transfer of sense modality, relation of
       vision audition
4.29   Problem solving ability, behavioral development
4.30   Museum Exhibits, order of displays, active involvement,
       individual pacing, R. E. of successful visitor performance,
       effectiveness of Ed. objectives
4.31   Group learning
4.32   Grouped-paced, slow learners, feedback conditions
4.33   Group-paced, homogeneous, heterogeneous groups
4.34   Group instruction, teacher training
4.35   Group teaching device, incidental learning, intentional
       learning, word stimuli, cue color, cue magnitude, sex,
       method of focal material
4.36   Students, 2-3 at one time, by passing, review questions,
       pictorial reinforcement, format of frames (picture or
       print)
4.37   Frequency of Testing, achievement, retention
4.38   Learning processes, anxiety, creativity, intelligence
4.39   Teacher-Program relationship
4.40   Creative behavior, originality, sensitivity, flexibility,
       fluency of ideas
4.41   Manipulative skills, "metal Spinning"
4.42   Feedback, test anxiety level
4.43   Stimuli, words, non-wordal
4.44   Stimulus-Response associations
4.45   Methods (suitable for) ability, achievement, knowledge,
       conceptual attainment, effectiveness as remedial branches
4.46   Response modes, associative creativity
4.47   Revision procedures, analyze "a priori", analyze-examine
       student responses
4.48   Correlational analysis (of) learner/linear program, variable
       stimuli, ability-personality profiles
4.49   Repetition of material
4.50   Supplementary, relevant content, irrelevant content
4.51   Transfer of learning
4.52   Transfer effects, cue repetition, learning to learn,
       warm-up effect.
4.53   Symbolic, non-verbal responses
4.54   Branching, rules, generalizations
4.55   Administrative adjustments, instruction adjustments
4.56   Self-direction, self-evaluation
4.57   Overt responses, covert responses
4.58   Measurement procedures
4.59   Pictorial materials, non pictorial
4.60   Novelty effect
4.61   Role and conceptual materials, underachievers, normal,
       overachievers

4.62 Frequency of posed question, directness of cueing, directions of application required, varieties of illustration, length of time before recall/review, nature of review material
4.63 Item analysis and development
4.64 Behavioral processes
4.65 Visual presentations, achievement, transfer of learning, retention
4.66 Rote material, specialized principles
4.67 Expository presentation introduced by problem-setting questions, expository presentation only
4.68 Relationships between reinforcement and physical components of complex pictorial stimuli in discrimination learning, variables related to prior experience with pictorial stimuli used in discrimination learning
4.69 Reinforced schedules in pacing reading rate and adjusting reading behavior
4.70 Aural, visual presentations, voice, written responses
4.71 Reading only, reading and aural, almost completely aural
4.72 non-program variables
4.73 Learner control, program control
4.74 Pacing modes
4.75 Sequencing techniques
4.76 Multi-media, small steps, active response
4.77 Step size, cueing
4.78 "Prompt" definition of
4.79 Mnemonic strategies vs. P.I. without
4.80 Individualized instruction, self goals, self paced
4.81 Learning Theory, classification of prompts
4.82 Learning effect, linear programs
4.83 Application of structure of intellect
4.84 Four variations, junior high science
4.85 Mode of presentation, audio or print, combined
4.86 Techniques of review
4.87 For the blind
4.88 Negative practice, spelling
4.89 Science lab exercises
4.90 Curcuit theory to fortran college level
4.91 Relating frame difficulty to the ability of the learner
4.92 Induce production thinking using auto-instructional sequences
4.93 Effects of emotional content

5.0 Teaching Machines
5.1 Operation of audiovisual equipment
5.2 Library science, college freshman
5.3 Mental retardation
5.4 Discover, evaluate, programing principles
5.5 Mathematical model, presentation mode, rate and sequence of presentation, type of information, device complexity, programing effort, level of learning.
5.6 Logic of program sequencing, mode of student response
5.7 Social science, 11 & 12th grades
5.8 Cueing
5.9 Error rates, achievement, motivation

5.10 Science film, feedback to programmer, participation by
     learner, feedback to learner
5.11 Transfer factors
5.12 Personal relationship factor

6.0 Motion Films
6.1 Animated, descriptive geometry
6.2 Animation, oral histology, embryology
6.3 Sound techniques
6.4 Ethnic characterizations
6.5 Motion variables
6.6 Response, feedback, repetitive review
6.7 Volume of sound
6.8 Images, do they add to sound, controlled associations
6.9 Non-linearity
6.10 Physiological response to
6.11 Compared in effectiveness to print
6.12 Subject matter retention
6.13 Motor skills performance, change in expressed self-concepts
6.14 Inserted questions
6.15 Visualization & manipulation of 3-D mental concepts
6.16 Characteristics of film learning
6.17 Mediate, factual conceptual learning
6.18 Cine-Psychometry, A.V. memory
6.19 Contribution to factor analysis of visual cognition and
     memory
6.20 For testing factorial content
6.21 As test stimuli, applied to prediction of complex behavior
6.22 Predictive measurement in teacher evaluation
6.23 Change attitudes toward science and scientist
6.24 Aspirational levels, ethnocentric shifts, racial self-
     concepts, attitude changes
6.25 Attitude change toward college attendance
6.26 Effect on M-R's and related psychology of learning
6.27 Program analyzer, to improve television, teacher training
6.28 Enhancement for comprehension, enjoyment, identification
     with characters, word knowledge
6.29 Use of sponsored films
6.30 Simulation and demonstrations in dentistry
6.31 Simulation, image size, feedback mode, response made
6.32 Driver ed simulator, complex mental motor skill, immediate
     reinforcement
6.33 College physics, filmed demonstration
6.34 High school chemistry, physics, film, vs non-film
6.35 Algebra, high school teacher education, film of techniques
6.36 Motivation research. Films prepared with knowledge of
     learner's motives
6.37 Inquiry training, 5th & 6th grade, filmed
     physics plus tapes
6.38 Factor-analytic, study of learning
6.39 Movement and emotional involvement response
6.40 Engineering education

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7.1   Student personnel administrators, case materials
7.2   T.V., film, for counselors
7.3   Tape, audio, counselor training
7.4   Motion film, attitude change (of) Ed majors re Ed Psych topics
7.5   Change attitudes toward professional course objectives, Ed majors
7.6   Tape, filmstrips, observations, educational psychology
7.7   Student readiness for environmental learning units
7.8   Computer (to teach) engineering students
7.9   Management games

8.0   Overhead Transparencies
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8.2   Deaf education

9.0   Radio
9.1   Two way radio, graduate medical education
9.2   Two way radio, graduate education participation conferences
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9.3   Structural drills in Spanish

