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A STUDY OF PROCEDURES AND RATIONALE EMPLOYED IN THE DEVELOPMENT OF BUDGETS FOR AUDIOVISUAL INSTRUCTIONAL MATERIALS IN SELECTED PUBLIC SCHOOL DISTRICTS OF PENNSYLVANIA

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I. METHOD OF RESEARCH

A. Statement of the Problem

The concern about quality education in the United States has been reflected both in an increase in the amount of resources placed at the disposal of school systems and in an examination of the processes of instruction. Benson reported that the changes being introduced by the new educational technology would lead to a refinement of the budgetary process in school systems with greater emphasis placed on various types of program and performance budgeting.[1] McCusker and Sorensen concluded that even though a decreasing proportion of money for public education comes from local sources, both policy and fiscal control will remain primarily local.[2]

As it is presently structured, the typical school budget in the Commonwealth of Pennsylvania does not provide the financial resources necessary for the implementation of programs designed to improve student

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[1]Charles S. Benson, Perspectives on the Economics of Education (Boston: Houghton Mifflin Company, Inc., 1963), p. 372.

[2]Henry F. McCusker, Jr. and Philip H. Sorensen, "The Economics of Education," in The New Media and Education, ed. by Peter H. Rossi and Bruce J. Biddle (Chicago: Aldine Publishing Company, 1966), p. 184.

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achievement and teacher efficiency through the utilization of audiovisual instructional materials. For example, $3,910,299.00 was spent for audiovisual instructional materials by the public school districts of the Commonwealth of Pennsylvania during the 1968 fiscal school year. This expenditure figure amounted to .2 per cent of the total budget monies allotted for education by these school districts for the 1968 fiscal school year and represented an average per pupil expenditure of $1.69.[1] The recommended national expenditure figure for audiovisual instructional materials during the 1968 fiscal school year was $35.64 per pupil.[2]

The primary purpose of this study was to identify the procedures and rationale employed in the development of budgets for audiovisual instructional materials in selected public school districts in the Commonwealth of Pennsylvania. The influence of Federal aid and innovative and change activities on budgets for audiovisual instructional materials were also investigated.

This study asked the following six questions:

1. What was the median state-wide Average Daily Membership (ADM) per pupil expenditure for audiovisual instructional materials?

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[1]Bureau of Statistics, Statistical Report of the Secretary of Education for the School Year Ending June 30, 1968 (Harrisburg: Pennsylvania Department of Education, 1969), p. 64.

[2]National Education Association, Research Division, Estimates of School Statistics, 1968-1969, Research Report 1968-R16 (Washington, D.C.: National Education Association, 1968), p. 20.

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2. Did innovative and change activities within a school district have any measurable effect on the district's budget for audiovisual instructional materials?

3. What rationale did school district officials use to justify expenditures for audiovisual instructional materials?

4. Did concurrence or agreement with professionals in the instructional media field in terms of the role and function of audiovisual instructional materials result in budget expenditures above the median state-wide ADM expenditure figure?

5. What effect did Federal aid have on budgets for audiovisual instructional materials?

6. How did public school districts determine the size of their budgets for audiovisual instructional materials?

B. Definitions of Terms

1. Audiovisual Instructional Materials - Are teaching materials designed to transmit information through both the visual and auditory channels. In this study, teaching materials designed to transmit information through the visual and auditory channels independent of one another were also considered audiovisual instructional materials. They included films, filmstrips, transparencies, recordings, exhibits, charts and maps.

2. Average Daily Membership (ADM) - The aggregate of the daily membership for the school year divided by the actual number of days school was in session. The school year in Pennsylvania is established by law at 180 days. The average daily membership was used because it was a better measure than the average daily attendance (ADA) in that

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it represented an average of the pupils belonging and provided a measure of the actual number of pupils for whom the expenditureswere made.

3. Budget Code 0224 - Is the subsection of the instructional category of the budget which contains expenditures for audiovisual materials and supplies used in the instructional program. These materials and supplies included films, filmstrips, recordings, exhibits, charts, maps and television and radio materials, including the rental of such materials from Regional Instructional Audiovisual Centers.

4. Curriculum - Is the program of intended learning devised by the school. It is that which goes on in the school that is more or less intentional.

5. Educational Objective - A statement describing the behaviors that a learner should acquire in a particular learning experience.

6. Fiscal School Year - A period of 1 year (not necessarily corresponding with the calendar year), at the end of which financial accounts are reckoned, balanced, and settled and reports are made. The fiscal school year in the Commonwealth of Pennsylvania elapses in school districts of the First Class between the first day of January and the thirty-first day of December of any year, and in school districts of all other classes between the first day of July of one year and the thirtieth day of June of the following year. In this study for school districts of the First Class the 1968 fiscal school year ran from January 1, 1968 to December 31, 1968, the 1969 fiscal school year ran from January 1, 1969 to December 31, 1969 and the 1970 fiscal school year lasted from January 1, 1970 to December

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31, 1970. For school districts of the Second, Third and Fourth Class, the 1968 fiscal school year ran from July 1, 1967 to June 30, 1968, the 1969 fiscal school year ran from July 1, 1968 to June 30, 1969 and the 1970 fiscal school year lasted from July 1, 1969 to June 30, 1970.

7. Innovative and Change Activities - Are deliberate, novel, specific changes, which were thought to be more efficacious in accomplishing the goals of a school system. They were changes in either the curriculum, school organization, or teaching methods and technology.

8. Per Pupil Expenditure - An expression in dollars and cents derived by dividing the total cost of a program by the number of students enrolled in a school district. In this study, the per pupil expenditure for audiovisual instructional materials was derived by dividing the total amount of money spent for these materials by the average daily membership (ADM) of the school district.

9. Planning, Programming, Budgeting System (PPBS) - A management technique that required money to be allocated not by line item, but by program. Each year, a certain amount of money was to be made available, and various programs were projected for one to five years in the future at certain levels of activity. The entire operation was considered in the planning, not just segments.

10. Rationale - A synoptic exposition or the gist of principles, procedures, or axioms underlying or constituting the foundation of human enterprise, especially of scientific work or experimentation. In this study, educational rationale referred to the underlying reason or reasons

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for using audiovisual instructional materials in the classroom.

11. Recommended National Expenditure Figure - A recommended amount of money to pay for a certain material or service, as established by an authority. In this study, the authorities were the American Library Association and the National Education Association.

12. School District - The area that is under the supervision of a given school board. The several school districts of the Commonwealth of Pennsylvania are divided into five classes on the basis of the population residing within their area of supervision.

13. School District Budget - Is the Instrument through which the people of the local school community determine the educational program and the amount of revenue they will provide in support of it. In the Commonwealth of Pennsylvania the school directors of each school district of the Second, Third, and Fourth Class are given the responsibility of constructing and proposing a budget of the amount of funds required by the district in its several departments for the following fiscal school year. In each school district of the First Class, the board of public education is given this responsibility.

C. Procedures

There were 545 organized public school districts in the Commonwealth of Pennsylvania during the 1970 school year. School districts in the Commonwealth are grouped into five classification categories which are based on the population that resides within their geographical

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regions. The categories include First Class, which contains 1,500,000 people or more; First Class A, which contains 500,000 people or more, but less than 1,500,000; Second Class, which contains 30,000 people or more, but less than 500,000; Third Class, which contains 5,000 people or more, but less than 30,000, and Fourth Class, which contains less than 5,000 people.

A sample of 200 of the 545 organized public school districts was used for this study. The sample was stratified to include the same percentage of the five public school district classification sizes that the population from which it was derived contained.

A 5-page structured questionnaire with open-ended and closed responses was used to collect the data for the study (Appendix A). Prior to its use the questionnaire was reviewed and modified by the Measurement and Evaluation Office of the University of Pittsburgh and six knowledgeable scholars from three other Pennsylvania Universities (Appendix B). In addition, the questionnaire was sent to three school district superintendents to test its reliability.

A time schedule for materials return was used with the questionnaire. On December 17, 1970 the questionnaire and two cover letters which explained the importance and purpose of the study were mailed to the superintendent of each school district included in the sample (Appendices C and D). Twenty-two days later, a second questionnaire was sent to all nonresponding school districts with a note attached which contained instructions to disregard it if the original questionnaire

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was recently completed and returned. Each questionnaire package was secretly coded to ensure that the proper nonresponding school districts were contacted a second time. Two personal on-site interviews and two telephone interviews were also used as follow-up techniques for four school districts included in the sample. The final cut-off date for acceptance of the returned questionnaires was January 19, 1971, eleven days after the second mailing.

A total of 126 school districts responded to the questionnaire which represented 63 per cent of the sample and 23 per cent of the total population (Appendix E). School districts that responded to the questionnaire included both First Class districts, sixteen Second Class districts, ninety-four Third Class districts and fourteen Fourth Class districts.

The percentage of response within each of the five school district classification categories included in the sample corresponded to the population as a whole. First Class school districts represented one per cent of the population and one per cent of the sample returns. Second Class school districts represented 10 per cent of the population and 13 per cent of the returns. Third Class school districts represented 78 per cent of the population and 75 per cent of the sample returns, while Fourth Class districts represented 11 per cent of both the population and sample return.

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D. Delimitations

This study did not seek an authoritative or inclusive answer as to why school districts failed to spend the nationally recommended amounts of money for audiovisual instructional materials. Instead, it investigated how public school districts in the Commonwealth of Pennsylvania constructed their budgets for audiovisual instructional materials and the rationale they used in support of them.

School district budgets are sometimes less than precise and highly manipulative. For these reasons, it must be pointed out that this study provides an understanding of the budgetary process in terms of trends, practices, and rationale and cannot hope to be precise when reporting selected expenditure figures. The variety of audiovisual instructional materials available, coupled with the numerous budget categories included within Pennsylvania public school district budgets made it impossible to detect and report expenditures for selected materials. Expenditures directed toward local school district production of audiovisual instructional materials were impossible to isolate or calculate. This study must be viewed as a descriptive investigation even though attempts were made to ascertain the influence of both innovative activities and Federal aid programs on budgets for audiovisual instructional materials.

Several topics discussed within the study, taken alone, offered additional areas for further investigation.

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II. BACKGROUND AND RELATED LITERATURE

A. Background of the Problem

A long-sought but elusive goal of educators has been instruction designed to meet the differences and capabilities of individual learners. Until recently it seemed that the techniques of education were destined to remain teacher-centered and textbook-dominated with audiovisual instructional materials used as aids to the teacher. In a society characterized by technological advances it was inevitable that modern technology would be applied to the problem of providing individualized instruction. Lieberman reported that a primary objective of the new educational technology was to individualize instruction and that resources devoted to this goal dwarfed all past efforts.[1] As a result, new instructional materials are now performing functions once performed exclusively by teachers. The new materials can illustrate, discuss, analyze, present content, form concepts, and build generalizations on a group or individual basis.[2]

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[1]Myron Lieberman, "Big Business, Technology, and Education," Phi Delta Kappan, January, 1967, p. 185.

[2]Henry C. Ruark, "Technology and Education," Phi Delta Kappan, June, 1961, p. 390.

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Edling concluded from a nation-wide study that instruction designed to meet the capabilities of learners was emerging with emphasis on the use of mediated instruction.[1] With the increasing shift of attention from the performance of the teacher to that of the student producers of audiovisual instructional materials have provided an array of materials designed to improve student achievement. Many of these new materials do not depend upon the teacher for routine execution and supervision while performing instructional functions.

In spite of widespread and growing ownership of audiovisual equipment as reported by Godfrey, audiovisual materials and techniques have failed to transform the nature of the teaching process in the classroom.[2] Twyford concluded that the assignment of money and resources for an educational program must rest on an understanding of its objectives and the goals it seeks to achieve.[3] A fully functioning instructional media program requires more than facilities, materials, equipment and qualified personnel. It requires support in the form of financial backing and a commitment to move away from the traditional self-contained, teacher-dominated classroom to the one which focuses greater attention upon the individual

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[1]Jack V. Edling, "Individualized Instruction--The Way It Is--1970," Audiovisual Instruction, February, 1970, p. 16.

