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# A Plan to improve the audio-visual program in the elementary schools of Missoula Montana

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# A PLAN TO IMPROVE THE AUDIO-VISUAL PROGRAM IN THE ELEMENTARY SCHOOLS OF MISSOULA, MONTANA

by

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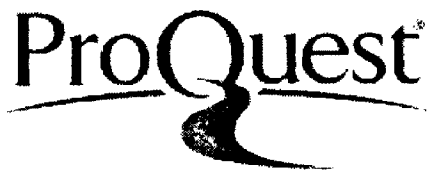

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H W Knapp
Chairman of the Board of Examiners

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# CHAPTER I

## INTRODUCTION

### The Problem

One factor which has served to retard the normal development of the use of audio-visual materials has been the narrow interpretation by some of the most active workers. Some have thought of the audio-visual program as being the use of motion pictures for instructional purposes, others have thought of the glass slides or filmstrip, and still others have thought only of the excursion or museum materials. There are those who have argued that the sound motion picture is the top of perfection for classroom instruction. A few have contended that the slide offered more educational advantages than any other type of projected pictures. Some have not given the filmstrip fair consideration, while many have found it to be exceptionally valuable in many classroom teaching situations.

Writers in educational journals advise teachers to use new educational resources such as films, radio, field trips, models, and now television.

> Research shows conclusively that audio-visual materials are helpful to the teacher. These materials are interesting to students, make verbal concepts meaningful, are retained and recalled, stimulate student activity, and provide experiences that can be brought into the classroom in no other way. Some teachers do not now use these

materials skillfully because they have not been prepared to do so.[1]

Audio-visual education refers to the carefully planned and integrated use of a wide range of teaching materials from the kindergarten through the college. Audio-visual education includes the use of field trips or excursions, sound and silent motion pictures, objects, models, specimens, slides, filmstrips, stereographs, study prints, posters, radio programs, recordings, maps, charts, graphs, and synthetic training devices. It also includes the use of the blackboard, the bulletin board, the hall display case, and similar facilities available in most schools. Instruction is improved by the use of these materials and by life experiences which supplement and clarify the printed word.

Modern educational objectives require improvement in instructional materials and practices, and the dynamic nature of these materials themselves, their content, organization, and the manner of presentation, assure that, when wisely used, they will clarify concepts and make learning more meaningful and efficient. Because they can realistically portray things and events in their various relationships, audio-visual materials can bring the world, past and present, vividly and concretely into the classroom, they are a means of insuring education against isolation from life. These materials also

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[1]William Allen, "Research Verifies The Value of Audio-Visual Materials," The National Education Association, (San Diego: San Diego State College, 1952), p. 49.

serve as mediums of modern communication to present current problems and issues. Through the use of audio-visual materials in the classroom for this purpose, learners can improve their study of these problems and their competency in solving them, thus increasing their experiences in citizenship and developing the understandings and attitudes necessary for democratic living.

Audio-visual education, then, is a modern way of teaching and is in harmony with modern educational thinking. Audio-visual education is not an end in itself; audio-visual materials are tools. In themselves, they cannot adequately meet modern educational objectives. How they are selected and used by the teacher will in a large measure determine the extent to which instruction will be improved. The teacher is and must always be the most essential element in the education of children and youth. The utilization of audio-visual education materials calls for more, rather than less, preparation and participation by the teacher. To realize the values inherent in the tools of audio-visual instruction, the teacher must have certain knowledges, understandings, skills, and abilities.

To have the right material at the right time is the task of the supervisor of the audio-visual department. A common reason given for not using a film is that they are not available when they are needed. How can this problem be met? Accessibility is related to film costs. The lower the cost of an individual print, the more easily we can afford

to own it, and the more prints that are sold, the more the price can be reduced. Accessibility also depends upon the rigidity or flexibility of the school curriculum. If all sixth grade children in the city system are studying Alaska at exactly the same time, then a huge supply of films on Alaska is needed if all are to see them within this limited period.

On the other hand, a school system may have excellent audio-visual materials and still they may not be used. The teacher may not be able to find the teaching materials when she needs them. Certainly the difficulty of finding teaching materials will be increased if these materials are not properly classified.

There is a problem in the use of a wide variety of teaching materials which needs careful study. A teacher who has thirty or forty pupils in the classroom should not have the additional burden of selecting, getting, caring for, using, evaluating dozens of different types of audio-visual materials. However, the day-by-day teaching duties are so extensive that many of these decisions will have to be made beforehand by planning groups in which every teacher will participate in one way or another. There must be resource units or courses of study to which the teacher can turn to and get a quick answer as to possible materials.

Finally, they must solve the problems of mechanical upkeep. When phonographs, projectors, recorders, playbacks,

public address equipment are bought, plans must be made to keep them in repair. The supervisor must plan not only for the first cost of the equipment but also for its upkeep. He must ask about the repair and service facilities of the company from whom he buys electrical and other audio-visual equipment. The school is changing. It is shifting from an overemphasis on memorization, on "knowing about," to thoughtful experiencing.

## The Proposed Plan to Improve The Program

Recent surveys of audio-visual materials in use among schools have produced interesting information. The common practice among schools and school systems to centralize the audio-visual service to make some person or committee responsible for the selecting, purchasing, and planning of the use of appropriate materials and equipment. These individuals and groups are asked to coordinate the requirements of various teachers, departments and schools, and are often asked to include in their plans some provision for the training of teachers in the use and care of the audio-visual materials. They have realized that audio-visual training plans, to be effective, must take into consideration the courses of study and the plans and needs of the individual teachers. Using good materials without such consideration will result in a waste of time, money, and teaching effort.

The development of centralized administration of the audio-visual program has established a good foundation for guiding the use of all types of teaching materials. The Missoula schools have purchased equipment and materials to meet the requirements of a planned instructional program. The principal advantage is that the coordinated activities avoid waste of time, money, and teaching effort.

The general problem of overcrowded educational facilities provides another strong argument for a well-organized audio-visual program. It has been demonstrated that large groups of pupils can be taught more effectively with carefully selected audio-visual materials than by using the traditional teaching methods. Teachers who must handle these large groups will find their work easier and the results more effective if these modern teaching devices are used.

Except in the last few years, the libraries in general have made little or no provision for showing projected pictures. Most of the buildings were designed in a period when motion pictures, radio, filmstrips were considered forms of entertainment rather than a media of education. The requirements needed in providing these audio-visual devices are simple in themselves, there are only two basic ones, power and darkness, but they are rather difficult to achieve. Room for improvement of course there will be, but further persistent efforts and planning will make any but the most limited space suitable to projection and listening uses. Not extensive

equipment but teacher ingenuity and resourcefulness are more often the needs in schools unable to avail themselves of adequate motion picture projectors and films.

An advisory committee of teachers should be selected from each school in the system. This committee should meet frequently with the supervisor and become thoroughly familiar with the various problems relating to the effective use of the audio-visual materials. Their advice should be sought in connection with the purchase of all types of audio-visual teaching materials and equipment. The members of this committee should be encouraged to attend some summer school or extension course in audio-visual aids. Sources of teaching materials and particularly 16mm motion picture films should be carefully canvassed by the supervisor and the advisory committee. If possible, a substantial number of films, slides, and recordings should be previewed by this advisory committee during the first year. The faculty may be canvassed for suggestions on some basic materials which each teacher feels can be effectively used in the subject matter field.