10.0   Tapes, Audio
10.1   Auditory perceptual skills, retarded readers
10.2   T.V. increase student-staff contact
10.3   Creative thinking, 4th grade
10.4   Instruction, directed-detailed, directed-discovery
10.5   Audiolingual lab., improving rural speech patterns
10.6   Graduate study, Dept. of Ed
10.7   Speech improvement, primary grades
10.8   Kinds of stimuli, knowledge of results
10.9   Conventional lectures, recorded lectures
10.10 And slides, development techniques
10.11 Recording ability

11.0   Foreign Language
11.1   Laboratory, high school french
11.2   Laboratory, audio-passive, audio-active, audio-active-record
11.3   French, college, slides, tapes
11.4   French, college, film, tapes, filmstrip as enrichment
11.5   Ratio of relevant/irrelevant cues, photos, photo outline,
       charicature
11.6   "Sensory image types"
11.7   Visual stimuli, aural stimuli

12.0   Speech, Listening
12.1   Listening, related to learning
12.2   Speech skills, kindergarten, auditory discrimination
12.3   Instructional media, university speech course
12.4   Compressed speech, spacing, of practice session, type of
       material, compressed, retention
12.5   Compressed speech, speed
12.6   Compressed speech, comprehension, grade level, intelligence,
       amount of practice
12.7   Compressed speech, intelligibility of

13.0 Filmstrips, Slides, Graphics
13.1 Filmic media, comparison
13.2 Sound filmstrips, teacher-classroom behavior
13.3 Filmstrips, systematic improvement and effectiveness
13.4 Filmstrips, general curricular validity, existing commercial vs. active response required
13.5 Filmstrip, degrees of immediacy of knowledge of results, methods of presentation
13.6 Slides, cognitive learning, forced attention
13.7 Visuals, still, perception - reaction time
13.8 Graphic aids, spatial distribution of labels
13.9 Graphics, classified matrix of stimulus-response categories, optical, mechanical requirements
13.10 Photographs of class, positive self concepts, positive behavior, anti-social behavior
13.11 Still photographs, previous ETC material, amount of learning
13.12 Print, survey of types
13.13 Relevant/irrelevant information
13.14 Choice of elements/combinations of elements

14.0 Attitudes
14.1 Attitudes, longitudinal changes, associated with learning
14.2 Attitude change, sound-slide, films
14.3 Attitudes, A-V instruction, A-V programs, films, information dissemination
14.4 College teaching, resistence to A-V
14.5 Attitudes toward uses of newer media
14.6 Attitudes, intellectual & personality development
14.7 Learning activities, learning achieve-ent
14.8 Learning theory, student attitude, different media

15.0 Teacher Education
15.1 College teachers, T.V. effectiveness, kinds of objectives, attributes of teachers, student attitudes, achievement
15.2 How to identify effective T-V teacher
15.3 T.V. evaluation
15.4 Teacher Education, use of video tapes in
15.5 Inservice, videotape of educational psychology
15.6 Videotape observation skills
15.7 T.V. observations
15.8 Video-tape "immediate knowledge of results by analysis & discussion
15.9 Use of supervisors with video-tape, film, tapes
15.10 Observations by supervisors, audio tapes, kinescopes
15.11 T.V. teacher improvement in general science
15.12 T.V. teacher training in foreign languages
15.13 T.V. elementary teachers speech improvement, 3rd grades
15.14 T.V., elementary math
15.15 T.V. to promote favorable attitudes, improve use of A.V.s
15.16 T.V., kinescope recordings for teacher evaluation
15.17 T.V. observations for teacher effectiveness
15.18 Video recording, self-evaluations, goal setting
15.19 Kinescope recordings, student teaching, tape recordings teacher evaluation.
15.20 In service teacher education, mobile lab, T.V., film, kinescope in science & math

15.21 Assessment - co-operative use of video, state college, 16 private schools, function and value of video observation, mobile units
15.22 In-service, methods, workshops, supervisory visits, printed material, film, tapes in use of media
15.23 Use of A-V materials
15.24 Micro-teaching vs regular student teaching
15.25 Films in Ed Psych to replace direct classroom visitations
15.26 Film, slides in place of direct classroom observation
15.27 Documentary sound films
15.28 Sound film, techniques of teaching
15.29 Film simulation and printed materials
15.30 Simulation, classroom environment
15.31 Simulation, classroom problems, transfer-value, self-confidence
15.32 Modes for training, interaction analysis, classroom simulation
15.33 Classroom observation procedures, P.I., sound film, filmstrips, slides, tapes
15.34 Sound film for improvement of nonverbal communications.

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16.1 CAI math, curriculum, reading, 1st grade, culturally deprived
16.2 CAI Boolean algebra, logic
16.3 CAI college physics
16.4 CAI, student individual differences, self selection of program, role of computer
16.5 CAI random vs. ordered sequencing
16.6 Computers, problem solving, grades 4-8
16.7 Computer management of educational process, systems design
16.8 Media, implementation, systems analysis, computer simulation of school organization
16.9 Systems analysis, instructional media systems
16.10 Auto-information. Retrieval, library facilities
16.11 Information retrieval, index research projects
16.12 Math instruction, stimulus sampling IBM, TV
16.13 An information system for Vocational Decisions
16.14 Educational information network

17.0 Audio-Visual, Multi-Media
17.1 A V instruction, case study
17.2 A V methods
17.3 A V instruction, film strips, motion pictures, audio-modes
17.4 A V instruction, dental school, modes of presentation
17.5 A V programs, deaf children and parent education
17.6 A V instruction, "structure of intellect", cognitive information
17.7 A V instruction, visual presentation modes, verbal presentation modes
17.8 Teaching endoscopic, modes of visualizing
17.9 Message structure, temporal dimension
17.10 Interpersonal recall techniques as a research tool
17.11 Innovation, diffusion, sociopsychological background
17.12 Mediated, science & math, T V programed instruction

17.13 IMPACT of media on school institutions
17.14 Media, comparative analysis, comparative education,
       cross cultural
17.15 Multi-media, syllabus for training in media perception
       & judgment
17.16 Student councils, A V to enrich experience of good student
       government
17.17 Tests as visuals & audiovisuals
17.18 Complementary, A V resource center for high school physics
17.19 Self teaching effectiveness, school, home, reading skills --
       first grade
17.20 Feasibility of telelecture/electrowriter, engineering
       education
17.21 Telephone communications, enrichment for American govern-
       ment
 7.22 Operational plans for regular educational media research
       centers
17.23 Need for & feasibility of regional ed. media research
       organization
17.24 Assimilation of new automated teaching methods into school
       instructional repertoire
17.25 Language acts for bilingual Spanish-4th grade
17.26 Modification of vocational aspirations
17.27 Literature review of research involving non-intellective
       factors in learning
17.28 Techniques for transmission, review of literature
17.29 Exploration of novel research designs and measurement
       techniques
17.30 Instructional systems development
17.31 Self-directed study groups
17.32 Educational potential of non-verbal communications
17.33 Physics for the U. S. Naval Academy
17.34 Economics for the U. S. Naval Academy
17.35 Leadership for the U. S. Naval Academy
17.36 The use of new instructional media
17.37 Criteria for evaluating media training
17.38 International uses and cross-cultural comparisons

CATEGORIZATION OF VARIABLES

The following index was generated by reading available abstracts
of over 317 Part A projects.