[2]Eleanor P. Godfrey, The State of Audiovisual Technology: 1961-1966. Mongraph No. 3, Washington, D.C., 1967, p. 78.

[3]Loran C. Twyford, Jr., Money and Resources for a Media Program, p. 1. (Mimeographed.)

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learner and thus provides a greater range of instructional materials and learning experiences.

The pressure to justify expenditures is intense for school officials committed to change and improvement in their educational programs. Heinich reported that the tendency to view instructional technology as overhead had resulted from the practice of adding the costs of materials and equipment to standard budgetary and instructional arrangements without supportive cost-effectiveness information.[1]

At a time when inflation, rising salary rates and high construction costs are diminishing the purchasing power of the educational tax dollar, concerned citizens and cost-conscious administrators are beginning to question and challenge the magnitude of selected budgetary commitments. Ruark concluded that the issues of classroom use of the new media would revolve around the problems of organization, staff, space, finance, and program.[2]

B. Review of Related Research

From an economic point of view education as it is currently structured in the United States can be characterized as labor intensive and

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[1]Robert Heinich,, "What is Instructional Technology?," Audiovisual Instruction, March, 1968, p. 222.

[2]Ruark, op. cit., p. 391.

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technologically underdeveloped.[1] The largest single instructional expenditure item in the typical public school budget is directed to salaries of the instructional staff, while a very small percentage is budgeted for instructional materials. In an analysis of public school expenditures, Sorensen and Kincaid concluded that only about 2 per cent of all educational expenditures is devoted to instructional materials.[2] The Commission on Instructional Technology reached a similar conclusion when they noted that no more than 4 per cent of the per pupil expenditures in public schools in any year is spent for instructional materials. On the other hand, the Commission pointed out that most school systems spent more than 60 per cent of their operating budgets on instructional salaries.[3] Metzler found that in some cases 90 per cent of the total school budget was devoted to salaries.[4]

The expenditure pattern of the nation's public elementary and secondary schools during the last five years revealed a similar trend in relation to the percentage of total expenditures devoted to the acquisition

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[1]Henry F. McCusker, Jr. and Philip H. Sorensen, "The Economics of Education," in The New Media and Education, ed. by Peter H. Rossi and Bruce J. Biddle (Chicago: Aldine Publishing Company, 1966), p. 184.

[2]P. H. Sorensen and H. V. Kincaid, "What's Ahead in the Programmed Instruction Market?" Applied Programmed Instruction, ed. by S. Margulies and L. D. Eigen (New York: 1962), p. 147.

[3]Commission on Instructional Technology, To Improve Learning--A Report to the President and the Congress of the United States (Washington, D.C.: Government Printing Office, 1970), p. 86.

[4]John H. Metzler, "Educational Technology and Collective Negotiations," Educational Technology, October, 1967, p. 16.

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of instructional materials other than textbooks. Table I contains a compilation of the expenditures and percentages during the last five years. On a national basis, the highest percentage of per pupil expenditure devoted to the acquisition of instructional materials during the last five years was 3.2 per cent. The drop in the percentage of total per pupil expenditures during the last two years was due to increased teacher salaries and does not reflect a decline in the total dollar amounts spent on instructional materials.

TABLE I

PER PUPIL EXPENDITURES FOR INSTRUCTIONAL MATERIALS IN PUBLIC SCHOOLS, 1965-1970[a]

	1965-66	1966-67	1967-68	1968-69	1969-70
Per Pupil Expenditure	$11.80	$13.70	$14.75	$15.08	$15.66
Percentage of Total Per Pupil Expenditure	2.9	3.2	3.2	2.9	2.7

Source: Orlando F. Furno and James E. Doherty, "Cost of Education Index 1969-70," School Management, January, 1970, pp. 42-43.

[a]The expenditures and percentages were calculated from a nation-wide survey of public school district spending and represent the nation's median expenditure figures for the last five years. Expenditures for textbooks are not included in the above figures.

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The fact that American education has been characterized as technologically underdeveloped does not mean that development has not taken place. On the contrary, it means that in relation to the potential for development, the actual development that has transpired is indeed small. In the spring of 1967, the Research Division of the National Education Association queried a sample of 1,609 teachers in school systems throughout the nation to determine the availability and use of instructional materials in the classroom. The Research Division's survey revealed that the most readily available and frequently used instructional resources were charts and maps, silent filmstrip projectors, phonographs, and 16 mm motion picture projectors. The survey concluded that instructional materials available for classroom use were becoming an integral part of the instructional process.[1]

Based on its annual market review, the Society of Motion Picture and Television Engineers reported that the nation's educational institutions spent $570 million for audiovisual equipment, materials, and services during the 1968 calendar year. The largest segment of the audiovisual market in the United States following World War II was the business and industrial segment. For 21 years they led the market in purchases of equipment and materials. In 1966, the school market more than doubled

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[1]National Education Association Research Division, "Instructional Resources in the Classroom," NEA Research Bulletin (Washington, D.C.: National Education Association, 1967), p. 77.

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its purchases of software and hardware over the previous year and became the single largest market for the audiovisual industry in the United States.[1]

The National trend in audiovisual expenditures is toward purchasing instructional materials for use with the audiovisual equipment presently available in the schools in an effort to develop and consolidate instructional programs. In its biennial report of the amount of money spent on audiovisual instruction in the nation's schools, School Management reported that the median school district spent $3.96 per pupil unit(EPU) for audiovisual equipment, materials and salaries during the 1968-69 school year. Of the total expenditure for audiovisual equipment and materials, approximately 36 per cent was spent for audiovisual materials.[2] Another national survey reported that sales of audiovisual instructional materials represented 53 per cent of the total school expenditure for audiovisual education during the 1968 calendar year.[3]

American education's investment in audiovisual equipment and materials has received considerable financial support from selected Federal aid to education programs. The National Defense Education Act of 1958 specifically included provisions for funds that enabled local

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[1]Thomas W. Hope, "Market Review: Nontheatrical Film and Audio-Visual-1968," Journal of the Society of Motion Picture and Television Engineers, Inc.(November, 1969), p. 983.

[2]"The Cost of Audio-Visual Instruction 1962/ 68-69," School Management, October, 1968, pp. 74, 78.

[3]Hope, op. cit., p. 981.

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school units to purchase audiovisual equipment and materials for the purpose of strengthening instructional programs in selected curriculum areas. The Act also provided funds for the development of systematic audiovisual education programs, the training of persons for competent use of audiovisual materials, and the dissemination of information concerning modern educational media.[1]

The Elementary and Secondary Education Act of 1965 represented the largest single commitment by the Federal Government to strengthen and improve the educational quality of American education. Title II of this Act recognized that teaching and learning depended upon effective school library materials, high quality up-to-date textbooks, and a variety of other instructional resources. As a result Title II provided funds to the states to increase the quantity, quality, and availability of library books, textbooks, and audiovisual teaching materials in their instructional programs.[2]

Table II contains a listing of the expenditures for audiovisual instructional materials by school districts in the Commonwealth of Pennsylvania under authorization of Title II of the Elementary and Secondary Education Act. The expenditures are listed for the 1966-70 fiscal school years.

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[1]K.C. Rugg, Improving Instruction--Budgeting Your Audio Visual Program, Report to the Audio-Visual Council on Public Information. (Bloomington, Ind.: Indiana University Press, 1960), p. 6.

[2]U.S. Department of Health, Education, and Welfare, Profile of the Elementary and Secondary Education Act of 1965 (Washington, D.C.: Government Printing Office, 1967), p. 7.

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TABLE II

EXPENDITURES FOR AUDIOVISUAL INSTRUCTIONAL MATERIALS BY PENNSYLVANIA SCHOOL DISTRICTS UNDER AUTHORIZATION OF E.S.E.A., TITLE II, 1966-1970

Fiscal School Year	Total Expenditure[a]
1966	$ 232,692.00
1967	$ 514,000.00
1968	$ 515,960.00
1969	$ 275,000.00
1970	$ 256,000.00

Source: Personal telephone communication to Mr. Ralph R. Rowe, Business Officer, Division of School Libraries, E.S.E.A., Title II, Pennsylvania Department of Education, Harrisburg,
[a]Total expenditures were rounded-off to the nearest dollar.

[a]Total expenditures were rounded-off to the nearest dollar.

In 1960, the Audio-Visual Council on Public Information conducted a study which analyzed the budgets of successful audiovisual programs in the United States. Twenty-eight school systems were selected on the basis of geographical location, size of the school system, per pupil expenditure for audiovisual program and willingness to be included in the publication annonymously. The results of the study indicated that the typical audiovisual budget was:

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1. Planned cooperatively as a part of the total school system budget, based on the needs of the total instructional program.

2. Financed principally from tax funds.

3. Financed, for the most part, by regularly allocated funds, but occasionally supplemented by funds allocated to the school system budget.

4. Supplemented by bond funds for purchase of audiovisual equipment in new classroom buildings and new audiovisual centers.

5. Sometimes given financial support from the state.

6. Justified to the extent that it serves as a means for the improvement of instruction.

7. Enhanced through audiovisual demonstrations to school board and lay groups.

8. Soon to receive considerable financial support from the National Defense Education Act of 1958.[1]

This study did not attempt to present an example of a completely adequate program or one that was completely adaptable to other situations. It merely analyzed the budgetary practices of successful audiovisual programs.

Standards for School Media Programs, published in March of 1969 by the National Education Association and the American Library Association, represented the first joint effort of these two organizations to provide school officials with national guidelines to aid in the implementation of instructional media programs. The Standards were compiled to meet the

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[1]Rugg, op. cit., p. 8.

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requirements of quality instructional media programs and described the services of the instructional media program in the school. Requirements for the staff, resources, expenditures, and facilities needed to implement a successful program were also listed. Implicit throughout the publication was the principle of adequate financial support. An annual expenditure for materials of not less than 6 per cent of the national average per pupil operational cost (based on average daily membership) per year per student was recommended. It was emphasized that this expenditure figure did not include funds for school-adopted textbooks, reference materials housed permanently in classrooms, closed circuit television installations, subscription television, electronic learning centers, distribution systems, supplies, equipment, and the processing of materials.[1]

The National Audio-Visual Association published the results of an audiovisual survey undertaken for the Department of Audiovisual Instruction by Dr. Loran Twyford which estimated the total amount of various types of audiovisual equipment and materials in the nation's elementary and secondary public schools as of July 1, 1969.[2] Based on the results of the survey, Twyford reported that it would cost $16

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[1]American Library Association and National Education Association, Standards for School Media Programs (Washington, D.C.: American Library Association and National Education Association, 1969), p. 36.

[2]National Audio-Visual Association, Bulletin of the Association, Estimated A-V Equipment and Materials in Use in U.S. Schools (Fairfax, Virginia: By the Association, 1970).

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billion to purchase the instructional materials required for a nation-wide basic program as proposed by the Standards, and $6.8 billion annually for replacement of materials and equipment.[1]

School officials charged with the responsibility of administering educational programs face many problems which hamper the effective use of audiovisual instructional materials. On a nation-wide survey, lack of money for an adequate program was cited most frequently by school superintendents as a major problem in using audiovisual instructional materials.[2]

C. Need for the Study

Recent trends in Pennsylvania have indicated that the general current-fund expenditures of school districts in the Commonwealth are expected to nearly double in the next ten years. In addition to increased expenditures, a decrease in the number of students in public elementary and secondary schools is also forecast.[3]

The present status of Pennsylvania school budget allocations for audiovisual instructional materials, coupled with the nation-wide trend toward mediated instruction, pointed to the need for a study dealing with

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[1]Loran C. Twyford, Jr., "Educational Technology in Elementary and Secondary Public Schools With Amounts Required to Attain Standards" (Mimeographed Table, New York, 1969).