A group of outstanding pupils in each school should be trained to operate all equipment to be used in that building. Over a period of five years the supervisor has found that seventh and eighth grade students can be used for operation of the 16mm motion projectors, tape recordings, filmstrip projectors and the lower grade pupils the filmstrip projectors and phonographs.

Necessary requisition forms for the use of each teacher, master schedule or charts will be sent out. Other blanks to be sent to the teacher may include the notification to the teacher of availability of materials requested and a brief evaluation card or sheet to be filed by the teacher after using each film or set of materials. Notice of coming motion pictures have been sent out to the teacher several weeks in advance of showing. The preparation of teacher's guides to accompany audio-visual aids in filmstrips has been in use for several years, and will expand the guide as new films arrive. The guides are simple and specific.

The responsibilities of the school audio-visual supervisor should include:

1. Informing teachers about available materials.
2. Assisting teachers in the selection of materials.
3. Working with teachers in improving use of audio-visual aids.
4. Securing evaluation on materials used.
5. Ordering audio-visual materials from the central department.
6. Scheduling aids and equipment within the twelve grade schools.
7. Training teachers and pupils in the operation of equipment.
8. Supervising the collection of filmstrips, recordings, slides, flat pictures, motion pictures, organizing and

directing with aid of principal various field trips, taking of home movies or school activities, aid in P.T.A. programs, central library for civic organizations, aid in all-school functions as to equipment.

9. To have teaching materials available at the time and place requested by the teacher.

10. To make it easy for the teacher to select and order materials.

11. To convince the teacher by demonstration that good audio-visual teaching materials do improve every teaching situation.

12. To encourage every teacher to co-ordinate these materials with other materials available for her use.

The proposed plan will include a brief bulletin or newsletter issued every two weeks throughout the school year which will prove most effective in keeping teachers informed as to new developments in the field of audio-visual aids. Such a bulletin may be used as a device to encourage better use and more careful selection of teaching materials. It can also be used as a means of gathering suggestions for improving the service offered by the department. It will also provide the local community with information on some of the newer trends and improvements being made in the training of our youth.

"As a classroom tool the textbook serves three principal functions: to provide organization for the course, to

supply a basic content, and to furnish common materials for learning."[2]

The organization is necessary and welcome to most teachers. Using the text only as a framework, the teacher will expand portions or insert whole units in areas where he is particularly competent, where the local community can be utilized most effectively, where students express unusual interest, or where library materials are richest. Over a period of time, of course, it is to be hoped he will build up the library to meet his needs.

Unfortunately there are classes in which the textbook not only provides a core of content but constitutes almost the entire course. In these classes the principal activities consist of studying the textbook and reciting its contents.

The textbook values most commonly thought of are those related to its organization and basic content functions. It is also of great importance in the teaching of certain skills in reading and studying.

Properly understood, therefore, the textbook is used in conjunction with many other tools: the course of study, the motion picture, radio and other audio aids, globes, maps, wall charts, periodicals, reference books, supplementary reading books, notebooks, discussions, forums, panels, lectures and dramatizations.

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[2]H. William Cartwright, "How to Use a Textbook," National Council for the Social Studies, (Washington, D.C.: Boston University School of Education, 1950), pp. 3-4.

"We have not been testing in terms of performance, of the ability of the pupil to do. We have been asking him, not 'What can you do?' but 'What do you remember?'"[3]

Textbooks will increasingly show the influence of the trend toward audio-visual materials. Dale has said:

> This will mean a more intelligent use of maps, graphs, charts, diagrams, drawings, and photographs. The text will increasingly be corrected with recordings, films, and filmstrips. We shall probably see an increase in the kind of materials, the use of color photographs and drawings in pamphlet series.[4]

The proposed plan will bring each of the basic textbooks into a careful study by the supervisor and advisory committee. From this study we hope to bring more useful materials to the teacher and to increase the learning process of the pupils. Filmstrips, films, recordings, pictures would make the class more realistic and meaningful. The proposed plan would also include workshop training and in-service training which will help teachers to make more effective use of the teaching tools. Through the centralized teaching material center, the matter of keeping up to date with the ever-increasing number and variety of aids would increase the effectiveness of our teaching program.

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[3]Edgar Dale, "Audio-Visual Methods in Teaching," (New York: The Ohio State University, 1946), pp. 50-51.

[4]Ibid., p. 527.

# CHAPTER II

## THE VALUE AND USE OF AUDIO-VISUAL AIDS IN THE ELEMENTARY SCHOOLS OF MISSOULA, MONTANA

### The Present Educational Program

During the past few years, the Missoula Schools have seen an ever-increasing growth and interest in audio-visual aids. In 1947 the administrators of the system began to realize the wisdom of integrating all of their instructional aids into a materials or resource center. This is a logical development, as the curriculum considers all instructional aids as an important part of the teaching and learning process. By bringing all of these aids into one center, the teacher's task is made much easier, as he has only one place to look for the materials he needs. This trend towards materials centers is a healthy one and should be encouraged by all who are interested in seeing audio-visual aids used effectively in all phases of school instruction. Each material area will have to realize that by combining into one central department, the use of all aids will be strengthened. No one aid will receive greater or less emphasis than any other. The main function of the center will be to provide better and more efficient service to the teachers.

Help in selection and use of instructional materials is one of the important functions of the center. Teachers

need and appreciate help in locating the right aids. It should not be construed that the sole responsibility for selection and utilization of aids would rest only on the supervisor of the center. All persons connected with the instructional staff, administrative staff of the school system must put the right emphasis on the aids if they are to fulfill their place in the teaching and learning process. The setting of standards for purchase of instructional materials is more than a clerical detail. Selection of the aids to be purchased must be based on a sound philosophy and scientific evaluation.

When the teacher prepares the class for the film by asking questions to be answered, reviewing difficult words from the film, and using a study guide in anticipation of the film, pupils learn a great deal more from the film than when no such preparation is made. Almost as effective as class preparation is the showing of the film a second time, this technique utilizes the learning principles of practice and repetition. When the pupil can relate himself to the subject being presented and can participate during or after the presentation of the material, he will learn more. This fact has been demonstrated in research with films, filmstrips, and still pictures. It is, therefore, best to use audio-visual materials in an active way, not limit them to passive audience situations.

The local production of aids is frowned upon by many people. However, there are many types of aids which are not

available through commercial sources which could be produced by the audio-visual center. Documentary films can be made and sound applied to home movies of many local school activities. Another suggestion is to take 16mm movies of our physical education department, making of color slides of our community, and various historical parts of Montana.

## The Role of the Teacher

Recognition of the teacher as one of the most important determining factors in the entire audio-visual program is resulting in greater emphasis upon his participation in planning, policy making, curriculum revision, textbook planning, selection and evaluation of audio-visual materials and preparation of instructional guides. In order to prepare the school personnel for evaluation and selection of materials and equipment, a course in "Audio-Visual Aids" will be offered on the Montana State University campus during the spring and summer sessions of 1952. The aim is to familiarize teachers and students with all types of materials in order that they may be better qualified to make recommendations when the matter of purchasing materials is discussed in the local schools.

It is necessary, if one would keep intellectually alive and growing, to maintain an open mind toward new theories and methods, toward change and progress, and to be interested in making investigations and in the results of investigations

made by other persons. Although it is not advocated that the teacher turn the classroom into a laboratory to investigate all types of theories, some research on practical subjects is advocated. Not only will this frequently result in the discovery of a new method or technique, but it will help to keep the teacher intellectually alive. Co-operation of all teachers is indispensable if the progress of the science of education is to be accelerated.