Each project was abstracted in (a) Research in Education, report
resumes, or project resumes, or (b) special editions of Title VII
New Educational Media, News and Reports, an Office of Educational
publication. In some cases, projects appeared in two of the three
sources, very seldom in all three.

An abstract was read to identify the title of the project and to
locate important descriptors. Research variables of significance
to project purpose as stated in the abstract were identified and
placed in the index using media type as the first general descriptor.

PROJECT DIRECTORS QUESTIONNAIRE RESPONSES

·IMPACT OF NDEA TITLE VII: PROJECT DIRECTOR'S QUESTIONNAIRE

NOTE TO RESPONDENT:

° *The information being requested is strictly confidential*

° *Legal liability in this regard is fully accepted by the Institute for Educational Development*

° *Personal information will not be used on an individual basis in the impact data report.*

SECTION A

		Number	*Percentage*	N=
1.	Name			
2.	Present Title			
3.	Professional address			

4..	Bachelors Degree (Major)	5	*2.3%*	221
	Masters Degree (Major)	33	*14.9%*	
	Ph.D. ___ Ed.D. ___ Institution	183	*82.8%* Date	

Name of your Advisor ___ (no persons mentioned consistently)

Person who had the greatest influence on your entering the

media field ___ (no persons mentioned consistently)

5. What do you consider your field to be today? ___
                          (see Addendum)

6. How long have you been (were you) active in media-
   related endeavors?   219
         less than 3 years 28 *12.8%*   8 - 15 years   . 47 *21.5%*
         3 - 8 years   65 *29.7%*   More than 15 years 79 *36.0%*

7. What do you identify as your current <u>research</u> field?
                          (see Addendum)

SECTION B

8. In how many Title VII, Part A (Research) projects were you
   involved? <u>(1)-115 *68.2%*/ (2)-25 *14.8%*/ (3)-15 *8.9%*/ (4) or more-14 *8.1%*</u>

9. In how many Title VII, Part B (Dissemination) prcjects were
   you involved? <u>(1)-57 *64.3%*/ (2)-16 *18.6%*/ (3)-7 *8.1%*/ (4) or more-6 *9.0%*</u>

10. Prior to your involvement with Title VII, your work in media activities was:　　　　　　　　　　N=222

none -0	59	26.6%
only light -25-35%	59	26.6%
a fair amount -50%	28	12.6%
heavy -75%	28	12.6%
all -100%	48	21.6%

11. What was your specialty prior to involvement with Title VII?　　　　　　　　　　N=220

media research	24	10.9%
administration	45	20.5%
media development	28	12.7%
psychology	59	26.8%
curriculum	2	0.9%
admin-media	1	0.5%
communications	19	8.6%
teaching	42	19.1%

12. Since your involvement with Title VII your work in media activities has been:　　　　　　　　N=222

none -0	30	13.5%
only light -25-35%	73	32.8%
a fair amount -50%	43	19.4%
heavy -75%	19	8.6%
all -100%	57	25.7%

13. If there were changes in questions 10 and 12, was Title VII the principal reason for these changes?　　　　　　　　　　　N=74

Yes　28　37.8%　No　47　62.2%

14. If Title VII activities were not responsible for the shift in 10 and 12, can you identify what was responsible?　　　　　　(see Addendum)

SECTION C : Please respond to the following series of
15.　　　　　questions in relation to the Title VII
　　　　　　 project named below:

(Specific A or B project listed)

16. What percentage of your time did you devote to the project?　　　　　　　　　　N=219

10%	13	5.9%	40%	19	8.7%	70%	8	3.7%	100%	28	12.8%
20%	34	15.5%	50%	53	24.2%	80%	15	6.8%			
30%	29	13.2%	60%	8	3.7%	90%	12	5.5%			

17. In general, the objectives of your Title VII
    project were accomplished:

$N= 222$

fully	112	50.4%
fairly well	70	36.1%
only partially	30	13.5%

18. What objectives did you have that were not
    accomplished?

            (see Addendum)

_____

_____

_____

_____

19. Why weren't these objectives accomplished?

            (see Addendum)

_____

_____

20. Did your project attempt to determine effectiveness
    on, or change any of these?

	YES		NO		YES	NO
student behavior	97	49.7%	98	50.3%		
student attitudes	73	37.4%	122	62.6%	administration	
teacher behavior	58	29.7%	137	70.3%	attitudes	
teacher attitudes	52	26.7%	143	73.3%	37 | 18.9% 158 | 81.1%	

21. What criteria were used for evaluation of impact?

strong objective measurement	29	19.5%
generally objective	43	28.9%
mostly subjective	51	34.2%
totally subjective	26	17.4%

22. Did you develop any:

	YES		NO			YES		NO	
courses of study	31	15.7%	167	84.3%	textbooks	13	6.6%	185	93.4%
curriculum guides	31	15.7%	167	84.3%	self-inst. materials	72	36.4%	126	63.6%
					film/film strips	20	11.6%	178	88.4%
commercial devices	12	6.1%	186	93.9%	text	9	4.5%	189	95.5%

23. If yes to question 22, where may these be
    obtained for use by others?

I have them for viewing and/or loan	50	32.2%
Commercially produced by _____	26	16.8%
Repository (identify) _____	55	35.5%
Sorry, they "self-destructed" after the project was completed	24	15.5%

SECTION D

24. I learned about the Title VII research and
    dissemination program through:

		YES		NO	
U.S.O.E. guidelines	74	33.5%	147	66.5%
professional publications	56	25.3%	165	74.7%
colleagues	118	53.4%	103	46.6%
professional meetings	51	23.1%	170	76.9%
others (list) _____	43	19.5%	178	80.5%

25. My access to information about Title VII proposal
    opportunities, in comparison to other researchers,
    I would judge, was:

better	73	33.2%
as good as	125	56.8%
poorer	22	10.0%

26. Information and opportunities to discuss possible
    proposals was:

seldom available	48	22.9%
usually available	106	49.0%
always available	59	28.1%

27. Have you had any prior experience with other federal
    agencies in receiving contracts, etc. for proposals?
    If so, please list.