[2]Godfrey, op. cit., p. 68.

[3]Hillard R. Hoffman, Projections Of Selected Educational Statistics for Pennsylvania to 1979-80 (Harrisburg: Pennsylvania Department of Education, 1970), p. "Highlights Section."

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budgetary practices and policies in relation to audiovisual instructional materials. A study of the procedures and rationale employed in the development of budgets for audiovisual instructional materials has never been completed. Although several studies and surveys have been completed that deal with the amount of audiovisual equipment and materials available in the public schools throughout the nation (Twyford-1969, Godfrey-1967, and Finn-1962), none have attempted to study the budgetary practices and rationale that made these materials available. The attention that has been focused on equipment needs and inventory lists has resulted in a lack of guidelines, policies and rationale for the establishment of budgets for audiovisual instructional materials.

The results of this study provide decision-makers with an overview of the budgetary practices and policies utilized by selected public school districts in the Commonwealth of Pennsylvania in the implementation and operation of audiovisual programs. It also provides a statistical data base that can be utilized in the justification of programs and budgets during program planning and supervision phases. In addition, the study revealed the relationship between budgets for audiovisual instructional materials and innovative and change activities within a public school district.

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III. ANALYSIS AND INTERPRETATION OF QUESTIONNAIRE DATA

A. Introduction

This chapter contains a presentation and analysis of the data collected for the study. It includes (1) the median state-wide ADM per pupil expenditures for audiovisual instructional materials for the 1968-1970 fiscal school years, (2) the influence of innovative and change activities on budgets for audiovisual instructional materials, (3) the rationale used by school district officials to justify budget expenditures for audiovisual instructional materials, (4) the effect that concurrence or agreement with professionals in the instructional media field in terms of the role and function of audiovisual instructional materials had on budget expenditures, (5) the effect of Federal aid on budgets for audiovisual instructional materials, and (6) the techniques utilized by public school districts to determine the size of their budgets for audiovisual instructional materials.

1. The Median State-wide ADM Per Pupil Expenditures for Audiovisual Instructional Materials for the 1968-1970 Fiscal School Years

In an effort to accelerate the improvement of instructional media services and programs in the schools throughout the nation, the American

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Library Association and the National Education Association recommended that not less than 6 per cent of the national average for per pupil cost be spent per year per student. The national average per pupil cost for the 1970 fiscal school year was $722.00. Based on the recommended 6 per cent standard, the nationally recommended expenditure per student for audiovisual instructional materials for the 1970 fiscal school year was $43.32. The median state-wide ADM per pupil expenditure for audiovisual instructional materials during the 1970 fiscal school year based on the ADM of each school district that responded to the questionnaire was $2.21. This expenditure is considerably lower than the nationally recommended $43.32 expenditure figure. The lowest per pupil expenditure for the 1970 fiscal school year was fifteen cents and the highest was $9.25 which yielded a range of $9.10.

The median ADM per pupil expenditures for the 1968, 1969, and 1970 fiscal school years of the 126 public school districts included in the study are listed in Table III. The nationally recommended expenditure figures for each of the three fiscal school years are also included.

Although the public school districts included in the sample consistently spent less than recommended for audiovisual instructional materials, the range of their spending steadily decreased. For instance, in the 1968 fiscal school year the lowest per pupil expenditure was four cents and the highest was $20.74. This yielded a range of $20.70. The lowest per pupil expenditure in the 1969 fiscal school year was one cent and the highest was $10.92, which yielded a range of $10.91. In the

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TABLE III

RECOMMENDED AND ACTUAL EXPENDITURES PER PUPIL FOR AUDIO-VISUAL INSTRUCTIONAL MATERIALS BY SELECTED PUBLIC SCHOOL DISTRICTS FOR THE FISCAL SCHOOL YEARS 1968-1970 IN THE COMMONWEALTH OF PENNSYLVANIA

Fiscal School Year	Median State-Wide Per Pupil Expenditure	Recommended National Per Pupil Expenditure
1970	$2.21	$43.32
1969	$1.77	$38.28
1968	$1.50	$35.64

Notes: The state-wide and recommended per pupil expenditure figures listed in the table were calculated and based on the average daily membership (ADM) figures for the 1968-1970 fiscal school years. The average state-wide expenditures of the sample school districts were very close to the median figures reported in the table. For the 1968-1970 fiscal school years, the average per pupil expenditure figures were $1.86 for 1968, $1.98 for 1969, and $2.46 for 1970.

three fiscal school years from 1968-1970, the range of spending for the sample decreased from a high of $20.74 in the 1968 fiscal school year to a low of $9,10 in the 1970 fiscal school year.

Table IV contains the median ADM per pupil expenditure figures of the five different class size school districts included in the sample for the 1968-1970 fiscal school years.

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TABLE IV

MEDIAN PER PUPIL EXPENDITURES FOR AUDIOVISUAL INSTRUCTIONAL MATERIALS OF THE FIVE CLASS SIZE SCHOOL DISTRICTS FOR THE FISCAL SCHOOL YEARS 1968-1970[a]

Class Size District	Fiscal School Year 1970	1969	1968
First Class	$1.25	$ .82	$ .78
First Class A	$ .96	$ .51	$ .74
Second Class	$2.61	$1.81	$1.77
Third Class	$2.02	$1.66	$1.46
Fourth Class	$3.48	$2.11	$2.31

[a]The expenditure figures listed for the First Class and First Class A districts are not median expenditure figures because there was only one school district in each class. The expenditure figures for the First and First Class A school districts are therefore average per pupil expenditures.

An analysis of the median per pupil expenditure figures of the five different class size school districts contained within the sample revealed that the smallest size school districts, that is districts of the Fourth Class, spent the largest amount per pupil for audiovisual instructional materials. The larger size school districts, First Class and First Class A, spent considerably less per pupil for audiovisual instructional materials than school districts of the other class sizes. The differences in the expenditures could have resulted from imprecise accounting figures within school district budgets. In addition, audiovisual programs

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in the larger school districts could have attained optimum levels of service and growth and therefore required smaller levels of financial support.

The trend in the per pupil expenditures for audiovisual instructional materials indicated that school districts in the sample increased their expenditures gradually in an effort to acquire audiovisual instructional materials. Yet in spite of the gradual increase, the actual per pupil expenditures for the three fiscal school years covered in this study remained at an average of 5 per cent of the nationally recommended amount.

2. The Influence of Innovative and Change Activities on Budgets for Audiovisual Instructional Materials

Innovation is considered a nebulous concept in education because very little research has been conducted to determine what innovations have found their way into American schools. For use in this study, the concept of innovation was operationally defined as deliberate, novel, specific changes, which were thought to be more efficacious in accomplishing the goals of a school system. They included changes in the curriculum, school organization, and teaching methods and technology.

An open-ended question was included in the questionnaire which asked the respondent to list any changes or programs of an innovative nature in the curriculum or school organization of his school district and

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the date it was initiated. The respondent was also asked to be specific and explain how extensive the innovation or change activity had been introduced. The decision to accept and classify an activity as innovative was based on the operational definition listed for the study and on a national survey conducted by Nation's Schools Magazine. The 1967 survey dealt with innovative practices in an effort to determine the extent and types of innovations that had found their way into American schools. The survey revealed that 27 major innovations were in operation in the areas of curriculum, technology, and school organization. For the purposes of this study, an activity listed by a respondent was considered innovative if it was included on the Nation's Schools survey list or could be classified under a category included in the study's operational definition (Appendix F).

Activities conducted within thirty-two of the 126 school districts included in the study were classified as innovative or change activities (Appendix G). In an effort to ascertain the effect of innovative and change activities on a school district's budget, the ADM expenditures for innovative districts were calculated for the 1968-1970 fiscal school years and compared to the ADM expenditure figures of school districts not on the innovative-change list for the same three fiscal school years. A graphic comparison of the median ADM expenditure figures for the two groups is given in Table V.

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TABLE V

MEDIAN ADM EXPENDITURES FOR AUDIOVISUAL INSTRUCTIONAL MATERIALS OF INNOVATIVE AND NON-INNOVATIVE SCHOOL DISTRICTS FOR THE 1968-1970 FISCAL SCHOOL YEARS

Fiscal School Year	Innovative Districts	Non-Innovative Districts
1970	$2.23	$2.19
1969	$1.64	$1.85
1968	$1.56	$1.50

A comparative analysis of the ADM expenditure figures for audiovisual instructional materials of innovative and non-innovative school districts revealed that there was little difference in the expenditure figures. For example, during the 1970 fiscal school year the differences amounted to 4 cents, in the 1969 fiscal school year it amounted to 21 cents, and in the 1968 fiscal school year it amounted to 6 cents. The average difference in expenditures between innovative and non-innovative school districts for the 1968-1970 fiscal school years amounted to 10 cents.

The most notable effect of innovative and change activities on budgets for audiovisual instructional materials was their influence on the pattern of expenditures. The ADM expenditure figures for audiovisual instructional materials of school districts on the innovative and change list were checked two years prior to the date of initiation of the innovation or change to determine its influence on the district's expenditure pattern.

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Of the thirty-two school districts included on the innovative-change list, twenty-five had increased their ADM expenditures for audio-visual instructional materials over the three year period, five decreased their spending, and two remained even. A complete list of the percentage increases and decreases is presented in Appendix H. The smallest increase was 1 per cent and the largest was 1463 per cent, which provided a range of 1462 per cent. The median increase in ADM expenditures was 64 per cent. The five school districts that did not increase their ADM expenditures had experienced an actual decrease in expenditures. The smallest decrease was 8 per cent and the largest was 63 per cent, which yielded a range of 55 per cent. The median decrease for the five school districts was 26 per cent. The innovative-change activities that were introduced in the school districts that had experienced a decrease in ADM expenditure figures were included in all three types or categories of innovative activity.

3. The Rationale Used by School District Officials to Justify Budget Expenditures for Audiovisual Instructional Materials

In this study educational rationale was defined as the reason or reasons for using audiovisual instructional materials in the classroom. An attempt was made to ascertain from the respondents a general picture of the educational rationale used to support budgets for audiovisual instructional materials. An opportunity to select three alternatives with a ranking scheme (First, Second, Third) was provided in order to obtain a more complete picture of each respondent's educational rationale in relation to the use of audiovisual instructional materials. The eight

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alternatives that were listed for selection did not represent a comprehensive list, they merely reflected different levels of understanding. The number of school districts that selected each rationale is listed in Table VI. The number and percentage of school districts that ranked each rationale first, second, and third are also included.

The rationale that audiovisual instructional materials increased teacher effectiveness and efficiency was the rationale selected by the largest number of school districts as justification for their budget expenditures. The emphasis on increased teacher effectiveness and efficiency seemed to indicate that most school districts regarded audiovisual instructional materials as teaching tools to be used by the teacher. The fact that 24 per cent of the school districts chose the rationale that audiovisual instructional materials increased overall student and teacher productivity by performing routine teacher functions suggested that little emphasis was placed on student use of these materials as learning tools.

Thirty-two of the 126 school districts that responded to the questionnaire selected the rationale that research had demonstrated the effectiveness of audiovisual instructional materials as justification for their budget expenditures. Of this number, sixteen ranked it as their third and final justification. Only seven of the 126 school districts ranked the research rationale as their first justification for budget expenditures. This seemed to indicate that educational media research had a limited influence on decisions to purchase audiovisual instructional materials.