Another opportunity for research work and for professional growth is presented through the doing of committee work. In the better organized and administered school systems much of the work of administration is being done by committees. It leads school personnel to make suggestions and make them feel that they are a vital part of the school. Audio-visual materials must be understood in their relationship to teaching as a whole and to the learning process as a whole. Unless the teacher grasps this relationship, she can scarcely expect to make intelligent or fruitful use of these techniques that offer her so much help in her daily tasks. Above all the teacher must recognize that audio-visual methods are one group of methods designed to improve teaching, one group of methods and an enormously promising group, but not the only group. If the teacher thoroughly understands and assimilates this principle, the teacher will not make the mistake of regarding visual and auditory techniques as an end in themselves.

## The Need for More In-Service Training

An in-service training program should be developed for the purpose of training every teacher how to utilize each type of audio-visual material she may select during the year. Suggestion can be made that such training program include a number of classroom teaching demonstrations. Following such demonstrations, the supervisor will give every possible assistance in aiding the teachers to follow the techniques similar to those presented by the demonstration or encourage them to set up procedures of their own which will prove just as effective.

Some teachers know very little about audio-visual materials. They may not even have seen films or listened to recordings in their own field of instruction. Some will not even have taken a single field trip during the entire time they were in a teacher-education institution. Sometimes, too, teachers worry that a piece of equipment will break and that they may appear somewhat clumsy and helpless before their pupils. It is at this point that we are often weakest in our audio-visual programs.

Dale has described the development of an in-service program as:

> Teachers should be taught how to operate most types of equipment, even though they do not regularly need to do so. Some schools which have the advantage of extension

courses or local college courses can organize in-service programs for teachers.[1]

Any teacher can learn to operate successfully and in a short time any of the audio-visual equipment used in schools today. Although the actual running of the equipment can be assigned to students, the teacher should have the ability and experience to take over when necessary.

## The Activity Program

The educational psychologist finds audio-visual materials to be valuable in that they enlist the activity and interest of students. Through the wise use of audio-visual aids children may be directed into activities which employ not only vision but the other senses as well. Children learn through their own experiences and responses which is another way of saying that they learn to do by doing. The activity program in modern education is characterized by the extensive use which is made of audio-visual aids. Instructional materials such as photographs, lantern slides, stereographs, exhibits, motion pictures and the like are effective in arousing the mental activity of children. In modern schools where pupil activity is stressed, one will find visual materials in abundance.

The value of visual materials in stimulating pupil activity is illustrated further by the class use of the slide

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[1]Edgar Dale, Audio-Visual Methods in Teaching, (New York, The Dryden Press, 1946), p. 476.

as a basis for the socialized lesson or the use of the stereograph for intensive individual study. In a group lesson, a slide is projected on the screen and held there while the teacher and the class discuss the picture. This gives all a common basis for study. The slide or filmstrip may be used with the group to preview the unit and to stimulate interest, or as assimilative material during the intensive study of the topic, or as a rapid fire group review at the end. Experience has shown that the use of a few slides is far better than the use of many, for a large number of slides tends to lull students into passive receptivity whereas the analysis by the class of a few pat pictures arouses a higher degree of pupil participation. The principle of self-activity is carried even further when pupils make their own slides and produce motion pictures and radio shows.

# CHAPTER III

## AUDIO-VISUAL EDUCATION

### "The How, What, and Why" of Audio-Visual Education

This filmstrip is produced by Maurice C. McCann, Racine, Wisconsin. "A visual aid is a teaching tool, which conveys information and stimulates thinking more effectively than the printed or spoken word. One picture is worth ten thousand words."[1] The five senses that aid in formation and stimulation of thought are: sight, smell, touch, taste, hearing. The combined senses of sound and sight are most important in learning situations. Textbooks plus correlated films equal an ideal teaching combination.

Suggested methods of handling films: booking, assembling the order, shipping, charge-out, receiving, inspection, charge-in, storage. The average life of a film based on number of showings: 100 - General Motors and Jam Handy; 150 - State of Ohio Film Exchange; 700 - University of Michigan; 750 - Detroit Public Schools. The advantages of owning films: eliminates cost of transportation, makes repeated showing easy, instruction is flexible, provides realistic life situation, careful selection saves money, economical as a tool

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[1]Maurice C. McCann, "The How, What and Why" of Audio-Visual Education, Racine, Wisconsin (a filmstrip).

of teaching, the right film at the right time, brings years of research and authenticity to class. Teaching films: augment the laboratory, visualize the abstract, bring understanding, make words have meaning, talk to the eye, motivate reading and study, bring world to the classroom, make good teaching better. Care of films: keep them repaired, use them carefully, put them away. Research on films indicates: gaining and holding interest, permanence of learning, developing habits and skills, influencing attitudes and behavior, instruction of large groups. Steps in using teaching films: teacher previews film, introductory work with class, class sees picture, review lesson taught in picture. Films and learning: seeing and hearing is remembering, educational horizons unlimited, vivid and lasting impressions gained, learning is interesting and enjoyable, retention is greater and lasts longer, teaching stimulates and satisfies. New projection operators being taught to splice by an experienced operator. Learning to operate an opaque projector, projecting a $3\frac{1}{4}$" x 4" slide on the over-head projector. In-service training objectives: knowledge of sources and types of equipment and materials, effective methods of using audio-visual materials, knowledge of equipment operation, better correlation of audio-visual aids in the curriculum. A well-organized audio-visual program will: centralize and catalogue materials, train teachers in use of equipment, service equipment and materials, establish preview committees,

cultivate curriculum workshops, help the teacher in the classroom.

## Philosophy of Audio-Visual Instruction

The function of Audio-Visual Education is to aid in transmitting, creating, interpreting, and evaluating human experience. One must recognize that there is no one type of learning material and experience that is best under all conditions.

McCann and Close define philosophy of Audio-Visual Instruction as:

"Audio-visual experience in education forms a connecting link and provides the quickest and most effective method of bridging the gap between the two extremes of actual personal experience and vicarious learning."[2]

"A well-planned audio-visual teacher training program should develop an attitude on the part of the teacher which not only recognizes the importance of such aids but which also induces him to properly correlate and integrate them with other phases of instruction."[3]

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[2]Maurice C. McCann, "Philosophy of Audio-Visual Instruction," Washington Jr. High School, Racine, Wisconsin.

[3]A. B. Close, "Philosophy of Audio-Visual Instruction," Washington Park High School, Racine, Wisconsin.

Tasker and Riesch define philosophy of Audio-Visual Instruction as:

"Films and materials must have been thoroughly previewed by teachers in order that pupils may be adequately motivated, conditioned and prepared specifically to learn the lesson intended. Each teacher should aspire to develop his proficiency in projector operation to a degree of confidence and independence which will insure efficient presentation of scheduled material with a minimum of red tape and delay."[4]

"Audio-visual materials afford a greater and more positive means of motivating and broadening the learning process at all grade levels."[5]

Accepting the concept of audio-visual aids, each teacher needs to organize such practices as will insure maximum benefits. Foremost among these is recognition of the importance of correlating audio-visual aids in the other instruction.

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[4]Robert Tasker, "Philosophy of Audio-Visual Instruction," McKinley Jr. High School, Racine, Wisconsin.