    YES=105 52.8%

    NO = 94 47.2%

28. As far as you can compare your other federal agency
    relationships to Title VII, Title VII was administered:

better	32	19.4%
as well as	117	70.9%
less effectively	16	09.7%

29. What do you remember as the strong points or good
    practices in the administration of Title VII? (Please
    rank 1, 2, 3 etc.)

    guidelines for submitting proposals   (see Addendum)

    proposal review procedures   _____

    communications with the O.E. staff   _____

    site visits   _____

    congeniality of the O.E. staff   _____

    handling of extensions   _____

    others (list) _____   _____

30. Rank order those situations in your relationship
with the U.S.O.E. Media Personnel (Title VII)
which created problems or inhibited your ability
to carry out your project: (1 = most difficult,
2 = second most difficult, etc.)

   delay in appropriating & funding project (see Addendum)

   cuts in budget _____

   inflexibility in modifying objectives
   during project _____

   vague or indecisive policy decisions _____

   modification of objectives, staffing,
   time phase, evaluative procedures _____

   too strict interpretation of contractual
   obligations _____

   cost-sharing _____

   others (identify) _____ _____

31. Please explain the nature of the items ranked
1 and 2 in questions 29 and 30.

   (not coded - few responses)

32. In comparison to other Office of Education research
programs [for instance, Cooperative Research, Title
IV (ESEA), etc.], Title VII was administered: N=153

   less effectively   8   5.2%
   as well as   108 70.6%
   better   37 24.2%

33. What specific suggestions would you make for
strengthening management practices of programs
such as Title VII?

   (see management and administrative recommendations)

SECTION E

34. Were the findings and results of your Title VII project well disseminated?

    Yes   130 *63.1%*   No   76 *36.9%*

35. Did you *publicize* the results of your Title VII project in any of the following ways? Please rank order the following methods: *(1 = most used; 2 = second most used, etc.)*

television	(see Addendum)
films	_____
radio	_____
closed circuit TV	_____
major newspaper	_____
community newspaper	_____
personal talks	_____

36. At which of these professional meetings did you or your staff read papers regarding your Title VII project?

	YES	NO		YES	NO
AERA	50 *25.5%*	145 *74.5%*	NSPI	19 *9.7%*	177 *90.3%*
ASCD	13 *6.6%*	183 *93.4%*	Others	89 *45.4%*	107 *54.6%*
APA	35 *17.9%*	161 *82.1%*			
DAVI	68 *34.7%*	128 *65.3%*			

37. Which of the following disseminated the findings of your project. How?

	YES	NO
county offices	10 *5.7%*	165 *94.3%*
state agencies	33 *18.9%*	142 *81.1%*
national agencies	84 *48.0%*	91 *52.0%*
colleges or universities	82 *46.9%*	93 *53.1%*

38. Which journals or magazines have published the results of your project?

    (see Addendum)

    _____

    _____

39. Where may a complete copy of your final report be obtained?

	YES	NO
ERIC Clearinghouse	82 *41.2%*	117 *58.8%*
Title VII repository	102 *51.3%*	97 *48.7%*
College Library	60 *30.2%*	139 *69.8%*
Project Director	41 *20.7%*	157 *79.3%*

40. How many copies of your report were printed?

      0 - 99   40 *20.8%*   700 - 999   7 *3.6%*

     100 - 399   89 *46.4%*   1000 +   27 *14.1%*

     400 - 699   29 *15.1%*

PLEASE ENCLOSE A LIST OF YOUR PUBLICATIONS THAT "ORIGINATED" FROM YOUR TITLE VII RESEARCH. (see Addendum)

(Checked portions of your total publications list are acceptable)

SECTION F - VII PART A PROJECT RESPONDENTS ONLY

41. So far as you know, the outcomes of your Title VII A research are being translated into classroom practice. N=160

     Yes   64 *40.0%*   No   96 *60.0%*

42. If you don't feel the results of your project are being translated into classroom practice, what are the reasons? *(Check those which apply)* N=109

requires special personnel	14	*12.8%*
requires excessive teacher training or time	13	*11.9%*
effective use requires long periods of time (e.g. a school semester or year)	9	*8.3%*
material difficult to obtain or not available	33	*30.3%*
too expensive or space consuming	17	*15.6%*
equipment or technology lag	23	*21.1%*
equipment usable only with special materials	6	*5.5%*
research purely theoretical in nature	15	*13.8%*
still experimental	29	*26.6%*
results not disseminated properly (why?)	28	*25.7%*
other (specify) _____	33	*30.3%*

VII PART B PROJECT RESPONDENTS ONLY

43. So far as you know, has your Title VII B dissemination project had a significant impact on classroom practice: N=92

     Yes   45 *48.9%*   No   47 *51.1%*

44. If your Part B project (dissemination) has or has not had a significant impact on the classroom, how do you account for this?

(See Administration and Management Chapter)

_____

_____

SECTION G

45. Which statement below describes, most closely, your impression of Title VII activities in general?   N=198

planning and implementation were of a poor quality   2 .1.0%

a small portion of it had merit, but the value of activities in terms of cost is open to question   23 11.7%

equally good and bad points, but in general contributed to improved media use   49 24.7%

positive elements outweigh any negative., and I would gladly become a part again.   124 62.6%

46. What do you feel has been the most meaningful and significant <u>research</u> study in the field of educational media in the past ten years?

Name(s) of researcher(s) ___(no consistent pattern)___

_____

Approximate title of study _____

_____

Why? _____

_____

47. What Title VII (A or B) activity (or activities) has had the greatest impact on the field of educational media?

(no consistent pattern) .

48. The administration and effectiveness of ten years of
    Title VII research and dissemination could have been
    improved most by:

    (see administrative and management section)

49. Please check five professional journals or publica-
    tions that you <u>read</u> on a regular basis:

    N=203

	Rank % of Total		
AERJ	72	8.6	(4)
American Psychologist	76	9.1	(3)
Audiovisual Instruction	76	9.1	
AVCR	68	8.1	(5)
Educational Screen	26	3.1	(9)
Educational Technology	83	9.9	(2)
J. Educ. Psych	55	6.6	(7)
J. Experimental Psych	18	2.2	
NEA Journal	59	7.1	(6)
NSPI Journal	24	2.9	(10)
Phi Delta Kappan	91	10.9	(1)
Science	54	6.5	(8)
SMPTE Journal	14	1.7	
T.C. Record	16	1.9	
Others (list)	94	11.2	
Ed. B'casting Review	10	1.2	

*THANK YOU FOR YOUR COOPERATION IN COMPLETING THIS QUESTIONNAIRE.
Information concerning the survey will be provided to all
respondents.*

Listing of Answers to Specific Open-ended Questions That Elicited Statistically Quantifiable Responses.