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TABLE VI

RATIONALE SELECTED AND RANKED IN ORDER OF IMPORTANCE IN JUSTIFICATION OF EXPENDITURES FOR AUDIOVISUAL INSTRUCTIONAL MATERIALS[a]

Rationale	Ranked 1st In Importance No.	%	Ranked 2nd In Importance No.	%	Ranked 3rd In Importance No.	%	Total N
1. They increase teacher effectiveness and efficiency.	67	60	33	30	12	11	112
2. They supply a concrete basis for conceptual thinking.	14	22	24	38	25	38	63
3. Research has demonstrated their effectiveness.	7	22	9	28	16	50	32
4. They provide a substitute for meaningless verbalism that leads to referent confusion.	3	12	10	42	11	46	24
5. They increase overall student and teacher productivity by performing routine teacher functions.	9	30	4	13	17	57	30
6. They are included in a budgetary category.	0	0	1	50	1	50	2
7. They make teaching and learning more interesting.	24	25	39	41	33	34	96

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TABLE VI (Continued)

Rationale	Ranked 1st In Importance No.	%	Ranked 2nd In Importance No.	%	Ranked 3rd In Importance No.	%	Total N
8. Federal aid programs provide financial support for their acquisition.	1	8	3	23	9	70	13
9. Others.[b]	4		6				10

[a]The percentage figures are based on the total number of school districts that selected each rationale and not on the total number contained in the sample. Percentages were rounded off to the nearest whole number.

[b]Three school districts listed staff demands for materials as their second choice, four listed teacher requests as their first choice and three listed as their second choice the rationale that audiovisual materials removed time and space barriers.

The fact that fifteen of the 126 school districts selected the justification rationale that audiovisual instructional materials were included in a budgetary category or that Federal aid programs provided financial support for their acquisition suggested that educators preferred to justify budget expenditures from an educational and not a financial point-of-view.

The rationale selected by school districts on the innovative-change list is listed in Appendix J. The rationale selected by school districts in the First Class, First Class A, Second Class, Third Class and Fourth Class classification categories is listed in Appendices I, K, L and M.

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4. The Effect That Concurrence or Agreement With Professionals in the Instructional Media Field in Terms of the Role and Function of Audiovisual Instructional Materials Had On Budget Expenditures

The questionnaire listed five general instructional purposes for using audiovisual instructional materials. The respondent was asked to select and rank two alternative descriptions which best described the role or function of audiovisual instructional materials in the curriculum of his school district. This item was included to determine the percentage of school districts in the Commonwealth that were in concurrence or agreement with professionals in the instructional media field in terms of the role and function of audiovisual instructional materials. It was also included to determine if concurrence or agreement with professionals in the field resulted in budget expenditures above the median state-wide ADM expenditure figure.

The respondent was considered in concurrence or agreement with professionals in the instructional media field if his response included either or both of the following functions or roles:

1. Audiovisual instructional materials used as supplementary materials by teachers to increase their effectiveness.

2. Audiovisual instructional materials used to present information and conduct routine pupil activities without the aid of the teacher.

The two possible criterion replies were based on the function of media as outlined in a position paper published by the Department of Audiovisual Instruction of The National Education Association entitled "The Function

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of Media in the Public Schools," which appeared in the January, 1963 issue of Audiovisual Instruction.

An analysis of the responses in relation to the role and function of audiovisual instructional materials of the entire sample of school districts included in this study revealed that 74 per cent (93 of 126) were in agreement or concurrence with professionals in the instructional media field. Twenty-six per cent (33 of 126) were not in concurrence or agreement with professionals in the media field.

An analysis of the responses of school districts that spent above the state-wide ADM median expenditure figure for audiovisual instructional revealed that 74 per cent (45 of 61) were in agreement or concurrence and 26 per cent (16 of 61) were not. A similar trend was found among the school districts that spent below the state-wide ADM expenditure figure. Seventy-three per cent (46 of 63) were found to be in agreement with professionals in the field. The primary instructional roles and functions of audiovisual instructional materials in the school districts included in this study are listed in Table VII.

A comparison of the roles and functions of audiovisual instructional materials (Table VII) with the rationale that was selected for their purchase (Table VI) indicated basic agreement. Audiovisual instructional materials were used primarily as supplementary materials and to conduct routine instructional activities, while the major justification rationale selected for their purchase was increased teacher effectiveness and efficiency. The second major role and function of audiovisual instructional

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materials in the curriculum of the sample school districts was to create interest and motivation. This corresponded to the second most frequently selected rationale which justified budget expenditures on the basis that audiovisual instructional materials made teaching and learning more interesting.

TABLE VII

PRIMARY INSTRUCTIONAL ROLES AND FUNCTIONS OF AUDIOVISUAL INSTRUCTIONAL MATERIALS AS INDICATED BY SAMPLE SCHOOL DISTRICTS

Role or Function	Number	Per Cent
Used both as supplementary materials and to conduct routine instructional activities	93	74
Used to create interest and motivation	16	13
Used as enrichment materials	17	13
Total	126	100

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Additional items were included in the questionnaire in an effort to determine if reasons other than non-agreement with professionals in the instructional media field accounted for ADM expenditures below the state-wide median. Of the sixty-three public school districts that spent less than the state-wide ADM median expenditure for audiovisual instructional materials, 47 per cent (30 of 63) felt that their supply or stock of materials was adequate to meet the needs of their instructional program. Eleven per cent of the school districts felt that audiovisual instructional materials were not being used to accomplish valid measurable objectives. In addition, 6 per cent (4 of 63) believed that the content or subject matter of audiovisual instructional materials was inappropriate for educational use. A small percentage of the school districts that spent less than the state-wide ADM median expenditure (6 per cent) purchased, rented and shared audiovisual instructional materials with other school districts.

Since the amount of audiovisual equipment available to a school district provides a measure of the capability and in turn expenditures for audiovisual instructional materials, an attempt was made to ascertain the status of the equipment supply in the school districts that spent less than the state-wide median ADM expenditure. This was done in order to examine the possibility that an inadequate amount of audiovisual instructional equipment might account for low budget expenditures.

The Statistical Report of the Secretary of Education for the School Year Ending June 30, 1968, contained a list of audiovisual equipment

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available by county in the elementary school systems of the Commonwealth. The total amount of each equipment type was listed for each county. For purpose of comparison, the total amount of equipment listed in each category for each county was divided by the total elementary school population in each county. This provided the number of students per each of the six equipment types in each county. A master tabulation sheet was constructed for each equipment type with columns that listed the counties and their equipment ratios. A second tabulation sheet listed each of the sixty-seven counties and ranked them on the basis of a low, middle, and upper scheme for each equipment type in relation to the equipment ratios of other counties. Counties that were ranked low on 50 per cent or more of the equipment types were considered weak from an equipment point-of-view. The student-equipment ratios are listed in Appendix M.

Due to the fact that the above report dealt only with the elementary schools in the Commonwealth, a second report entitled A Survey and Analysis of the Availability and Utilization of Audio-Visual Materials and Multi-Media Instructional Devices in the Secondary Public Schools of the Commonwealth of Pennsylvania was used to analyze the secondary schools of the school districts included in the sample. The primary purpose of the survey listed above was to determine the state of audiovisual evolution of the public secondary schools of Pennsylvania in order to provide criteria for comparison by individual school districts.

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An analysis of the audiovisual equipment available in the different size secondary schools revealed that schools which had a population under 500 students and above 1,500 had less equipment available than those with student populations between 500 and 1,500 students. A question was included on the questionnaire which asked the respondent to check the type and student population of his secondary school or schools.

A check on the counties in which the school districts which spent below the state-wide median ADM expenditure were located revealed that 6 per cent (4 of 63) were located in counties ranked weak in terms of equipment availability on the elementary school level.

An analytic comparison of the secondary school patterns and student populations of school districts on the low ADM expenditure list with the results of the survey which dealt with the secondary schools in the Commonwealth revealed that 31 per cent (20 of 63) had secondary school patterns and student populations considered below average in terms of equipment availability.

5. The Effect of Federal Aid on Budgets for Audiovisual Instructional Materials

Each public school district in the Commonwealth of Pennsylvania is required by law to submit an Annual Financial Report to the Department of Education in Harrisburg which lists expenditures in each category of the district's budget. The budget category for audiovisual instructional materials is designated 0224. Within the 0224 category of the budget,

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expenditures are listed by amount and source. The amount of Federal aid expenditures presented and discussed in this section were taken from the 0224 budget categories of school districts included in the sample.

The amount of money received from Federal aid programs during the 1968-1970 fiscal school years for audiovisual instructional materials by school districts included in the sample are listed in Table VIII.

TABLE VIII

AMOUNT OF FEDERAL AID IN BUDGET EXPENDITURES FOR AUDIOVISUAL INSTRUCTIONAL MATERIALS OF SCHOOL DISTRICTS INCLUDED IN THE STUDY, 1968-1970 FISCAL SCHOOL YEARS

Fiscal School Year	Total Expenditure	Federal Share	Percentage of Federal Share
1970	$1,550,576.36	$85,112.50	5
1969	$1,211,063.65	$77,838.67	6
1968	$1,124,825.85	$69,005.52	6

An analysis of the data revealed that of $1,124,825.85 spent for audiovisual instructional materials during the 1968 fiscal school year, $69,005.52, or 6 per cent came from Federal sources. During the 1969 fiscal school year, the Federal contribution again amounted to 6 per cent of the total.

Although the total dollar amount of Federal aid increased during the 1970 fiscal school year, its percentage of the total expenditure

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decreased 1 per cent in comparison to the two previous fiscal school years. The average percentage contribution of Federal aid programs to the budgets for audiovisual instructional materials in the Commonwealth of Pennsylvania during the 1968-1970 fiscal school years was 6 per cent.

The amount of money received from Federal aid programs in relation to the total budgets for audiovisual instructional materials of innovative school districts is listed in Table IX.

TABLE IX

AMOUNT OF FEDERAL AID IN BUDGET EXPENDITURES FOR AUDIOVISUAL INSTRUCTIONAL MATERIALS OF INNOVATIVE SCHOOL DISTRICTS, 1968-1970 FISCAL SCHOOL YEARS

Fiscal School Year	Total Expenditure	Federal Share	Percentage of Federal Share
1970	$343,351.68	$23,846.73	7
1969	$271,887.14	$14,330.83	5
1968	$236,195.48	$17,397.84	7

Although the total dollar amounts received from Federal aid programs for audiovisual instructional materials fluctuated on a yearly basis for innovative school districts, the percentage in relation to the total expenditures remained under 8 per cent. A comparative analysis of the influence of Federal aid programs on the budgets for audiovisual

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instructional materials of innovative and non-innovative school districts revealed a similar trend. Money from Federal aid programs accounted for 6 per cent of the total budget expenditures of both innovative and non-innovative school districts during the 1968-1970 fiscal school years.

The role that Federal aid programs played in different class size school districts presented an interesting trend. An examination of the expenditures of Federal aid programs in the budgets of the different class size school districts presented in Table X revealed the trend.

The overall trend of the Second Class school districts during the 1968-1970 fiscal school years was a gradual decrease in the percentage of Federal money in their budgets for audiovisual instructional materials. They experienced a 2 per cent decrease.

The smaller Fourth Class school districts experienced a larger percentage decrease (5 per cent). On the other hand, school districts included in the Third Class Category experienced a 1 per cent increase in the amount of expenditures from Federal aid programs. The 1 per cent increase was the result of a progressive increase in the amount of Federal aid money directed to the budget for audiovisual instructional materials.