[5]Kenneth Riesch, "Philosophy of Audio-Visual Instruction," Mission House College, Plymouth, Wisconsin.

# CHAPTER IV

## AUDIO-VISUAL MATERIALS

### Audio-Visual Materials Available to Missoula Teachers

The supervisor offers the following outline of materials available to the teachers of the Missoula schools:

1. Types of visual materials available.
   - (a) Blackboard demonstrations.
   - (b) Classroom experiments.
   - (c) Field trips.
   - (d) Objects, specimens, models.
   - (e) Photographs and prints.
   - (f) Graphs, maps, globes, and tables.
   - (g) Plays and pageants.
   - (h) The school museum.
   - (i) The opaque projector.
   - (j) Filmstrip projector and 2" x 2" slides.
   - (k) Stereoscope and stereographs.
   - (l) Keystone projector and 3 1/4" x 4" slides.
   - (m) 16mm silent motion pictures.
   - (n) Screens.
2. Types of sound equipment and materials.
   - (a) The phonograph and records. 78RPM., 33 1/3 RPM.
   - (b) The radio program.

(c) Radio recordings, transcriptions.

(d) Recording equipment, disc, wire, tape.

(e) Public address system.

3. Types of audio-visual materials and equipment.

(a) The sound filmstrip.

(b) The sound motion picture.

## Adapting Types of Visual Materials and Equipment

(a) For some unknown reason, nearly everyone in the educational field has come to associate the term "visual aid" with something electrical--slides and movie projectors, opaque projectors. Sprenger states[1] that one of the very first real visual aids used in schools, long before the discovery of electricity, was the well known chalkboard or blackboard. The blackboard lends itself admirably to the treatment of specific individual instruction problems. It is one of the few visual aids adaptable to the demonstration of a progressive solution of a problem. It lends itself to the use of handwriting, lettering, drawing, charts, graphs, maps, all of which may be altered, changed or modified to suit the individual teaching requirements.

Dale in a study[2] on methods of using the blackboard

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[1]William R. Sprenger, "The Chalkboard--A Neglected Giant of Visual Education," Audio-Visual Guide, XVIII, (February, 1952), p. 7.

[2]Edgar Dale, Audio-Visual Methods in Teaching, (New York, The Dryden Press, 1946), pp. 295-296.

states that most teachers, taking the blackboard for granted, never stop to wonder if they use it effectively. Blackboard technique needs to be learned and practiced, nobody is born with it. Many helpful materials are available and you can practice as much as necessary.

(b) Classroom experiments conducted by the student or by the teacher, also offers many opportunities for the student and the teacher. They should be directly related to the classroom activities of the pupils at the time. They should be accurate and with purpose, well planned in advance, and carried out and executed with care. Any demonstration of materials in the classroom should be clearly seen by all in the room. One difference between an experiment and a demonstration is that the demonstration has been worked out beforehand, so that the demonstrator knows it will work. Real experimenting is slow, and generally takes more time than can be used in the classroom. Another difference between an experiment and a demonstration is that the demonstration is done for others to observe, while you do an experiment for yourself.

(c) The school journey or field trip, as it is often called, is a school exercise designed to provide visual experience relative to such activity as cannot be brought into the classroom.[3] Dent has said:

> It involves the taking of pupils to places where the subject matter of instruction, scenes, objects,

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[3]Ellsworth C. Dent, The Audio-Visual Handbook, (Chicago, Society for Visual Education, Inc., 1949), pp. 28-29.

> situations, relationship may be studied to the greatest advantage.[4]

Contributions can be meaningful to almost every subject: such as art, geographical relationships, literature, occupations, trends, persons, color, motion, teaching values, constructive influence on pupils, industries, commerce, museums, historical sites and areas.

(d) The best explanation and suggestions concerning the use of objects, specimens, models are found in Dr. Hoban's monograph on "Visual Education and the School Journey."[5]

> The object is the thing itself that can be brought into the classroom for study. The specimen is a sample, a part intended to show quality, one of several things which represents all, for example, a piece of coal, wood, cloth. The model is a small size representation, as for example a building, engine, heart, lungs, globe.[6]

We too often take a considerable period of time to describe verbally or through the printed page a relationship which could be portrayed more accurately and vividly in half or quarter of the time by means of the natural setting, environment, situation, object, specimen, model, or picture. Only actual tests of their use are needed to convince the teacher of their value.

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[4] Ibid., p. 28.

[5] Charles Hoban, Visual Education and the School Journey, (Harrisburg, Pennsylvania, Department of Public Instruction, 1930).

[6] Ibid., p. 32.

(e) The photograph has been and remains one of the most readily accessible, economical, and effective of visual training materials. It is abundantly available and extremely useful. Materials from magazines such as The National Geographic Magazine[7] and nature study and travel magazines contain illustrations which are accurate and useful.

(f) The graph is a drawing showing the relative size of numerical quantities. It is used to present facts in picture form so that they will be clearer and easier to understand. The line graph is the simplest type and one of the easiest ways to show the relative number of pupils present, grades, amount of production of factories or farms, statistics of income, taxes, wealth. The bar graph is a good way of expressing comparisons or increases and decreases in quantity over a period of time. The circle graph is used to show the relation of the parts of anything to the whole. Maps may be of almost any type, subject, form, color, or dimension. Some maps may show the location of cities, roads, and railways, others may suggest that people do not farm where rainfall is less than 20 inches per year. The globe presents the most nearly perfect picture of the earth. Only a globe can show all parts of the earth true to scale. The globe is the preferred map for many purposes, and it is useful for planning air and sea routes and

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[7]National Geographic Society, Sixteenth and M. Streets Northwest, Washington, D.C.

for radio communications.

Dale stated:

> Instructional materials conveying meaning largely through relatively highly conventionalized symbols that are nearer to reality psychologically than verbal symbols and relatively further from reality psychologically than pictures; for example, maps, charts, diagrams, posters, cartoons, graphs.[8]

(g) The play is a story told in such a way that it must be acted out by living players to obtain its full effect. It is a simple way of recording human endeavor, and its purpose is to entertain and to instruct. Dramatization of leading works in literature, historical events has been and is one of the very effective methods of arousing interest, teaching and developing proper appreciation. The limitation of instructional time makes it necessary to give careful consideration to the proper time and place to develop pageantry or dramatic presentation. The greatest good will come to those pupils who have a part in the play or pageant, so provisions should be made for as many as possible to take part.

One limitation of the pageant is that it is quite likely to require weeks or months for the preparation, and one hour or more for the presentation and then it is forgotten. A pageant is not an ordinary play, it must be a play of special significance. A play with its scenes built around the growth of a city might be called a pageant. A suggestion in making

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[8]Dale, op. cit., p. 537.

a movie of the pageant which will become a permanent record which could be projected as often as might seem desirable for teaching purposes. The introduction of 16mm motion picture camera and film make it possible to use this type of equipment to record pageants, plays and other group activities for future reference and use with class and community groups.

(h) One of the chief purposes of a museum as a public institution is to educate the people, by displaying exhibitions, giving free guide service, lectures, radio talks, and publications. Two new kinds of museums have arisen in the United States in the past few years, these are the children's museum and the trailside museum.