Questions:

5. What do you consider your field to be today?

N=221

		#	%
1.	Educational Technology	59	26.6%
2.	Educational Psychology	25	11.3%
3.	Educational Teacher Training	5	2.3%
4.	Educational Research (General)	23	10.4%
5.	Educational -- General (all others)	47	21.3%
6.	Psychology	22	10.0%
7.	Research Administration	5	2.3%
8.	Communications Research	12	5.4%
9.	Other	23	10.4%

7. What do you identify as your current <u>research</u> field?

N=196

Administration and Organization	5	2.6%
Curriculum	5	2.6%
Educational Research as an Activity	10	5.1%
Goals and Functions	1	0.5%
Guidance to Counseling/School Psychology	3	1.5%
Historical Development of Education	0	(0)
Personnel	6	3.1%
Teacher-Learning Process	37	18.9%
Media - I.T.	62	31.4%
Testing & Measurement & Evaluation	6	3.1%
Other Educational Research Areas	15	7.7%
Communications	14	7.1%
Psychology	15	7.7%
Other	17	8.7%

(10. <u>Prior</u> to your involvement with Title VII, your work in media activities was:)

12. <u>Since</u> your involvement with Title VII, your work in media activities has been:

N=222

Much more involved - 2 or more steps increase	23	10.4%
More involved - 1 step increase	46	20.2%
No change from 10 to 12	127	57.2%
Less involved - 1 step decrease	14	6.3%
Much less involved - 2 or more steps decrease	13	5.9%

14. If Title VII activities were not responsible for the shift in 10 and 12, can you identify what was responsible?

N=74

		#	%
1.	Change of employment	22	18.2%
2.	Change of personal interest	17	14.1%
3.	Advances in research theory	2	1.7%
4.	Title VII result/not cause	1	.8%
5.	Title VII fellowship	1	.8%
6.	Other funding	2	1.7%
7.	Other professional commitments	2	1.7%

18. What objectives did you have that were not accomplished?

N=92

	#	%
Research results not clear cut	22	23.9%
Application of project outcomes	22	23.9%
Further development of academic material for other levels	19	20.7%
Improve prototype technique	5	5.4%
Train teachers	1	1.1%
Creation of measurement instruments	2	2.2%
More complete statistical analysis/ data analysis	5	5.4%
Dissemination objectives	12	13.0%
Other	4	4.3%

19. Why weren't these objectives accomplished?

N=91

	#	%
Poor planning/design or time limitations	21	23.1%
Inadequate funds	22	24.2%
Technical personnel inadequate	4	4.4%
Research	3	3.3%
Unanticipated research results	4	4.4%
Facilities inadequate	4	4.4%
Strong habits not easily changed/lack of implementation by participants	8	8.8%
Lack local support	2	2.2%
Other	23	25.3%

30. Rank order those situations in your relationship with
    the U.S.O.E. Media Personnel (Title VII) which created
    problems or inhibited your ability to carry out your
    project: (1=most difficult, 2=second most difficult, etc.)

RANK	1	2	3	4	5	6	7	8

Delay in appropriating & funding project   N=74

	47	13	6	3	5	0	0	
	63.5%	17.6%	8.1%	4.1%	6.7%	(0)	(0)	

Cuts in budget   N=29

	7	6	3	2	1	5	5	
	24.1%	19.7%	10.3%	6.1%	5.4%	17.2%	17.2%	

Inflexibility in modifying objectives during project N=25

	8	1	4	6	3	3	0	
	32.0%	4.0%	16.0%	24.0%	12.0%	12.0%	(0)	

Vague or indecisive policy decisions   N=52

	18	14	9	6	1	3	1	
	34.7%	26.9%	17.3%	11.5%	1.9%	5.8%	1.9%	

Modification of objectives, staffing, time phase, etc. N=37

	12	7	7	8	1	1	1	
	32.4%	18.9%	18.9%	21.7%	2.7%	2.7%	2.7%	

Too strict interpretation of contractual obligations   N=29

	5	7	4	7	6	0	0	
	17.2%	24.1%	13.9%	24.1%	20.7%	(0)	(0)	

Cost-Sharing   N=29

	5	7	3	2	1	4	6	1
	17.2%	24.1%	10.5%	6.9%	3.4%	13.8%	20.7%	3.4%

Others   N=41

	31	6	2	1	1			
	75.6%	14.7%	4.9%	2.4%	2.4%			

29. What do you remember as the strong points or good
    practices in the administration of Title VII? *(Please
    rank 1, 2, 3, etc.)*

RANK	1	2	3	4	5	6	7

Guidelines for submitting proposals N=132

	1	2	3	4	5	6	7
	77	19	17	13	5	1	0
	58.3%	14.3%	12.9%	9.9%	3.8%	0.8%	(0)

Review Procedures N=97

	1	2	3	4	5	6	7
	36	17	13	16	12	3	0
	37.1%	17.5%	13.5%	16.3%	12.5%	3.1%	(0)

Communication with O.E. N=149

	1	2	3	4	5	6	7
	88	24	22	8	6	1	0
	59.1%	16.1%	14.7%	5.4%	4.0%	0.7%	(0)

Visits N=59

	1	2	3	4	5	6	7
	10	7	8	3	8	21	2
	16.9%	11.9%	13.6%	5.1%	13.6%	35.5%	3.4%

Congeniality N=137

	1	2	3	4	5	6	7
	73	28	15	14	6	1	0
	53.3%	20.4%	10.6%	10.2%	4.3%	1.2%	(0)

Extensions N=110

	1	2	3	4	5	6	7
	53	12	17	6	13	8	1
	48.2%	10.9%	15.5%	5.5%	11.8%	7.3%	.9%

Other N=24

	1	2	3	4	5	6	7
	18	3	1	1	1		
	75.0%	12.5%	4.2%	4.2%	4.2%		

35. Did you *publicize* the results of your Title VII project in any of the following ways? Please rank order the following methods: *(1=most used; 2=second most used, etc.)*

Each respondent was rated according to how many of media listed he checked (few respondents ranked the question as directed)

N=169

1.	television	83	46.6%
2.	films	43	24.2%
3.	radio	20	11.2%
4.	closed circuit TV	20	11.2%
5,+6.	major and community newspapers	5	2.8%
7.	personal talks	7	3.9%

38. Which journals or magazines have published the results of your project?

N=218

AERJ	2	.9%
American Psychologist	0	(0)
Audiovisual Instruction	10	4.6%
AVCR	23	10.6%
Educational Screen	0	(0)
Educational Technology	1	.4%
J. Educ. Psych.	7	3.2%
J. Experimental Psych.	0	(0)
NEA Journal	0	(0)
NSPI Journal	0	(0)
Phi Delta Kappan	1	.4%
Science	0	(0)
SMPTE Journal	0	(0)
T. C. Record	0	(0)
Others	33	15.1%
OO=None	103	47.2%
*Multiple Sources	38	17.4%

*Directors who reported publication activity tended to list 3-4 publications where their material had been published.