The larger school districts, those included in the Second and Third Class categories used Federal money to finance an average 8 per cent of their budgets during the 1968-1970 fiscal school years. The small Fourth Class school districts used Federal money to finance an average 9 per cent of their budgets for audiovisual instructional

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TABLE X

AMOUNT OF FEDERAL AID IN BUDGET EXPENDITURES FOR AUDIOVISUAL INSTRUCTIONAL MATERIALS OF SECOND, THIRD, AND FOURTH CLASS SCHOOL DISTRICTS, 1968-1970 FISCAL SCHOOL YEARS

Fiscal School Year	Second Class			Third Class			Fourth Class		
	Total Expenditure	Federal Share	Per Cent	Total Expenditure	Federal Share	Per Cent	Total Expenditure	Federal Share	Per Cent
1970	$387,665.26	$27,085.28	7	$642,325.04	$54,631.64	8	$54,153.06	$3,395.58	6
1969	$275,677.69	$20,170.15	7	$589,996.32	$48,369.67	7	$40,182.44	$3,814.23	9
1968	$266.226.68	$23,420.85	9	$486,983.69	$33,933.23	7	$58,217.83	$6,233.24	11

Note: The two school districts included in the First Class and First Class A categories (Philadelphia and Pittsburgh), did not use Federal aid program monies in their budgets for audiovisual instructional materials.

materials during the same three fiscal school years.

6. The Techniques Utilized by Public School Districts to Determine the Size of Their Budgets for Audiovisual Instructional Materials

A question on the questionnaire listed four budgetary techniques commonly used to determine the size of various program budgets. The respondent was asked to select the techniques or combination of techniques that best described the one currently used to determine the size of his district's budget for audiovisual instructional materials. A compilation of the techniques used and percentage of school districts that utilized each technique is presented in Table XI.

TABLE XI

BUDGETARY TECHNIQUES UTILIZED IN THE CONSTRUCTION OF BUDGETS FOR AUDIOVISUAL INSTRUCTIONAL MATERIALS

Technique	Number of School Districts	Percentage of Sample
Pre-established percentage of the instructional budget	2	2
Assigned Amount per pupil	24	19
Assigned Amount per teacher	0	0
Amount needed to maintain current program status	56	45
No pre-established method	40	32
Combinations of the above	3	2
Total	125	100

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Forty-five per cent of the sample that responded to this question (56 of 125) reported that their budgets for audiovisual instructional materials were constructed on the basis of current program status and the amount needed to maintain that status. Forty school districts, which represented 32 per cent of the sample, failed to use pre-established methods to determine the size of their budgets, while 24, or 19 per cent constructed their budgets on a per pupil expenditure basis. Of those twenty-four school districts, two or 2 per cent of the entire sample used the $3.60 per pupil expenditure figure recommended by the Division of School Libraries of the Pennsylvania Department of Education. Two school districts, or 2 per cent of the sample used a pre-established percentage of the budget, while an additional three used a combination of methods. The three combinations used were assigned amounts per student and teacher, with a pre-established percentage of the budget, a pre-established percentage in terms of current program status, and an assigned amount per student in order to maintain current program status.

An analysis of the budgetary techniques utilized by school districts involved in innovative and change activities revealed that fifteen or 47 per cent based their budgets on the amount of money needed to maintain current program status, while seven or 22 per cent utilized per pupil expenditure figures. Twenty-eight per cent (9 of 32) reported that pre-established budgetary methods or techniques were not used to construct their budgets for audiovisual instructional materials. The one school district on the innovative-change list that reported the use of a combination

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method used a per pupil expenditure figure to maintain current program status. The techniques utilized by the five different class size school districts included in the sample are listed in Table XII.

TABLE XII

BUDGETARY TECHNIQUES UTILIZED BY THE FIVE SCHOOL DISTRICT CLASSIFICATION SIZES

Classification Size	Pre-established % of budget	Assigned Amount Per Pupil	Assigned Amount Per Teacher	Amount Needed to Maintain Program Status	No Pre-established Method	Combination of Techniques
First Class					1	
First Class A					1	
Second Class		5		9	2	
Third Class		18		41	31	3
Fourth Class		1		5	8	
Total		24		55	43	3

Notes: One school district included in the sample did not respond to an item on the questionnaire which dealt with budgetary techniques.

The two school districts included in the First Class and First Class A classification sizes (Philadelphia and Pittsburgh) reported that pre-established budgetary techniques were not used in the construction of their budgets for audiovisual instructional materials.

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The majority of school districts included in the Second Class category (56 per cent) based their budgets on the amount needed to maintain current program status, while two or 12 per cent failed to use pre-established methods. Five or 31 per cent of the Second Class school districts used an assigned amount per pupil.

Third Class school districts presented a similar situation, 19 per cent (18 of 93) used an assigned amount per pupil. Forty-one, that is 44 per cent based their expenditures on the maintenance of current program status, while 14 per cent (31 of 93) failed to employ pre-established methods. Three school districts utilized combinations of techniques. These included per pupil expenditures to maintain current program status, assigned amount per student and teacher in order to maintain program status, and a pre-established percentage of the budget to maintain program status. Fifty-seven per cent (8 of 14) of the Fourth Class school districts failed to employ pre-established budgetary techniques. Five of the fourteen Fourth Class school districts (36 per cent) based their budgets on the need to maintain current program status. One of the fourteen Fourth Class school districts used a per pupil expenditure figure.

B. Planning, Programming, Budgeting System (PPBS)

An analysis of the questionnaire data revealed that 6 per cent of the school districts included in the sample (8 of 126) had adopted and used the relatively new Planning, Programming Budgeting System (PPBS) to

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construct their budgets for audiovisual instructional materials.

A comparison of the median ADM expenditure figures of school districts that used pre-established budgetary techniques with those that had not used them is presented in Table XIII.

TABLE XIII

A COMPARISON OF MEDIAN ADM EXPENDITURE FIGURES OF PRE-ESTABLISHED AND NON-ESTABLISHED BUDGETARY TECHNIQUES

Fiscal School Year	Pre-established Techniques	Non-established Techniques
1970	$2.41	$1.82
1969	$1.81	$1.54
1968	$1.54	$1.31

The comparative analysis revealed that school districts with pre-established methods spent more per pupil during each of the three fiscal school years included in the study than school districts that had not used pre-established methods.

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IV. SUMMARY AND RECOMMENDATIONS

The primary purpose of this study was to identify the procedures and rationale employed in the development of budgets for audiovisual instructional materials in selected public school districts in the Commonwealth of Pennsylvania. This study must be viewed as a descriptive investigation even though attempts were made to ascertain the influence of both innovative activities and Federal aid on budgets for audiovisual instructional materials.

The rationale selected for the use of audiovisual instructional materials by the largest number of school districts included in the sample revealed an emphasis on the improvement of teacher effectiveness and efficiency. Sixty per cent of the school districts that selected it ranked it first in order of importance. Few school districts (30) emphasized an increase in both teacher and student productivity. Other school districts justified their budget expenditures for audiovisual instructional materials with the rationale that they made teaching and learning more interesting and supplied a concrete basis for conceptual thinking. The rationale selected by school districts included in the sample seemed to indicate that audiovisual instructional materials were regarded primarily as tools to be used by the teacher and not

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the student to ensure increased learning effectiveness and efficiency.

The fact that the greatest percentage of school districts (45 per cent) constructed their budgets for audiovisual instructional materials on the basis of current program status pointed to the danger of limited program growth and development. Thirty-two per cent of the school districts in the sample indicated that pre-established methods were not used in the construction and development of their budgets for audiovisual instructional materials. It was found that school districts with pre-established budgetary techniques spent more per pupil ADM than school districts without pre-established methods.

The findings of this study suggested that the typical school district budget for audiovisual instructional materials was a rigid, inflexible instrument, rather than a dynamic, fluid tool for program growth and development. The state-wide median ADM expenditure for audiovisual instructional materials for the 1970 fiscal school year was $2.21, whereas the nationally recommended expenditure figure was $43.32. The level of funding remained at an average of 5 per cent of the nationally recommended per pupil expenditure for the 1968-1970 fiscal school years.

It was found that Fourth Class school districts spent more per pupil for audiovisual instructional materials than the larger school districts included in the First, Second, and Third Class categories. This could be interpretated in one of three ways. First, it suggested that the smallest size school districts in the Commonwealth of Pennsylvania were growing at the fastest rate in terms of audiovisual program growth and development.

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The second possibility was that the larger school districts had audiovisual programs operating at optimum levels of service and growth and therefore required smaller per pupil expenditures. The third possible reason for the higher expenditure figures was that audiovisual instructional materials had a greater impact on the curriculum of smaller school districts.

Twenty-five per cent of the public school districts included in the sample (32 of 126) were engaged in programs classified as being innovative. The innovative and change activities reported ranged from programs in curriculum and school organization to ones which relied more heavily on modern technology. The greatest percentage of innovations were in the area of technology which included closed circuit television, educational television, micro-wave television distribution, computer-assisted instruction and remote-access information retrieval systems. Little difference was found in the median ADM expenditures for audiovisual instructional materials of school districts involved in innovative and change activities and those not involved in such activities. The average difference in expenditures for the 1968-1970 fiscal school years was ten cents. The most notable effect of innovative and change activities on budgets for audiovisual instructional materials was on the pattern of expenditures. Twenty-five of the thirty-two school districts involved in innovation increased their budgets for audiovisual instructional materials in preparation for innovative and change activities. The median increase amounted to 64 per cent.

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It was found that concurrence or agreement with professionals in the instructional media field in terms of the role and function of audio-visual instructional materials did not result in budget expenditures above the state-wide median ADM expenditures. Major reasons that seemed to account for low budget expenditures included the belief that the current supply of materials was adequate to meet the needs of the instructional program, that audiovisual instructional materials were not being used to accomplish valid, measurable educational objectives, that the content or subject matter of audiovisual instructional materials was inappropriate for educational use. Six per cent of the school districts on the low-expenditure list purchased, rented, and shared audiovisual instructional materials with other school districts. In addition, an analysis of the school districts on the low-expenditure list revealed that 6 per cent were located in counties with low audiovisual equipment inventories on the elementary school level and 31 per cent had secondary school patterns and student populations considered below average in terms of equipment availability.

Money from Federal aid programs had a limited influence on the budgets for audiovisual instructional materials of school districts included in the study. The average percentage for the 1968-1970 fiscal school years amounted to 6 per cent of the total budgets. Federal aid programs were not a major source of funds in the budgets for audiovisual instructional materials of school districts involved in innovative and change activities. The average Federal aid contribution for the 1968-

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1970 fiscal school years amounted to 6 per cent. The percentage contribution of Federal aid program monies was greatest in the audiovisual budgets of the smallest size school districts included in the sample. Even though Federal aid in the audiovisual budgets of Fourth Class school districts decreased from 11 per cent to 6 per cent over the 1968-1970 fiscal school years, its average contribution amounted to 9 per cent.

The data collected in this study suggested that budgets for audiovisual instructional materials would be most effective if the following recommendations were adopted.

1. Nationally recommended expenditure figures should be reviewed by public school districts and evaluated in terms of their educational program and the expenditures necessary for implementation, operation and future growth.

The expressed purpose of the national standards and expenditure figures recommended by the American Library Association and the National Education Association was to provide guidelines for media programs of good quality that reflected today's educational goals.[1] The recommended expenditure figure was based on quantitative equipment standards, resources and facilities considered essential in the educational process and did not take into consideration the many diverse educational programs and curricular patterns in use by public school districts throughout the nation. Therefore, nationally recommended expenditure figures should not be accepted as expressly valid for every school district.

---

[1]American Library Association and National Education Association, Standards for School Media Programs (Washington, D.C.: American Library Association and National Education Association, 1969), p. x.

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The role of the American Library Association and the National Education Association in relation to budgets for audiovisual instructional materials should be one of guidance and demonstration. The per pupil costs of educational programs which stress learning through independent study, inquiry, televised instruction, team teaching and individualization should be calculated and made available to school districts committed to change and improvement in their educational programs. These expenditure figures could then be used for purposes of comparison in order to measure local educational program efficiency and performance.

The nationally recommended expenditure figures represent goals and performance standards that public school districts should work toward in the future.

2. The budgetary categories of public school district budgets in the Commonwealth of Pennsylvania should be modified to include expenditures for audiovisual instructional materials within the overall curriculum and salary sections of the instructional budget.