The school museum should provide space for the object, specimen, model collections of the school, except possibly those items which are adapted to the use of the teacher in one section or room. The museum should provide space for posters, picture collections, industrial exhibits, special exhibits, slides, filmstrips and such motion pictures as may be owned by the school. There are many sources from which desirable exhibit materials may be secured at little or no cost. Industrial organizations of almost every type are ready and anxious to cooperate with the schools which desire to teach the stories of various products and commodities.

One of the primary requirements of the successful use of audio-visual aids is that the materials shall be available for use at the time they are needed in the classroom. For

this purpose, the school museum becomes almost a necessity in every school system.

(i) The opaque projector is an instrument which projects on a screen by reflection any pictures, diagrams, and other flat or near flat surfaces, which can be placed in the aperture of the machine. Materials for use in it may be collected from hundreds of sources, including books, magazines, post cards, travel bulletins, catalogs, or nearly anything which has in it an illustration worthy of class consideration.

(j) While some schools seem to have forsaken still-projected pictures in favor of motion pictures, this is not the general trend. A series of good still pictures can increase the understanding and make more real a teaching situation. Improvement in projectors to throw more light on the screen and to facilitate projection has increased the sales of projectors and the demand for more filmstrips and 2 x 2 slides.

The filmstrip is actually a strip of standard size 35mm film as used in theatres. The strip, like all 16mm motion pictures, is noninflammable. It is usually from 4 to 6 feet long, depending upon the number of frames or pictures to be shown in the series. Each strip is made up of pictures placed in proper sequence to tell a story.

The filmstrip has two advantages over slides in general, either 3 1/4" x 4" or the 2" x 2". First, the pictures are always in the proper sequence. Second, they can be changed

without delay from one picture to another and as rapidly as needed. These features are especially desirable if the filmstrip has an accompanying record which carries the information about the pictures.

A great increase in the production of filmstrips since the war promises a wide selection of subject matter. Some strips consist of a series of pictures without titles and depend upon the teacher to read the information from a booklet furnished with the film. Each frame throws a small number on the screen to identify the picture with the script to be read. This is the older method and least desirable. The best and most recent method is to have a record used in conjunction with the projector so the story is narrated along with the pictures as they are flashed on the screen. Two other methods are used to carry the information intended by the producer of the film. One is alternating pictures with full frames of print to be read which tells the story of the next picture. The other and better method is to use a portion of the picture area to carry a message in as few words as possible. Plans are underway to make a series of color slides to show some of the historical points of interest in Montana and to have the color slides changed into a filmstrip for school use. A group of slides on conservation was shown with the story made on the school tape recorder. A project at the Prescott School on puppets was done in the same way. Some difficulty was experienced in shifting the slides to fit the recording, so

an automatic slide changer was used. The magazine holds 36 slides and are removable and may be used to keep sets of slides in order for storage. By placing the magazine in position, the whole group is ready to be shown.

The filmstrip is so inexpensive that one may build up a very impressive selection in a short time on a limited yearly budget.

The sound filmstrip is not so popular with teachers as the regular silent version. Some feel that it limits the discussion which is so valuable with the silent filmstrip. The audible signal is often distracting and the synchronization of the projector and turntable is irregular.

The 2" x 2" slide has advantages all its own. It is small, light, relatively inexpensive, and may be filed in a small space. The cost ranges from 15 cents to 40 cents per slide for the black and white, and from 50 cents to 75 cents for color. It is readily evident that the 2" x 2" slide is more expensive to purchase, per picture, than the filmstrip. To overcome this, some persons buy filmstrips, cut them into separate frames, and mount them in the simple, inexpensive cardboard ready mounts.

(k) The stereograph is a picture which produces the impression of the third dimension depth. The observer really sees one picture with the left eye and another with the right. The sense organs put the two pictures together and we see the whole object, thus giving the impressions of solidity and

relief. The stereoscope itself is an optical instrument with a similar pair of lenses separated by a small wooden or metal partition to keep the right eye from seeing the left view and the left eye from seeing the right view. These lenses are arranged within a hood which fits over the eyes and tends to shut out the light and other possible distractions.

The stereograph is inexpensive, costing only about twenty-one cents for each view. Furthermore, there is an unlimited supply of excellent stereographs available. The stereograph is an individual rather than a group teaching tool.

(l) The principal adjustment in the operation of the Keystone 3 1/4" x 4" slide projector is that which will adapt it to the projection distance in any given situation. This is accomplished quite easily by extending or retracting the bellows and making fine adjustment by revolving the objective lens. Another adjustment may be required to raise or lower the image to the position of the screen. This is accomplished usually by loosening the small set-screw at the base of the projector, adjusting the position of the image, and lightening the screw.

(m) It would be inappropriate to devote much time and space to silent motion pictures, except for those which are produced for local use. The swing to sound motion pictures in theatres has been followed by a similar preference for sound among educational film users. There are very few who

prefer silent films if similar subjects are also available with sound. The plans to make silent motion pictures of the physical education department and other school activities is now in progress. Sound will be placed on silent film by the new Filmosound 202 produced by Bell & Howell.

(n) Satisfactory projection of pictures of all types requires, first of all, a screen with a reflecting surface suitable for the situation. There are two general types of screens: (1) those which reflect the picture, and (2) those which transmit the picture. The first type is called the opaque screen and the second, the translucent. The reflecting or opaque screen is used most generally by schools, although the translucent screen is used in some instances where it is advisable to have both the projector and the screen at the front of the classroom and necessary to compete with the interfering light. The common types of screens are: beaded screen, silver screen, mat white screen, translucent screen.

Screens are available on tripods, on rollers to be hung against the wall, or on rollers to be suspended from the ceiling. Some are available in boxes and extend upward when the box is placed on a table. Selections of the type of mounting should be determined by the situation in which the screen is to be used.

Adapting Types of Sound Equipment and Materials

(a) Teachers of music consider phonograph records to be indispensable teaching materials. Records are used to teach rhythm to pupils of all ages. Recordings of children's songs are used to teach songs to individual pupils and to groups. Records which illustrate individual instruments of the orchestra serve well in teaching the sound of each. Records aid in studying and learning folk songs and folk dances of the world.

Many persons have the impression that phonograph records are effective only in teaching music and music appreciation. It is true that records are used more extensively for these purposes, but there are many other purposes for which they can be and are being used effectively in classrooms.

There are records which illustrate proper pronunciation and enunciation, recorded speech aids in teaching the correct use of spoken English. Rhythm records are used in penmanship and typewriting classes. Other rhythm records are used extensively by physical training instructors with large and small groups of all ages. Recorded music of various periods and nationalities is integrated with the study and teaching of literature, nature study, geography, history, and other natural and social studies.

A more recent development in phonograph records promises to make available for class use many of the best

educational radio programs. Recordings of the programs will make it possible for the classroom teacher to use the material when best suited to the teaching plans and as often as may seem desirable.

(b) It is likely that the use of radio in schools for instructional purposes is receiving more attention among schools and educational service agencies. The National Broadcasting Company, Columbia Broadcasting System, Mutual, Office of Education and many smaller organizations are giving careful consideration to ways and means of utilizing radio to the greatest educational advantage.

One of the major problems is that of determining just what type of program is most effective in education. Some programs have been too dull and others too entertaining to accomplish the desired result. The successful educational radio program of today is one which sets out to accomplish definite objectives and does so by following certain procedures. The bulletin, "Education by Radio," presents a summary of "Guideposts for Producing Educational Programs," which should provide a clear impression of some of the problems of educational broadcasting.[9] Some programs, such as the NBC "Music Appreciation Hour," "The Endless Frontier," "Carnival of Books," "NBC Symphony Orchestra," "Fisk

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[9]"Education by Radio," Col. 7, No. 4, April 1937. National Committee on Education by Radio, New York.