List of Publications

Books

    6 people listed one book
    4 people listed 2 books
    1 person listed 3 books

Articles

    15 people listed 1 article
    10 people listed 2 articles
     7 people listed 3 articles
     1 person listed   4 articles
     4 people listed 5 articles
     3 people listed 6 articles
     2 people listed 7 articles

Monographs

No. of people	13	5	6	4	2	1	1	2
No. of Monographs	1	2	3	4	5	6	7	8

Adkins, Gale R.
Andereck, Paul A.
Anderson, James A.
Archer, Sidney N.
Asher, James J.
Baker, Robert L.
Barlow, John A.
Barson, John
Beach, Leslie R.
Beaird, James H.
Becker, Samuel L.
Belforte, John
Berger, Emanuel
Bern, Henry A.
Biggy, Virginia M.
Birch, Jack W.
Bixby, Paul W.
Blackman, Leonard S.
Bloodworth, Mickey
Boecklen, Warren
Boguslavsky, George W.
Bond, Jack
Bornstein, Harry
Bowen, William, M. Jr.
Brown, James W.
Brugger, John R.
Bryan, Edward F.
Bryant, Harry
Buch, John N.
Buchheimer, Arnold
Burkhart, James A.
Burriss-Meyer, Harold
Campbell, Donald T.
Campbell, Vincent N.
Campeau, Peggie L.
Carroll, John B.
Carter, Lamore, Joseph
Carter, Roy E. Jr.
Chance, Clayton
Church, John G.
Cochran, Lee W.
Cohen, David B.
Cohen, Edwin. G.
Cooney, Joan, Ganz
Curtis, H. A.
Cypher, Irene F.
Davis, O. L. Jr.
Davis, Robert H.
Dawson, Marvin
Day, James
Day, Willard F.
De Bernardis, Amo

Decker, Martin G.
DeHaan, Robert F.
DeMarco, Norman
De Sola Pool, Ithiel
Devault, Vere M.
Devitt, Joseph J.
Dimling, John A. Jr.
Doetkott, Richard Paul
Duke, Benjamin C.
Durost, Walter N.
Eboch, Sidney C.
Edling, Jack V.
Engar, Keith M.
Ewing, Thomas N.
Faris, Gene
Feldmann, Shirley C.
Fellows, James A.
Flanders, Ned A.
Fleming, Malcolm L.
Foster, J. Edwin
Fritz, John D.
Frye, Charles H.
Frymire, L. T.
Gerlach, Vernon
Gilbert, James E.
Goldstein, Harold
Gordon, Oakley J.
Gottlieb, David
Green, Alan C.
Green, Leroy A.
Cuba, Egon G.
Gupta, Ram K.
Hamill, Patricia Beall
Hanson, Lincoln F.
Hanzeli, Victor E.
Harcleroad, Fred F.
Harley, William G.
Harris, Charles O.
Harrison, J. A.
Hayden, Jess Jr.
Hayes, Robert B.
Hayman, John L. Jr.
Hazard, Patrick D.
Head, Sydney W.
Herrick, Merlyn C.
Hickey, Albert E.
Hill, Harold E.
Hitchcock, Arthur A.
Hoban, Charles F.
Hodgkinson, Anthony W.
Hoffman, E. Lee
Huggins, William H.

Hull, Richard B.
Hunt, Lyman C.
Hyer, Anna L.
Jackson, David M.
Jenkins, Esther C.
Jensen, Paul H.
Johnson, Donald W.
Kagan, Norman
Kallenbach, W. Warren
Karis, Charles
Karlren, Bjorn
Kerns, Victor
Ketcham, Carl H.
Kinniel, William T. Jr.
Klein, M.
Knowlton, James Q.
Komoski, P. Kenneth
Konick, Marcus
Krauser, Arthur W.
Kress, Gerard C.
Kresse, Frederick H.
Kropp, Russell P.
Lacy, Grace N.
Lagrone, Herbert F.
Landsman, Ted
Lanier, Vincent
Levens, Alexander S.
Levin, Gerald R.
Levinson, Elias
Levonian, Edward
Leyden, Ralph C.
Lieberman, Irving
Lohrer, Alice
Loubriel, Oscar
Lowell, Edgar L.
Lungaard, Harriet
MacDonald, Neil
McBeath, Ronald J.
McIntyre, Kenneth M.
McLain, John D.
McMurray, Glenn
McNeil, John D.
Mallinson, George G.
Mars, Walter J.
Martini, Harry R.
Marzocco, Frank N.
Mathis, B. Claude
May, Mark A.
Merrill, Irving R.
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INSTITUTE FOR EDUCATIONAL DEVELOPMENT
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November   , 1969

Dear

This letter is addressed to you as a former member of the
Advisory Committee on New Educational Media.

Under a contract with the U.S. Office of Education, the Institute
for Educational Development is engaged in a study of the impact
on education of Title VII of the National Defense Education Act.
The purpose of the study is to provide information which will
assist the U.S. Office of Education, and others, in the develop-
ment of programs in the future.   To this end, the study includes:

1. a review of the research and dissemination activities
carried out to determine the educational advances
which resulted;

2. an evaluation of the strengths and weaknesses of the
administrative procedures required by the law.

Since Title VII established an Advisory Committee (Advisory
Committee on New Educational Media), an evaluation of the
concept, role, and contribution of the Advisory Committee is an
important part of the study.   The Project Staff has reviewed
the minutes of the meetings of the Advisory Committee, and has
organized the contents into categories such as the general
criteria used to evaluate projects, the indications of concern
with impact, the general areas of focus, and the attendance of
members (Advisory Committee and USOE).   In addition to this
official source of information, the Project Staff believes that
comments from members of the Advisory Committee about the role
of the Committee and their service would make possible a more
complete evaluation of the concept and functioning of the Com-
mittee.

I also served as a member of the Committee and am assisting the
Institute in examining the strengths and weaknesses of our effort,
and in evolving recommendations for the improved functioning of
such committees.

We should appreciate receiving your comments about the concept of an advisory committee and your service on the Title VII Committee in comparison to others on which you have served. You might wish to comment on items such as: whether the Committee performed a valuable service; whether the staff support was equal to or better than that for other programs in which you have participated; whether you felt perhaps that your functioning was at times more largely procedural than substantial; whether certain criteria were used for selection more often than others; the criteria you felt were most important for selection; whether an advisory committee with representation from fields other than the immediate professional concern (media, in the case of Title VII) provides important dimensions to the deliberations; whether the Committee dealt with broad concerns or immersed itself in detail; whether the time and expense involved was a good investment in the program; and whether the Committee received the kind of technical assistance it needed to make decisions. A frank report on your frustrations, satisfactions, and recommendations would be most helpful.