An effective instructional media program is dependent upon a firm financial foundation. Because of the unrealistic way budgetary categories are defined in budgets of public school districts in the Commonwealth, expenditures for audiovisual instructional materials are listed in a separate category of the instructional budget. The separation of these expenditures might have accounted for the belief among the school districts in the study that audiovisual instructional materials were aids to be used by the teacher to ensure increased effectiveness and efficiency rather than materials to provide direct instruction.

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The expenses of audiovisual instruction should come from the section of the budget devoted to curriculum and instructional salaries and not from an instructional supplies section. Audiovisual instructional materials are an integral component of the instructional curriculum and not consumable supplies.

3. School districts should develop and implement local educational program review techniques with emphasis on planned and effective utilization of audiovisual instructional materials.

The fact that most school districts included in this study constructed their budgets on the basis on current program status pointed to the need for a sophisticated approach to program evaluation. Future growth and development of educational programs is dependent upon an understanding of the instructional effectiveness of existing programs in relation to student achievement and performance. Emphasis on the measurement and evaluation of student performance is an effective approach to program evaluation.

Educational program review techniques should also include procedures designed to measure and evaluate the instructional effectiveness of audiovisual instructional materials in terms of content, appropriateness and motivational effectiveness. In addition, teacher utilization of audiovisual instructional materials should be measured on a qualitative and not a quantitative scale.

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4. A systems or program planning approach to the construction of budgets for audiovisual instructional materials should be developed and implemented by school districts in the Commonwealth under the leadership and direction of the Pennsylvania Department of Education.

The procedures and rationale employed in the development of budgets for audiovisual instructional materials by school districts included in this study pointed to the feasibility of a systems or program planning approach to budget construction. The recommendation for a systems approach is based on the fact that most school districts constructed their budgets for audiovisual instructional materials on the basis of program status and justified them in terms of increased teacher effectiveness and efficiency.

Although the expenditure figure recommended by the Pennsylvania Department of Education represented a more realistic figure in relation to the actual expenditures included in the sample, only 2 per cent of the sample school districts employed it in the construction of their budgets for audiovisual instructional materials. The fact that only 2 per cent of the sample school districts followed the recommendation of the Department of Education pointed to the need for more active and dynamic state leadership.

The Pennsylvania Department of Education should initiate the development and implementation of a program or systems approach to budget construction for public school districts with emphasis on curriculum analysis and instructional design. Within the budget program or system, emphasis should be placed on performance characteristics and related cost requirements.

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The present line item approach to budget construction is unsound in that it creates an artifical separation of instructional functions and expenditures. An integrated approach to budget planning and construction with equal emphasis on instruction and audiovisual instructional materials would make decision-making a systematic and intelligent process.

An understanding of the input requirements of audiovisual instructional materials in instructional systems in terms of cost and time requirements in relation to different levels of student achievement would provide educators with a valuable tool for use in budget planning and construction. Further research in the area of student achievement and media requirements would provide an understanding of the relationship between quantitative costs and qualitative standards.

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APPENDICES

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APPENDIX A

DEFINITION OF TERMS

(To be used in conjunction with the questionnaire)

AUDIOVISUAL INSTRUCTIONAL MATERIALS - Are teaching materials designed to transmit information through both the visual and auditory channels. In this study, teaching materials designed to transmit information through the visual and auditory channels independent of one another are also considered audiovisual instructional materials. They include films, filmstrips, transparencies, recordings, exhibits, charts and maps.

AVERAGE DAILY MEMBERSHIP (ADM) - The aggregate of the daily membership for the school year divided by the actual number of days school was in session. The school year in Pennsylvania is established by law at 180 days.

SCHOOL DISTRICT BUDGET - Is the instrument through which the people of the local school community determine the educational program and the amount of revenue they will provide in support of it. In the Commonwealth of Pennsylvania the school directors of each school district of the Second, Third, and Fourth Class are given the responsibility of constructing and proposing a budget of the amount of funds required by the district in its several departments for the following fiscal school year. In each school district of the First Class, the board of public education is given this responsibility.

BUDGET CODE 0224 - Is the subsection of the instructional category of the budget which contains expenditures for audiovisual materials and supplies used in the instructional program. The materials and supplies include films, filmstrips, recordings, exhibits, charts, maps and television and radio materials, including the rental of such materials from Regional Instructional Audiovisual Centers.

CURRICULUM - Is the program of intended learning devised by the school. It is that which goes on in the school that is more or less intentional.

INNOVATIVE AND CHANGE ACTIVITIES - Are deliberate, novel, specific changes, which are thought to be more efficacious in accomplishing the goals of a school system. They may be changes in either the curriculum, school organization, or teaching methods and technology.

EDUCATIONAL OBJECTIVE - A statement describing the behaviors that a learner should acquire in a particular learning experience.

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PLANNING, PROGRAMMING, BUDGETING SYSTEM (PPBS) - A management technique that requires money to be allocated not by line item, but by program. Each year, a certain amount of money is to be made available, and various programs are projected for one to five years in the future at certain levels of activity. The entire operation is considered in the planning, not just segments.

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QUESTIONNAIRE

Background Data. (Optional)

_____ _____
County School District

_____
Address

_____ _____
Name of person replying Position Title

SECTION 1 BACKGROUND FACTS

Please list your position title. _____

Please list your school district's classification according to size. (First Class, First Class A, Second Class, Third Class, Fourth Class).

District's classification size. _____

1. Please list the Average Daily Membership (ADM) of your school district during the 1969-70 school year.

1969-70 School Year ADM. _____

2. Please list the total amount of money spent for audiovisual instructional materials by your school district for the fiscal school year ending June 30, 1970. (This information can be found on page 5 of your school district's Annual Financial Report (PISA-16) for the 1969-70 School Year under budget code 0224).

Total amount of money spent. _____

3. Please list the total number of teachers employed in your school district during the 1969-70 school year.

Total number of teachers employed. _____

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4. Below is a list of secondary school organizational patterns commonly used in Pennsylvania. Please check the pattern or patterns that were employed in your school district during the 1969-1970 school year and provide the information that is requested for each pattern.

_____ Middle School.

_____ List the grade levels included.

_____ List the total student enrollment.

_____ Junior High School.

_____ List the grade levels included.

_____ List the total student enrollment.

_____ Senior High School.

_____ List the grade levels included.

_____ List the total student enrollment.

_____ High School.

_____ List the grade levels included.

_____ List the total student enrollment.

_____ Other. (Please explain). _____

_____

_____

_____

_____

_____

_____

_____

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SECTION 2 BUDGET POLICY, OPERATION AND RATIONALE

1. Below is a list of major budgetary techniques used to determine the amount of expenditures devoted to various instructional programs. Check the method that best describes the one currently used in your school district to determine the size of the budget for audiovisual instructional materials.

_____Pre-established percentage of the instructional budget.
_____Assigned amount per pupil.
_____Assigned amount per teacher.
_____Amount needed to maintain current program status.
_____No pre-established method.
_____Other, including combinations of above. (Please explain). _____

_____

_____

2. Does your school district use the Program Planning Budgeting System (PPBS) to construct its annual budget?

_____Yes
_____No

3. Which of the following would you select to justify your budget expenditures for audiovisual instructional materials? Choose 3 and rank them in order of preference. Use the numeral 1 for your first justification, the numeral 2 for your second justification, and the numeral 3 for your third justification.

_____They increase teacher effectiveness and efficiency.
_____They supply a concrete basis for conceptual thinking.
_____Research has demonstrated their effectiveness.
_____They provide a substitute for meaningless verbalism that leads to referent confusion.
_____They increase overall student and teacher productivity by performing routine teacher functions.
_____They are included in a budgetary category.
_____They make teaching and learning more interesting.
_____Federal aid programs provide financial support for their acquisition.
_____Other. (Please explain). _____

_____

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4. Where are the audiovisual instructional materials of your school district kept or housed during the school year when they are not in direct use by your teaching staff?

_____In a Center in each individual building.
_____In a District Center that serves the entire school district.
_____In a Center outside of the school district that serves several different school districts.
_____In individual classrooms under the control of selected teachers.
_____Other, including combinations of above. (Please explain). _____

_____

_____

5. Do you think the content or subject matter of audiovisual instructional materials is appropriate for educational use?

_____Yes
_____No

6. Is the current supply or stock of audiovisual instructional materials owned or rented by your school district adequate to meet the needs of your instructional program?

_____Yes
_____No

7. Which of the following best describes the role or function of audiovisual instructional materials in the curriculum of your school district. Choose 2 and rank them in order of importance. Use the numeral 1 for the most important role or function, and the numeral 2 for the next important role or function.

_____Audiovisual instructional materials used as supplementary materials by teachers.
_____Audiovisual instructional materials used to present information and conduct routine instructional activities.
_____Audiovisual instructional materials used to create interest and motivation.
_____Audiovisual instructional materials used to eliminate fatigue and insure student attention.
_____Audiovisual instructional materials employed as enrichment materials.

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_____Other. (Please explain). _____

_____

_____

8. Please check the policy listed below that best describes the one used by your school district in providing audiovisual instructional materials for educational use.

_____Purchase what is requested, needed and economically feasible.
_____Rent what is requested, needed and economically feasible.
_____Purchase and rent what is requested, needed and economically feasible.
_____Purchase, rent and share what is requested, needed and economically feasible with other school districts.
_____Other. (Please explain). _____

_____

_____

9. Do you think that audiovisual instructional materials are being used to accomplish valid, measurable educational objectives in your school district?

_____Yes
_____No

10. Does your school district have an adequate supply of film and filmstrip projectors, record players, tape recorders and screens to support the use of audiovisual instructional materials?

_____Yes
_____No

11. List any changes or programs of an innovative nature in the curriculum or school organization of your school district and the Date it was initiated. (Please be specific and explain what the change or innovation is and how extensive it has been introduced).

Date initiated. _____. Description. _____
_____
_____
_____

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APPENDIX B

List of Knowledgeable Scholars Contacted

Dr. David Crossman	University of Pittsburgh, Pittsburgh, Pa.
Dr. Richard Cox	University of Pittsburgh, Pittsburgh, Pa.
Mr. John Drugo	University of Pittsburgh, Pittsburgh, Pa.
Dr. Walter DeLacy	Pennsylvania State University University Park, Pa.
Dr. Leslie Kindred	Temple University, Philadelphia, Pa.
Dr. Norman Linck	University of Pittsburgh, Pittsburgh, Pa.
Dr. Robert Martin	Indiana Area School District, Indiana, Pa.
Dr. Paul Phillips	Morrisville School District, Morrisville, Pa.
Mr. John Reed	Bensalem School District, Cornwells Heights, Pa.
Dr. Kermit Stoner	Marple Newton School District, Newton Square, Pa.
Dr. George Wiley	Indiana University of Pennsylvania, Indiana, Pa.

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APPENDIX C

INTRODUCTORY LETTER

SCHOOL OF EDUCATION
UNIVERSITY OF PITTSBURGH
PITTSBURGH, PENNSYLVANIA 15213

The results of Mr. Gottardi's study will be of great value to our faculty and student body as we turn our efforts to improving the curriculum in the Department of Educational Communications. Frankly, too little data exist at this time regarding budgetary activities for audiovisual materials in the schools. We need up-to-date information if our program is to serve well those current students in our program who will become educational leaders in the future.

The Department of Educational Communications will greatly appreciate any assistance you can give us with Mr. Gottardi's study.

Sincerely,

Norman Linck

Norman Linck
Assistant Chairman

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INDIANA AREA SCHOOL DISTRICT

501 East Pike, Indiana, Pa. 15701

INDIANA AREA SENIOR HIGH
INDIANA AREA JUNIOR HIGH
BENJAMIN FRANKLIN
HORACE MANN
EISENHOWER
EAST PIKE

ROBERT P. MARTIN, ED. D.,
District Superintendent

SUBJECT: **A Study of Procedures and Rationale Employed in the Development of Budgets for Audiovisual Instructional Materials in Selected Public School Districts of Pennsylvania.**

Dear Chief School Administrator:

I would appreciate your cooperation in completing the questionnaire contained in this envelope. This questionnaire is addressed to a random sample of public school districts in the State of Pennsylvania as part of a study designed to obtain a general picture of the procedures and rationale employed in the development of budgets for audiovisual instructional materials.