Jubilee Singers," "Cavalcade of America," "The Silent Men," "Viewpoint USA," "Critic at Large." Other programs in science, geography, history, etc., should be utilized by those groups which will be able to fit the radio lesson into the scheduled classroom procedure.

(c) Many times the radio program is not on the air when it would be most convenient for the class or group which should secure the greatest benefit from the program. This means that it is necessary to disrupt other class schedules and plans or miss the program entirely. A more logical solution of the problem, which is receiving the attention of broadcasting facilities and schools, is that of recording the radio programs for use over and over again with different classes or sections at the time when the instructional materials fit the teaching schedule. These recordings of radio programs are known as transcriptions. This means simply that the program has been recorded for reproduction.

A plan to make available many excellent recordings of radio programs is being put into operation by at least two of the large broadcasting companies and by the Federal Radio Project, U. S. Office of Education. This plan provides for the preparation of transcriptions or radio recordings of leading educational broadcasts for use among schools.

An explanation of the difference between phonograph records and transcriptions (radio recordings) seems to be in

order at this time. The phonograph record is recorded on a recording wax which revolves at the rate of 78 revolutions per minute. The average 10-inch phonograph record can accommodate a maximum of approximately 3 minutes and 15 seconds of recording on one side. A 12-inch record can be used for a recording period of about 5 minutes.

The process of making a transcription record is about the same, except that the transcription wax revolves at the rate of 33 1/3 revolutions per minute, making it possible to record for 15 minutes on one side of a 16-inch disc or for 10 minutes on one side of a 12-inch disc.

(d) The instantaneous recorder may be used to record speech, music, or any type of audible sound on a "blank" recording disc and reproduce that recording as soon as completed, with no processing required. The records may be used many times and additional copies may be prepared either by re-recording (dubbing) or by using duplicating processes similar to those applied to wax recording. These disc recorders are available in three general types, to take care of almost any situation.

A more recent development in recording is the machine which utilizes magnetic metal tape. This instrument provides for the recording and the instant playing back of a few minutes of speech or musical performance, but does not provide a permanent record of that performance.

Another recording and playback equipment uses a small magnetic wire. This recorder, depending upon the size of the spool of wire used, will accommodate a few minutes or an hour or more of recording.

The latest development in recording and playback equipment uses plastic or paper tape which has been impregnated with a magnetic surface. This system for recording and reproduction of sound promises to become the most practical for schools. It is simple to operate, inexpensive and accurate. One of the greatest advantages is that the tape may be cut and spliced, to eliminate unwanted material or rearrange the sequence to suit requirements. The possible and practical uses are: speech, to measure progress, voice training, music, vocal or instrumental, eliminate the personal element and errors in human judgment.

(e) The problem of providing sufficient sound to reach all corners of an auditorium or other space with clearness has confronted individuals and groups. Simply operated sound amplifying equipment makes it possible for the person or group to perform at normal speech or sound levels and have that performance amplified to reach any audience.

Adapting Types of Audio-Visual Materials and Equipment

(a) The sound slidefilm is a combination of the ordinary filmstrip and the phonograph record or transcription. It is a filmstrip, usually 35mm, in black and white or color,

with a recorded script. The recording has been on vinylite records for the most part, to be played at either standard 78 rpm or at long-play speed, 33 1/3 rpm. Recently the sound has been put on tape or wire, but records are still generally used.[10]

(b) More recently the producers of sound motion pictures have utilized sound more effectively and the production of silent films has been limited to those subjects which are produced for local use. There is now available a range of 16mm sound motion pictures which will serve the needs of the great majority of classroom teaching situations. A number of school systems are using sound motion pictures to solve problems other than those connected with the classroom instruction. In some places, motion pictures are shown in the school auditorium during the latter part of the lunchroom period to keep the youngsters inside during bad weather. There is no attempt to coordinate these showings with the teaching schedule inasmuch as they are purposefully arranged for pure entertainment and are so considered.

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[10]"The Sound Slidefilm," Film News, The Magazine of Films, Filmstrips, Television, Recordings, Vol. XII, No. I, January 1952, p. 16.

# CHAPTER V

## INSTRUCTIONAL PROBLEMS

### Teacher's Preview and Selection

For elementary school purposes, a twelve to fifteen-minute film, closely related to the unit of study, with a few simple but well-developed concepts is desirable. If a film is to be purchased and made a part of the permanent film library, it might be well to have many teachers assist in its preview and selection.[1]

What preparation should be made by the teacher when using an aid with a class? Preview the film carefully. Study the teacher's guide which accompanies the film. Place on the blackboard the new and difficult words and word phrases used in the film. Make an outline of the major teaching concepts in the film. Find out what problems are solved by the film. Let the topics for discussion be suggested by the class observing the film. List the main ideas learned from the film.

How is a film used with a class? There are three steps in using a film: Preparation, presentation, and follow-up.

A. Preparation:

Make clear the setting of the film. Introduce the

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[1]"Instructional Problems," Audio-Visual Guide, XVI, (October, 1949), pp. 10-11.

people. Check the new words or phrases. Make clear what problem is to be solved, if any. List the questions that the film answers. Watch for significant items in the film.

B. Presentation or screening the film:

If it is a sound film, it is well to stop the film at various places for questions and discussion. The film may be run through and then reshown. When showing a silent film it is sometimes advisable for the teacher to read the captions and make comments for younger children. Use of tape.

C. Follow-up:

Have the class check the answers to the questions or problems presented in the preparation. A written checkup or a game may be used to check the ideas that pupils have gained. Give full opportunity for pupils to ask questions about the film facts and to correct mistaken ideas.

Are school films more entertaining than instructional? When correctly used, the film serves instructional purposes. The motion picture presents reality and contributes to understanding. Films can be used with young pupils with excellent results if guidance accompanies their uses.

What are the values of a film program? Supplementary books enrich unit study, and few would deny their benefits in terms of larger understandings. A film program is equally valuable if it is planned to supplement a definite program and in turn fits into that program.

Where may a person find information about films? Nearly all the states have film bureaus which distribute many types of audio-visual aids. Catalogs list their offerings.

How many films should be shown in a term? a week? The number of films shown to any class or group should be determined by the needs and interests of that group. It would seem advisable, at the elementary level, to show at least one film a week. Use only one film at any one sitting.

What constitutes a good film record? The film record may be kept on a 3 x 5 card, showing the film information, and one may use the film facts in developing the instructional program or for review.

Is it considered a sound practice to show a film, for instructional purposes, in an auditorium situation with many different grades or classes present? A film may best be used in an auditorium situation for entertainment purposes.

What is the average cost of an instructional film? One reel, sound film, in black-and-white costs from $35.00 to $50.00. Silent films cost about $30.00. Colored films cost about twice as much as black-and-white.

Is it better to rent or buy films? This is somewhat dependent upon the number of times the film will be used during the year. If the film is to be used once or twice, it is better to rent it. If, however, it is one that supplements the curriculum and will be used with several classes in different subjects, it is more economical to buy it.