You may be assured that your reply will be held in confidence and that no statement contained in it will be attributed directly to you.

An information sheet about Title VII of the National Defense Education Act is enclosed. Our records indicate that you represented category III during 1965.

To assist us in meeting our contract responsibilities, it is important that your reply reach us by December 15th. We look forward to hearing from you.

Sincerely,
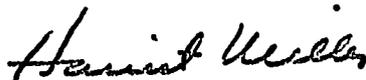
Harriet Miller
Title VII Advisory Committee (II)
Former Superintendent of Public
   Instruction, State of Montana

HM:s

INSTITUTE FOR EDUCATIONAL DEVELOPMENT

NATIONAL DEFENSE EDUCATION ACT

EFFECTIVE DATE: signed by President Eisenhower September 2, 1958.

TITLE VII, NATIONAL DEFENSE EDUCATION ACT

EFFECTIVE DATE: contained in the original act, September 2, 1958.

PRESENT STATUS: merged with the Cooperative Research Act in 1968.

PURPOSE: to encourage research and experimentation in more effective utilization of television, radio, motion pictures, and related media (including by amendment in 1968, printed and published materials).

PROVISIONS

Part A: authorized the U. S. Commissioner of Education, in cooperation with the Advisory Committee on New Educational Media (through grants or contracts), to conduct, assist, and foster research and experimentation including the development of new and more effective techniques and methods

1. for utilizing and adapting motion pictures, videotapes and other audio-visual aids, film strips, slides and other visual aids, recordings (including magnetic tapes) and other auditory aids, and radio and television program scripts for such purposes;
2. for training teachers to utilize such media with maximum effectiveness; and
3. for presenting academic subject matter through such media.

Part B: authorized the commissioner to disseminate to state or local educational agencies and institutions of higher education information concerning new educational media through contracts for:

(a) studies and surveys to identify the need for increased or improved use of the new educational media;

(b) preparation and publication of catalogs, reviews, analyses of research, and such other materials as were to be useful in encouraging more effective use of the newer media;

(c) providing advice, counsel, technical assistance, and demonstrations to state and local education agencies and to institutions of higher education.

ADVISORY COMMITTEE: termed the Advisory Committee on New Educational Media

Purpose: (1) advise, consult with, and make recommendations to the Commissioner on matters relating to the utilization or adaptation of television, radio, motion pictures, printed and published materials, or related media of communication for educational purposes, and on matters of basic policy arising in the administration of Title VII

(2) review all applications for grants-in-aid under sections 541 and 542 of this title for projects of research or experimentation and certify approval to the Commissioner of any such projects which it believes are appropriate for carrying out the provisions of Title VII and

(3) review all proposals by the Commissioner to enter into contracts under this title and certify approval to the Commissioner of any such contracts which it believes are appropriate to enter into contracts under this Title.

The Commissioner may utilize the services of any member or members of the Advisory Committee in connection with matters relating to the provisions of this title, for such periods, in addition to conference periods, as he may determine.

Membership:

Commissioner of Education as chairman of the Advisory Committee

Representative of the National Science Foundation

Three individuals identified with the sciences, liberal arts or modern foreign languages in institutions of higher education (category I)

Three persons actually engaged in teaching or supervision of teaching in elementary schools. (category II)

Three individuals of demonstrated ability in the adaptation or use of the newer media in education (category III)

Three representatives of the lay public who demonstrated an interest in the problems of communication media (category IV)

Procedure:

The Advisory Committee reviewed all research proposals and certified those worthy of support to the Commissioner of Education.

Decisions of the Advisory Committee were binding in matters involving the research programs. (The Commissioner could support only those projects specifically approved by the Committee although he could withhold support from projects approved by the Committee.)

In the case of the dissemination program (Part B), the Committee's role was advisory. (Its advice was sought, but support for dissemination contracts was not contingent upon Committee approval.)

Proposals submitted under the provisions of Part A:

> Abstracts and staff information sheets (including the Comments of Title VII project field readers) on each proposal and complete copies of all proposals which the field readers had recommended for approval were mailed to Advisory Committee members.

> At the semi-annual meeting of the Committee, action was taken on the proposals.

Proposals submitted under the provisions of Part B:

> The Advisory Committee made recommendations concerning priorities and needs for the demonstration program.

I was involved with the administration of Title VII of the NDEA
from _____ to _____.

My official position was _____

I reported directly to (name) _____

                (title) _____

THE LEGISLATION (NDEA 1958, Title VII A & B)

Was the legislation written in a fashion that provided realistic
parameters for the conduct of a program?

Were there certain limitations imposed due to the categorical
nature, as contrasted to the general aid nature, of the legisla-
tion? Were there some things to be learned about media that
couldn't be learned by studying media?

Did the legislation impose limitations in terms of acquisition
of equipment, application projects, etc.? Were these short-
comings rectified in other legislation, for instance ESEA?

Would you say that "generally" the legislative mandate and the
monies allocated were adequate to cover the requests by people
in the field?

How well were the legislative objectives of the program carried
out?

ORGANIZATIONAL CONSIDERATIONS

Did the Media Branch's location in the table of organization
enhance the Branch's ability to carry out the intent of the
legislation?

What effect, if any, did the several reorganizations within
USOE have on the functioning of the Media Branch?

How did you perceive the priority of Title VII within OE in
relation to other titles of the NDEA of 1958?

In which areas did you receive substantive support from the
Bureau and higher levels? In which areas did you feel more
support would have been helpful?

Were there good internal mechanisms for communication with other
offices concerned with media?

ADMINISTRATION OF THE PROGRAM

Realizing that all of us are "understaffed" did you feel that
enough staff was available to handle the job requirements
adequately? What additions (types and numbers of personnel)
would have been desirable?

What would you identify as the creative administrative dimensions
of this program, when compared to other similar activities in USOE?
Would it have been helpful if the funding for media and media-
related projects throughout USOE had been coordinated through
one office?

SELECTION OF PROJECTS

What do you recall as the principal criteria used for the
selection of projects?

Were different criteria used for selecting projects under
Parts A and B?

Were there more good proposals than monies available?

ADVISORY COMMITTEE'S ROLE

Were the four statutory categories helpful and appropriate?

Did the committee members play more of a procedural than
substantive role?

Was the committee involved principally in determining funding
for A projects more than for B, vice versa, or equally for
both?

Who might you cite as some of the most valuable committee
members?

FIELD READERS

How would you describe their role?

Could the same job have been performed by professionals assigned
to USOE?

DISSEMINATION

What would you rate as the best vehicles (mechanisms) for
disseminating information about the program?   Least effective?