Your cooperation is necessary in order to obtain the accurate information necessary for this state-wide study. If you wish, you may include your name and the results of the study will be mailed to you prior to publication.

You will notice that the questionnaire is divided into two sections. The first section asks for factual data concerning your school district and its operating budget. If some information cannot be given without major effort, please give your best estimate of the figure concerned. The second section contains questions that require thoughtful consideration.

A list of definitions for certain terms used in the questionnaire has been included for your use. A self-addressed envelope has been included for return of the questionnaire.

Please make every effort to return the completed questionniare by January 8, 1971. Your return of the questionniare by this date will greatly expediate this study. If you should have any questions or comments regarding this study, please do not hesitate to contact me.

Thank you for your time and cooperation.

Sincerely yours,

Leslie Gottardi

Mr. Leslie Gottardi

Phone: 412-463-8713

CHRISTMAS TREE CAPITAL OF THE WORLD

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APPENDIX E

SCHOOL DISTRICTS INCLUDED IN THE STUDY

Abington School District
Abington, Pennsylvania 19001

Abington Heights School District
Clarks Summit, Pennsylvania 18411

Allegheny-Clarion Valley School District
Foxburg, Pennsylvania 16036

Ambridge Area School District
Ambridge, Pennsylvania 15003

Antietam School District
Pennside, Reading, Pennsylvania 19606

Apollo-Ridge School District
Apollo, Pennsylvania 15613

Ashley Sugar Notch Joint School District
Ashley, Pennsylvania 18706

Avonworth School District
Pittsburgh, Pennsylvania 15202

Baldwin-Whitehall Schools
Pittsburgh, Pennsylvania 15236

Beaver Area School District
Beaver, Pennsylvania 15009

Beaver Falls Area School District
Beaver Falls, Pennsylvania 15010

Bellwood Antis School District
Bellwood, Pennsylvania 16617

Berlin-Brothersvalley School District
Berlin, Pennsylvania 15530

Berwick Area School District
Berwick, Pennsylvania 18603

Bethlehem Center School District
Fredericktown, Pennsylvania 15333

Big Spring School District
Newville, Pennsylvania 17241

Bristol Boro School District
Bristol, Pennsylvania 19007

Brownsville Area School District
Republic, Pennsylvania 15475

Butler Area School District
Butler, Pennsylvania 16001

Canton Area School District
Canton, Pennsylvania 17724

Cambria Heights School District
Patton, Pennsylvania 16668

Catasauqua School District
Catasququa, Pennsylvania 18032

Central Dauphin School District
Harrisburg, Pennsylvania 17109

Central York School District
York, Pennsylvania 17404

Charleroi Area School District
Charleroi, Pennsylvania 15022

Chartiers-Houston School District
Houston, Pennsylvania 15342

Chartiers Valley School District
Pittsburgh, Pennsylvania 15220

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Chestnut Ridge School District
Fishertown, Pennsylvania 15539

Clarion Area School District
Clarion, Pennsylvania 16214

Clearfield Area School District
Clearfield, Pennsylvania 16830

Colonial School District
Plymouth Meeting, Pa. 19462

Commodore Perry School District
Hadley, Pennsylvania 16130

Columbia Boro School District
Columbia, Pennsylvania 17512

Conemaugh Valley School District
Johnstown, Pennsylvania 15902

Dallas School District
Dallas, Pennsylvania 18612

Dallastown Area School District
Dallastown, Pennsylvania 17313

Derry Area School District
Derry, Pennsylvania 15627

Duquesne City School District
Duquesne, Pennsylvania 15110

East Allegheny School District
North Versailles, Pennsylvania 15137

Eastern Lancaster County School District
New Holland, Pennsylvania 17557

Elizabeth Forward School District
Elizabeth, Pennsylvania 15037

Elk Lake School District
Dimock, Pennsylvania 18816

Frazier School District
Perryopolis, Pennsylvania 15473

Freeport Area School District
Freeport, Pennsylvania 16229

Galeton Area School District
Galeton, Pennsylvania 16922

Gateway School District
Monroeville, Pennsylvania 15146

Glendale School District
Irvona, Pennsylvania 16656

Governor Mifflin School District
Shillington, Pennsylvania 19607

Great Valley School District
Devault, Pennsylvania 19432

Greensburg Salem School District
Greensburg, Pennsylvania 15601

Hamburg Area School District
Hamburg, Pennsylvania 19526

Hanover Borough School District
Hanover, Pennsylvania 17331

Hanover Township School District
Wilkes-Barre, Pennsylvania 18702

Harbor Creek School District
Harbor Creek, Pennsylvania 16421

Hatboro Horsham School District
Horsham, Pennsylvania 19044

Highland School District
Tarentum, Pennsylvania 15084

Homestead Boro School District
Homestead, Pennsylvania 15120

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Huntingdon Area School District
Huntingdon, Pennsylvania 16652

Jenkintown School District
Jenkintown, Pennsylvania 19046

Juniata Valley School District
Alexandria, Pennsylvania 16611

Kiski Area School District
Vandergrift, Pennsylvania 15690

Lackawanna Trail School District
Factoryville, Pennsylvania 18419

Lawrence County Area Voc.-Tech.
New Castle, Pennsylvania 16101

Leechburg Area School District
Leechburg, Pennsylvania 15656

Littletown Joint School District
Littletown, Pennsylvania 17340

Loyalsock Township School District
Williamsport, Pennsylvania 17701

McGuffey School District
Claysville, Pennsylvania 15323

Manheim Central School District
Manheim, Pennsylvania 17545

Mechanicsburg Area School District
Mechanicsburg, Pennsylvania 17055

Methacton School District
Fairview Village, Penna. 19403

Mifflinburg Area School District
Mifflinburg, Pennsylvania 17844

Millersburg Area School District
Millersburg, Pennsylvania 17061

Monessen City School District
Monessen, Pennsylvania 15062

Montgomery Area School District
Montgomery, Pennsylvania 17752

Moshannon Valley School District
Houtzdale, Pennsylvania 16651

Mt. Carmel Area School District
Mt. Carmel, Pennsylvania 17851

Mt. Pleasant Area School District
Mt. Pleasant, Pennsylvania 15666

Mt. Union Area School District
Mt. Union, Pennsylvania 17066

New Castle Area School District
New Castle, Pennsylvania 16101

New Kensington-Arnold School District
New Kensington, Penna. 15068

Norristown Area School District
Norristown, Pennsylvania 19401

North Allegheny School District
Pittsburgh, Pennsylvania 15237

North Braddock Boro School District
Braddock, Pennsylvania 15104

North Clarion County School District
Leeper, Pennsylvania 16233

North Star Schools
Boswell, Pennsylvania 15531

Northern Potter School District
Ulysses, Pennsylvania 16948

Northern York County School District
Dillsburg, Pennsylvania 17019

Norwin School District
Irwin, Pennsylvania 15647

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Oxford Area School District
Oxford, Pennsylvania 19363

Penn Trafford School District
Harrison City, Pennsylvania 15636

Pennsburg School District
Fallsington, Pennsylvania 19054

Philadelphia City School District
Philadelphia, Pennsylvania 19103

Pittsburgh School District
Pittsburgh, Pennsylvania 15213

Plains Township School District
Plains, Pennsylvania 18705

Plum Boro School District
Pittsburgh, Pennsylvania 15239

Punxsutawney Area School District
Punxsutawney, Pennsylvania 15767

Quakertown Community School District
Quakertown, Pennsylvania 18951

Reynolds School District
Greenville, Pennsylvania 16125

Ridley School District
Folsom, Pennsylvania 19033

Ringgold School District
Monongahela, Pennsylvania 15063

Owen J. Roberts District
Pottstown, Pennsylvania 19464

Saegertown Area Joint School District
Saegertown, Pennsylvania 16433

Schuykill Haven Area Joint School District
Schuykill Haven, Penna. 17972

Sharon Hill Boro School District
Sharon Hill, Pennsylvania 19079

Smethport Area School District
Smethport, Pennsylvania 16749

Solanco School District
Quarryville, Pennsylvania 17566

Souderton Area School District
Souderton, Pennsylvania 18964

South Side Area School District
Hookstown, Pennsylvania 15050

South Western School District
Hanover, Pennsylvania 17331

Southern Fulton School District
Warfordsburg, Pennsylvania 17267

Spring Cove School District
Martinsburg, Pennsylvania 16662

Sto-Rox School District
Pittsburgh, Pennsylvania 15236

Townsville Consolidated Joint School District
Townsville, Pennsylvania 16360

Turkeyfoot Valley Area School District
Confluence, Pennsylvania 15424

Union-Chadds Ford School District
Unionville, Pennsylvania 19375

Upper Perkiomen School District
Pennsburg, Pennsylvania 18073

Upper St. Clair Township School District
Upper St. Clair, Pennsylvania 15241

Valley View School District
Archbald, Pennsylvania 18403

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Wallenpaupack Area Joint School
District
Hawley, Pennsylvania 18428

West Greene School District
Rogersville, Pennsylvania 15359

West Jefferson Hills School District
Pittsburgh, Pennsylvania 15236

West York Area School District
York, Pennsylvania 17404

Whitehall Coplay School District
Whitehall, Pennsylvania 18052

Wilson Boro Area Joint School District
Easton, Pennsylvania 18042

Wyomissing Area School District
Wyomissing, Pennsylvania 19610

York Suburban School District
York, Pennsylvania 17403

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APPENDIX F

A COMPARISON OF INNOVATIVE ACTIVITIES ON THE NATIONAL AND STATE LEVELS

Innovations on the National Level[a]	Innovations on the State Level	Number of School Districts Incl.
Curriculum		
PSSC Physics	Science A Process Approach	3
Chem Study Chemistry	Instructional Resources Centers	1
CBA Chemistry	With Print and Non-Print	
SMSG Math	Teaching Materials	
UICSM Math	Individually Prescribed	5
ESCP Physcial Science	Instruction (IPI)	
SSP Physical Science		
Humanities Course		
Technology		
Television Instruction	Closed Circuit Television	9
Programmed Instruction	Educational Television	3
Teaching Machine	Computer Assisted Instruction	3
Language Laboratory	Micro-wave Television	1
EDP Equipment	Distribution	
Telephone Amplification	Remote Access Information	1
Simulation or Gaming	Retrieval System	
Organization		
Flexible Scheduling	Team Teaching	5
Team Teaching	Modular Scheduling	3
College Credit Courses	Differential Staffing	1
Nongraded Program	Nongraded School	3
Aides-Paraprofessionals		
Honor Study Halls		
Work-Study Program		
School-Within-School		
Cultural Enrichment		
Student Exchange		
Optional Attendance		
Extended School Year		
	Total[b]	38

[a]The innovations listed under the national level were taken from: Gordon Cawelti, "Innovative Practices in High Schools: Who Does What--And Why--And How," Nation's Schools, April, 1967, pp. 61-66.

[b]Several of the thirty-two school districts included on the innovative-change list employed more than one innovation.