How valuable are advertising films? The type and character of advertising films has definitely changed in the past few years, for the better. If the film carries no offensive advertising and has good instructional material and carries accurate information fitting into the program, there is no reason why it cannot be used. However, it is the supervisor's responsibility showing such a film to know the policy of the administration regarding the use of this kind of film.

Should the P.T.A. help finance the audio-visual program? This organization may help to start the program. Films are secured from the state film bureau and other firms at small cost. The board of education here in Missoula provides a fund of $2,000 for audio-visual aids.

What should be the per-pupil cost of an audio-visual program? This is not standardized. It ranges from 5 cents per pupil per year to $5.00 per pupil per year. A dollar a year for each pupil is reasonable.

## A Teacher's Guide

Other People's Property is one of the new Young America Film[2] series, Discussion Problems in Group Living. The films in this series portray life problems of adolescents so that these problems can be brought out into the open for discussion.

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[2]"Other People's Property," Young America Films, Inc., (September, 1951), p. 5.

These films do not present a clinical approach, but rather portray everyday problems which the average adolescent must face. They deliberately avoid any ready-made solutions, but are designed so that they challenge students to discuss and arrive with their teacher or group leader at answers which help them solve their problems and build good character.

The films in this series portray life problems for grades 5-9, and gives suggestions on guidance, human relations, mental health, language arts, social studies, and home room. (May also be used with older students and by joint panels of students and parents and teachers for assemblies and other meetings.)

The purpose of the film can be divided into three main parts:

1. To present a situation out of which can be built a discussion on respect for property and the moral responsibility for protecting and preserving public property.

2. To give students an insight into the consequences of thoughtless actions and through group discussion of this problem to build more mature and ethical behavior patterns.

3. To provide curriculum content through the medium of the film which may be used by the teacher to build character and behavior patterns.

Other People's Property is a film concerned with a typical behavior problem. It shows what may happen when we do not stop to think of the consequences of our act and when

we fail to consider that it is wrong to do anything which wastes other people's time or destroys property. This film differs from conventional film form in that it has an "open end." Its purpose is to draw from the students' experience and to challenge them to explore conditions in their own classroom, school and neighborhood, and then to apply their findings to themselves and their fellow students.

The film opens on a familiar scene of three boys anxiously waiting outside the principal's office. The boys know they are in real trouble, and they are concerned over what will happen to them. Some of the thoughts of each boy are expressed. Jimmy is just plain scared; Dale is concerned because his mother and father will be hurt when they hear of his misconduct; Frank seems unconcerned about parental shame and tries to minimize their guilt by stating that other students also have damaged school property. Dale wishes, belatedly, that he could have another chance.

The film then flashes back to the incident leading up to their present situation, to the day when Frank was kept after school because he had thrown paper wads in Mr. Kraft's class. He was angry and wanted revenge because Mr. Kraft kept him in after school. As Frank left that afternoon, he met Jimmy and proposed a way to get even by burning a chemical in the classroom. Jimmy thought this would be fun. Their friend Dale happened along, and they tried to persuade him

to join in their plot. Dale resisted, but they taunted him until he joined in.

After class they placed the chemicals in the waste-basket. The flash and puff of smoke scared the boys. They hastily made their escape. Smoke poured out of the room, and in the excitement, someone pulled the fire alarm. The strong fumes from the burning chemicals made some students sick. The fire alarm interrupted dress rehearsal of the class play. There was so much smoke and smell that it was necessary to dismiss some classes and time was lost which the students had to make up. The paint in the classroom was so badly damaged that the room had to be redecorated.

When the boys realized the consequences of their prank they were sorry and remorseful, in varying degrees. Their fun and excitement now changed to fear and worry. It was known that the boys had been seen to leave the damaged classroom, and they began to feel the scorn of their classmates. Soon there came the call for them to report to the principal's office. As the principal opens his door and calls the boys into his office, the narrator asks these questions of the audience: "If you had been in this situation at the beginning, would you have stopped to think about the damage you might cause to other people's property? What do you think was the real reason Frank acted as he did? What would you have done if you had been Jimmy? Do you think Dale would have preferred not to join Frank and Jimmy? Why? What do you think?"

In using this film it is suggested that three steps be followed: (1) first, introduce the topic and set the stage for an understanding view of the film; (2) second, screen the film; (3) and third, conduct a follow-up discussion beginning, if possible, immediately following the showing of the film. In the discussion period, students should be encouraged to analyze and discuss the problem posed by this film and then apply the discussion to their own school and community. Finally, they should be guided into a discussion of the basic problem of individual and group responsibility in respecting and protecting the rights, feelings and property of other people.

Here are some ways in which the presentation and discussion of the film might be planned and guided:

A. Before showing the film introduce the problem of considering the rights and property of other people, our film today is titled "Other People's Property." It shows the consequences of thoughtless action and what happened when three boys failed to consider the rights and property of others. In our country we are guaranteed the liberty and freedom which men have sought and died for since the world began. One price of freedom is moral and social responsibility. Our freedom to act is coupled with the rights of other people.

You may wish to have a committee of the class preview the film and help plan with the class its use, following out

some of the suggestions given below:

B. Show the film.

C. After showing the film begin the discussion. Let it begin, as it naturally will, in terms of the situation portrayed in the film and the questions asked at the conclusion of the film. Then the discussion can progress gradually to a broader consideration of the basic problems involved. Some possible ways in which the film can be made a real curriculum experience are:

1. Conduct a discussion with the teacher or a student as leader. What it means, how it applies to our school, and considering what we would do to protect property and the misuse of people's time. In this it may be a good thing to explore some of the instances of misuse or destruction of property and what might be done about such things as window breakage, writing on walls, cutting desks, mutilation of books.

2. Students might well be asked such questions as these: What caused Frank to want revenge on Mr. Kraft? Was Frank a real leader? How would you describe Frank's character? Jimmy's? Dale's? How do you keep from doing things which you know are wrong? Why is it that people like Jimmy just don't seem to see ahead of the excitement of their act?

3. After showing the film, the class might be divided into groups of five or six per group for about six minutes, each to report on what they got out of the film. Or, one

group might report on the extent of destruction about the school and how much it costs; another on why people destroy that which belongs to others; another on what could be done to better protect property. How much of the property destruction is malicious and how much thoughtless?

4. After the discussion, a class might decide to make a real study of the destruction of property in the school and community and plan a program of action. Interviews could be made with the board of education, the police, the fire department, or representatives of an insurance company.

5. After one or more classes have seen the film, a panel of parents and students might come together to consider the problem of protecting other people's property. A meeting of parents, teachers and pupils might then consider what can be done about vandalism. Where there is good recreation, and where boys and girls have good homes, schools and community programs, there seems to be less destruction of other people's property.

6. There is usually no one best solution to a problem. Solutions will vary with the time, place, and the individual. One film alone cannot remake personality, but it can serve as a strong experience in building appropriate individual and group behavior. The film is a starting point, a way of bringing up for discussion topics which students might otherwise be unwilling to raise.

7. Don't expect the same type of discussion nor the same results each time you use the film. The discussion trend will vary widely from time to time, especially in relation to the social, mental and physical maturity and the experience of each group.

# CHAPTER VI

## SUMMARY, CONCLUSIONS, RECOMMENDATIONS

A comparison of the progress for the year 1949-50 (rental of films, very limited use of filmstrips, use of recordings, no organization) with that of 1951-52 (ownership of films, filmstrips, and recordings and their organization for use) indicated that the Missoula Public Schools had been provided with a more effective audio-visual program in 1951-52 than in previous years. Two significant differences existed: all types of audio-visual teaching aids were owned and made available for teacher use when they were needed, and they were organized for maximum utilization.