How were the project outcomes disseminated most effectively?
Least effectively?

GENERAL

In your estimation which project(s) had the greatest impact
in terms of the intent of the legislation?

What suggestions would you make for the improved administration
and management of future programs of this nature?

PROJECT DATA SOURCES

The acquisition and organization of the data pertaining to Title
VII projects has been a difficult and time consuming task. A
principal reason has been the lack of any central source of
information about this program. The principal data resources
utilized are identified below. Another difficulty has been the
reconciliation and accounting for all 726 projects in all
categories of data from the different sources.

McBee Keysort Cards - These cards were maintained by the
Office of Education. Each card represents one Title VII
project and generally contains the following information:
grant number, date reviewed by Advisory Committee, date
received, proposal number, funds granted, funds requested,
state, amount expended per fiscal year, status of pro-
posal, (e.g. approved, disapproved, granted, completed,
etc.), grantee's address, transmittee's address, chief in-
vestigator's address, title of project, ammendments, re-
marks, duration proposed and actual beginning dates, and
proposed and actual ending dates. Approximately 75% of
the cards are keyed. The McBee cards file does not con-
tain all Title VII projects. These cards cover fiscal
years 1959 - 1967, but cards for all projects are not
available for each year.

Bureau Cards - These data were also maintained by the
Office of Education. Each card represents one Title VII
project; however, not all projects are represented. The
296 cards contain the following information: bureau
number, contact number, duration, legislative authority,
total cost, division, account number, expenditures per
fiscal year, title and institution, branch, project
officer, Federal funds, local funds, investigator. In a
few cases ERIC, ED or EP number cross references are
given. These cards incompletely cover fiscal years 1960-
1968.

Audio Visual Communication Review - Under a dissemination
contract authorized by Part B of Title VII, AVCR published
abstracts of every completed Title VII research (Part A)
project. IED possesses the first 15 installments dated
October 1963 through Fall 1967. These installments
abstract 293 of the approximately 390 Part A projects.

News and Reports -- The Office of Education published eight special editions of News and Reports, Title VII -- New Educational Media. These pamphlets contained abstracts prepared by the Office of Education, both Part A and B projects. Of the 726 Title VII projects, 363 are abstracted in News and Reports.

ERIC, Research in Education, Current Project Information - ERIC has published report abstracts in RIE and project abstracts in CPI. These abstracts generally contain the following information: title, author, institution affiliation, report numbers (e.g. NDEA-VII A - 134 and OE - 34025), report number bulletin (e.g. 1963, no. 40), contract descriptions, and an abstract. Not all Title VII projects have been abstracted by ERIC.

NAA - North American Autonetics, under a contract from the Office of Education, compiled the following Title VII project data: project number, fiscal year, type of institution, legislative authority, class of activity, approach design methodology, educational level of target group, topical area, subject matter, project dollars, and agency code. IED has access to this information in the form of a computer listing.

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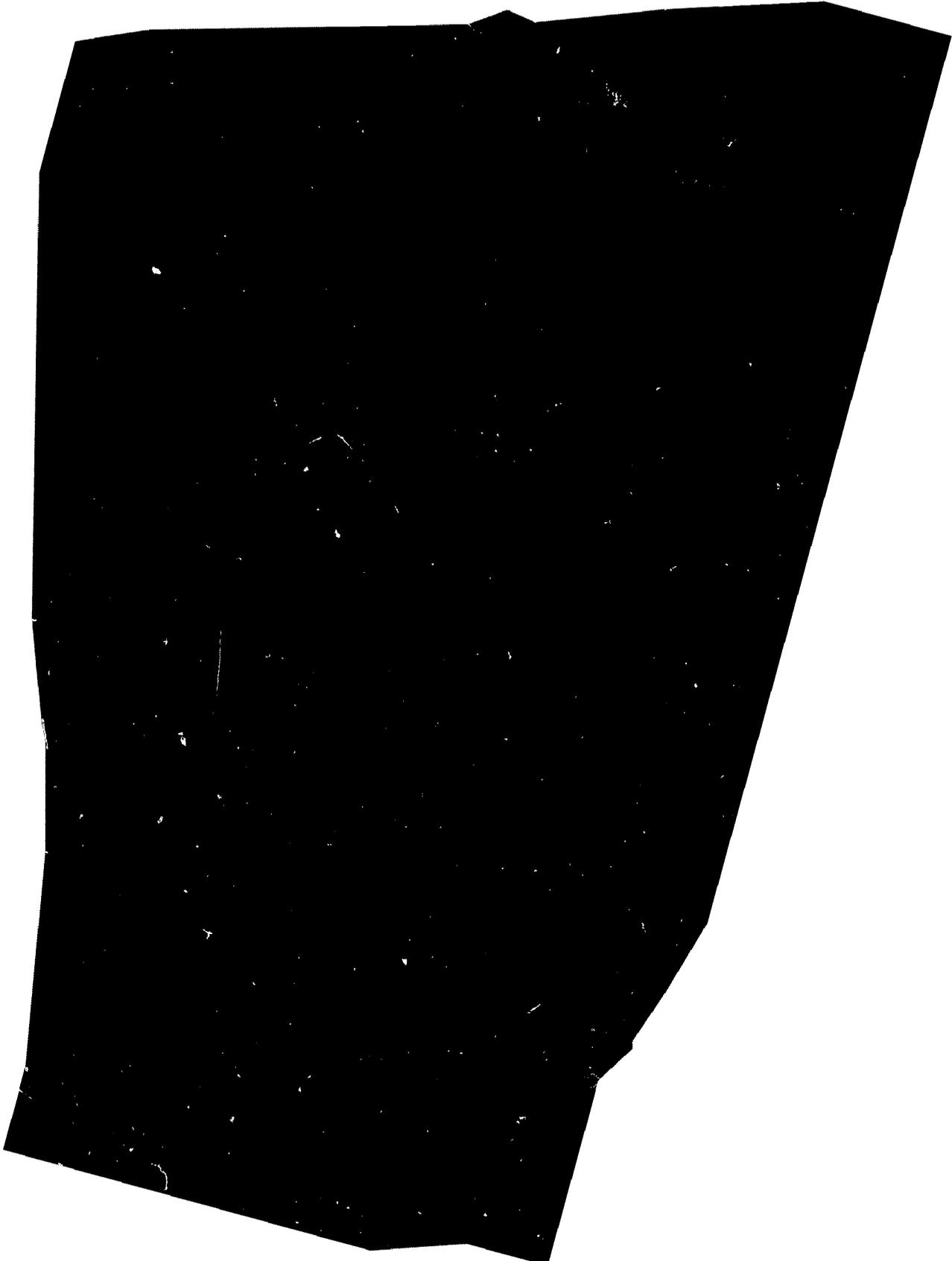
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