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APPENDIX G

SCHOOL DISTRICTS INVOLVED IN INNOVATIVE AND CHANGE ACTIVITIES

Abington School District
Abington, Pennsylvania 19001

Avonworth School District
Pittsburgh, Pennsylvania 15202

Baldwin-Whitehall Schools
Pittsburgh, Pennsylvania 15236

Beaver Area School District
Beaver, Pennsylvania 15236

Bellwood Antis School District
Bellwood, Pennsylvania 16617

Big Spring School District
Newville, Pennsylvania 17241

Bristol Boro School District
Bristol, Pennsylvania 19007

Brownsville Area School District
Republic, Pennsylvania 15475

Charleroi Area School District
Charleroi, Pennsylvania 15022

Chartiers Valley School District
Pittsburgh, Pennsylvania 15220

Chestnut Ridge School District
Fishertown, Pennsylvania 15539

Colonial School District
Plymouth Meeting, Pa. 19462

Dallas School District
Dallas, Pennsylvania 18612

East Allegheny School District
North Versailles, Pa. 15137

Greensburg Salem School District
Greensburg, Pennsylvania 15601

Hanover Borough School District
Hanover, Pennsylvania 17331

Hatboro Horsham School District
Horsham, Pennsylvania 19044

Juaniata Valley School District
Alexandria, Pennsylvania 16611

Loyalsock Township School District
Williamsport, Pennsylvania 17701

McGuffey School District
Claysville, Pennsylvania 15323

Methacton School District
Fairview Village, Pennsylvania 19403

Mount Pleasant Area School District
Mt. Pleasant, Pennsylvania 15666

New Castle Area School District
New Castle, Pennsylvania 16101

New Kensington-Arnold School District
New Kensington, Pennsylvania 15068

North Allegheny School District
Pittsburgh, Pennsylvania 15237

Owen J. Roberts School District
Pottstown, Pennsylvania 19464

Schuykill Haven Area Joint School District
Schuykill Haven, Penna. 17972

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Souderton Area School District
Souderton, Pennsylvania 18964

Townsville Consolidated Joint School
District
Townsville, Pennsylvania 16360

Upper St. Clair Township School
District
Upper St. Clair, Pittsburgh
Pennsylvania 15241

Wilson Boro Area Joint School District
Easton, Pennsylvania 18042

Wyomissing Area School District
Wyomissing, Pennsylvania 19610

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APPENDIX H

PERCENTAGE INCREASES AND DECREASES IN ADM EXPENDITURE PATTERNS FOR AUDIOVISUAL INSTRUCTIONAL MATERIALS OF INNOVATIVE SCHOOL DISTRICTS

Percentage Increases	Percentage Decreases
1,12,13,30,32,38,40,43,45,55 61,64,64,65,75,76,88,97,101,114, 144,303,1321,1360,1463.	8,23,26,60,63.

Notes:

Two innovative school districts maintained their level of ADM expenditures and were not included in the table.

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APPENDIX I

RATIONALE SELECTED AND RANKED IN ORDER OF IMPORTANCE IN JUSTIFICATION OF EXPENDITURES FOR AUDIOVISUAL INSTRUCTIONAL MATERIALS BY FIRST CLASS AND FIRST CLASS A SCHOOL DISTRICTS

FIRST CLASS (PHILADELPHIA)

Rationale Ranked In Order of Importance:

1. They increase overall student and teacher productivity by performing routine teacher functions.
2. They increase teacher effectiveness and efficiency.
3. They supply a concrete basis for conceptual thinking.

FIRST CLASS A (PITTSBURGH)

Rationale Ranked In Order of Importance:

1. They make teaching and learning more interesting.
2. They increase teacher effectiveness and efficiency.
3. They supply a concrete basis for conceptual thinking.

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APPENDIX J

RATIONALE SELECTED AND RANKED IN ORDER OF IMPORTANCE IN JUSTIFICATION OF EXPENDITURES FOR AUDIOVISUAL INSTRUCTIONAL MATERIALS BY SCHOOL DISTRICTS INCLUDED IN INNOVATIVE AND CHANGE ACTIVITIES

Rationale	Ranked 1st No.	%	Ranked 2nd No.	%	Ranked 3rd No.	%	Total N
1. They increase teacher effectiveness and efficiency.	15	58	7	27	4	15	26
2. They supply a concrete basis for conceptual thinking.	5	28	7	39	6	33	18
3. Research has demonstrated their effectiveness.	1	11	2	22	6	67	9
4. They provide a substitute for meaningless verbalism that leads to referent confusion.	1	20	2	40	2	40	5
5. They increase overall student and teacher productivity by performing routine teacher functions.	5	45	1	9	5	45	11
6. They are included in a budgetary category.	0		0		0		0
7. They make teaching and learning more interesting.	4	17	12	52	7	30	23
8. Federal aid programs provide financial support for their acquisition.	0		0		2	100	2
9. Other.							0

Notes: The percentage figures are based on the total number of school districts that selected each rationale and not on the total number contained in the sample. Percentages were rounded off to the nearest whole number.

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APPENDIX K

RATIONALE SELECTED AND RANKED IN ORDER OF IMPORTANCE IN JUSTIFICATION OF EXPENDITURES FOR AUDIOVISUAL INSTRUCTIONAL MATERIALS BY SECOND CLASS SCHOOL DISTRICTS

Rationale	Ranked 1st No.	%	Ranked 2nd No.	%	Ranked 3rd No.	%	Total N
1. They increase teacher effectiveness and efficiency.	9	69	1	8	3	23	13
2. They supply a concrete basis for conceptual thinking.	5	45	5	45	1	10	11
3. Research has demonstrated their effectiveness.	0		1	33	2	67	3
4. They provide a substitute for meaningless verbalism that leads to referent confusion.	0		1	33	2	67	3
5. They increase overall student and teacher productivity by performing routine teacher functions.	1	17	1	17	4	66	6
6. They are included in a budgetary category.	0		0		0		0
7. They make teaching and learning more interesting.	1	8	7	58	4	33	12
8. Federal aid programs provide financial support for their acquisition.	0		0		0		0
9. Other.	0		0		0		0

Notes: The percentage figures are based on the total number of school districts that selected each rationale and not on the total number contained in the sample. Percentages were rounded off to the nearest whole number.

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APPENDIX L

RATIONALE SELECTED AND RANKED IN ORDER OF IMPORTANCE IN JUSTIFICATION OF EXPENDITURES FOR AUDIOVISUAL INSTRUCTIONAL MATERIALS BY THIRD CLASS SCHOOL DISTRICTS

Rationale	Ranked 1st No.	%	Ranked 2nd No.	%	Ranked 3rd No.	%	Total N
1. They increase teacher effectiveness and efficiency.	52	60	27	31	7	8	86
2. They supply a concrete basis for conceptual thinking.	8	18	15	34	21	48	44
3. Research has demonstrated their effectiveness.	6	23	7	27	13	50	26
4. They provide a substitute for meaningless verbalism that leads to referent confusion.	2	10	9	47	8	42	19
5. They increase overall student and teacher productivity by performing routine teacher functions.	7	33	3	14	11	52	21
6. They are included in a budgetary category.	0		1	50	1	50	2
7. They make teaching and learning more interesting.	18	25	28	40	24	34	70
8. Federal aid programs provide financial support for their acquisition.	1	11	1	11	7	78	9
9. Other.	0		0		0		0

Notes: The percentage figures are based on the total number of school districts that selected each rationale and not on the total number contained in the sample. Percentages were rounded off to the nearest whole number.

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APPENDIX M

RATIONALE SELECTED AND RANKED IN ORDER OF IMPORTANCE IN JUSTIFICATION OF EXPENDITURES FOR AUDIOVISUAL INSTRUCTIONAL MATERIALS BY FOURTH CLASS SCHOOL DISTRICTS

Rationale	Ranked 1st No.	%	Ranked 2nd No.	%	Ranked 3rd No.	%	Total N
1. They increase teacher effectiveness and efficiency.	5	50	3	30	2	20	10
2. They supply a concrete basis for conceptual thinking.	1	16	4	67	1	16	6
3. Research has demonstrated their effectiveness.	1	33	1	33	1	33	3
4. They provide a substitute for meaningless verbalism that leads to referent confusion.	1	50	0		1	50	2
5. They increase overall student and teacher productivity by performing routine teacher functions.	0		0		2		2
6. They are included in a budgetary category.	0		0		0		0
7. They make teaching and learning more interesting.	4	31	4	31	5	38	13
8. Federal aid programs provide financial support for their acquisition.	0		2	50	2	50	4
9. Other.	0		0		0		0

Notes: The percentage figures are based on the total number of school districts that selected each rationale and not on the total number contained in the sample. Percentages were rounded off to the nearest whole number.

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APPENDIX N

STUDENT/MACHINE RATIOS OF AUDIOVISUAL EQUIPMENT AVAILABLE IN ELEMENTARY SCHOOL SYSTEMS, BY COUNTY, 1967-68

	Motion Picture	Filmstrip Slide	Overhead	Opaque	Tape Recorders	Record Players
Adams	254	179	145	469	217	41
Allegheny	208	149	202	544	253	71
Armstrong	238	167	197	731	330	69
Beaver	236	155	210	584	232	78
Bedford	134	46	77	319	147	67
Berks	176	123	129	610	179	32
Blair	262	228	297	829	384	43
Bradford	192	135	274	384	234	50
Bucks	239	165	222	812	245	41
Butler	234	143	196	509	220	57
Cambria	212	119	172	560	252	63
Cameron	266	354	177	1064	354	66
Carbon	161	89	312	1251	217	45
Centre	190	127	122	293	146	38
Chester	233	151	153	725	248	47
Clarion	177	91	111	388	236	48
Clearfield	190	132	145	561	214	83
Clinton	171	88	177	660	140	41
Columbia	185	206	247	614	195	60
Crawford	170	103	127	406	111	53
Cumberland	243	142	130	580	196	38
Dauphin	273	167	167	668	276	49
Delaware	122	116	114	555	131	39
Elk	226	241	226	453	302	55
Erie	212	132	209	1314	215	51
Fayette	160	147	148	1193	214	54
Forest	223	95	223	335	83	35
Franklin	191	168	286	548	257	66
Fulton	135	124	135	248	165	51
Greene	126	98	166	213	130	62

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	Motion Picture	Filmstrip Slide	Overhead	Opaque	Tape Recorders	Record Players
Huntingdon	155	94	98	365	196	41
Indiana	181	103	133	535	150	53
Jefferson	173	111	114	335	295	58
Juniata	209	209	67	769	144	48
Lackawanna	141	115	109	480	210	59
Lancaster	246	151	231	980	240	49
Lawrence	173	93	149	436	191	95
Lebanon	187	184	173	810	79	69
Lehigh	209	192	336	589	223	34
Luzerne	197	139	212	419	237	80
Lycoming	200	169	154	710	226	35
McKean	156	90	64	342	156	40
Mercer	224	155	135	490	221	55
Mifflin	192	143	254	559	233	27
Monroe	206	116	232	429	328	34
Montgomery	217	161	171	566	209	37
Montour	254	254	254	1018	254	50
Northampton	153	124	226	594	241	41
Northumberland	145	103	122	366	163	40
Perry	122	141	99	619	194	37
Philadelphia	270	191	110	279	282	69
Pike	173	144	433	288	216	78
Potter	146	97	70	334	167	49
Schuylkill	205	150	208	984	284	65
Snyder	210	162	275	1193	255	43
Somerset	123	83	103	535	121	43
Sullivan	126	84	253	380	253	25
Susquehanna	212	111	106	488	195	58
Tioga	258	152	212	540	350	54
Union	245	108	150	900	300	35
Venango	180	135	117	585	184	76
Warren	162	203	702	332	217	83
Washington	183	114	190	366	175	65
Wayne	150	87	251	471	157	54
Westmoreland	216	138	188	543	242	60

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	Motion Picture	Filmstrip Slide	Overhead	Opaque	Tape Recorders	Record Players
Wyoming	252	168	280	841	252	41
York	217	145	176	634	244	40

Source: Bureau of Statistics, Statistical Report of the Secretary of Education for the School Year Ending June 30, 1968 (Harrisburg: Pennsylvania Department of Education, 1969), p. 35.

Notes: The motion picture category includes only 16mm projectors and does not include 8mm or super 8mm projectors.

The student/machine ratios represent the number of students per each piece of equipment within the county.

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