Visual education is the practice of teaching by the use of still or motion pictures, diagrams, maps, models, or the objects themselves. There is a Chinese proverb which says "One picture is worth ten thousand words." This means that one is often able to understand what he sees more clearly and easily than what he only hears or reads. But visual education is rarely complete by itself. For this reason verbal explanation, discussion, and reading about the objects and processes that are being studied are commonly used in connection with the visual materials. Otherwise the pupils often fail to observe or fail to understand the most important parts of the presented materials. Visual education is particularly valuable in teaching the sciences, geography and the social studies.

Visual aids in teaching are often combined with auditory or sound aids, as in the use of the sound motion picture or the phonograph. Such combinations are called audio-visual aids.

Most visual aids in education are divided into four classifications. There is the natural type of visual aid, which includes chemicals, plants, animals, specimens from larger subjects and mechanical instruments. The pictorial substitute includes movies, photographs, drawings, and stereographs. Schematic representation uses maps, globes, and miniature models. The fourth type of visual aid is the symbol, which includes graphs, diagrams and charts.

Many methods of instructing through the eye are used in other places besides schools. Industry has found it can train new employees through visual means. During World War II, the Army and Navy had to train millions of men in a very short time. Visual aids such as motion pictures, film slides or filmstrips, demonstrations and natural objects were much in use. Mock-ups helped greatly in teaching mechanical details in such fields as radio.

Educators believe that visual education in the future will have much more to offer. Television, in particular, may prove valuable in many fields of instruction. International good will may be strengthened through intelligent use of these methods, so that where language difficulties exist, pictures will tell the story.

The Missoula Board of Education and administrative officers are all vitally interested in the problem of the schools. They were surprised to learn that the schools had used so many films during the last year. All agreed that films can bring the world into the classroom, give words meaning, and help to create understanding. All felt that basic films to be purchased should be carefully evaluated by the teaching staff. All expressed interest in the filmstrip on "How, What and Why" of Audio-Visual Education, showing the teacher previewing the film, then introducing it to the class, showing it, and reviewing it. This stimulated a desire for an in-service training program for new teachers coming into the system and for older teachers who have not had an audio-visual course, as well as those in the system who might welcome a refresher course.

Maurice McCann[1] in his article on report to the board of education outlined the following plan:

I. A film center and depository should be set up.
   A. It should be located in a centralized school.
   B. It should include space for a workshop and preview room.
   C. It should provide facilities for storage, cataloging, and inspecting films.

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[1]Maurice C. McCann, "Visualizing a Report to the Board of Education," Audio-Visual Guide, XVI (March, 1950), p. 10.

II. A plan for booking both rental and free films.
   A. All orders should be sent to the visual education center.
   B. Films should be scheduled for all schools as needed.

III. Schools should have the following equipment and facilities:
   A. One sound projector for each school.
   B. One filmstrip projector for each school.
   C. One opaque projector for each school.
   D. Electrical outlets, curtains, and screens.
   E. One record player for each floor.
   F. One tape recorder for each school.
   G. A large public address system for the system.

IV. In-service training for teachers should be planned.
   A. A workshop for audio-visual demonstrations and discussions, organized as a training course, should be set up.
   B. Credit should be allowed to satisfy board requirement.

V. Teaching films should be purchased.
   A. Films should be purchased for elementary levels after preview and selection by advisory committee.
   B. All teaching films should be correlated with courses of study.

The audio-visual program for the Missoula Schools should include:

1. A full-time audio-visual director for Missoula.
    a. He must know sources of films and visual materials.
    b. He must be familiar with projection equipment.
    c. He must know about the school curriculum.
    d. He should be able to work with teachers.
    e. He should be able to take care of equipment.
2. An adequate budget.
    a. A budget of $2,000 has been provided but may be lowered because of other expenses.

# BIBLIOGRAPHY

## A. BOOKS


Dale, Edgar, Audio-Visual Methods in Teaching. New York: The Dryden Press, 1946. 546 pp.

Dent, Ellsworth C., The Audio-Visual Handbook. Chicago: Society for Visual Education, Inc., 1949. 220 pp.

Exton, William, Jr., Audio-Visual Aids to Instruction. New York: McGraw-Hill Book Company, Inc., 1947. 344 pp.

Falconer, Vera M., Filmstrips. A Descriptive Index and Users' Guide, First Edition. New York: McGraw-Hill Book Company, Inc., 1948. 538 pp.

Frayne, John G., and Halley Wolfe, Elements of Sound Recordings. New York: John Wiley & Sons, Inc., 1949. 686 pp.

Hoban, Charles F., Jr., Focus On Learning. Washington, D.C.: American Council on Education, 1942. 172 pp.

Hoban, Charles F., Jr., Selected Educational Motion Pictures. Washington, D.C.: American Council on Education, 1942. 480 pp.

McClusky, Dean F., Audio-Visual Teaching Techniques. Dubuque, Iowa: Wm. C. Brown Company. 139 pp.

McKown, Harry C., and Alvin B. Roberts, Audio-Visual Aids to Instruction. New York: McGraw-Hill Book Company, Inc., 1949. 608 pp.

Mallinson, C. C., Use of Films in Elementary Science. Kalamazoo, Michigan: Western Michigan College of Education, 1950. 24 pp.

Mannino, Philip, ABC's of Visual Aids and Projectionist's Manual. State College, Pennsylvania: M. O. Publishers, 1949. 84 pp.

Rufsvold, Margaret I., Audio-Visual School Library Service. Chicago: American Library Association, 1949. 116 pp.

Schreiber, Robert E., and Leonard Calvert. Building an Audio-Visual Program. Chicago: Science Research Associates, 1946. 103 pp.

Turnbull, Robert B., Sound Effects. New York: Rinehart & Company, Inc., 1951. 334 pp.

Weaver, Gilbert G., and Elroy W. Bollinger, Visual Aids: Their Construction and Use. New York: D. Van Nostrand Company, Inc., 1949. 388 pp.

Wilson, W. H., and K. B. Haas, Film Book. New York: Prentice-Hall, Inc., 1950. 259 pp.

## B. PERIODICAL ARTICLES

Allen, William, "Research Verifies The Value of Audio-Visual Materials," NEA Journal, 41:49, January, 1952.

Anderson, Ronald L., "A New Audio Aid to Education," Audio-Visual Guide, 18:7-10, January, 1952.

Baird, Thomas, "Unesco Conference Learns About Films," Film News, 12:5, January, 1952.

Blanc, Sam S., "Selection of Audio-Visual Instructional Materials," Audio-Visual Guide, 18:11-13, January, 1952.

Brecha, Harry C., "A Guide to the Preparation of Filmstrips," Audio-Visual Guide, 16:17-20, May, 1950.

Close, A. B., "Philosophy of Audio-Visual Instruction," Washington Park High School, Racine, Wisconsin.

Condon, Mary M., "The Training of Teachers," Montana Education, 27:31-32, October, 1950.

Crombie, Charles W., "Noon Movies," Audio-Visual Guide, 17:12, March, 1951.

Denham, Daniel E. Jr., "Care and Maintenance of Tape and Tape Recorders in Schools," Audio-Visual Guide, 18:18, October, 1951.

Dresden, Katharine, "A Demonstration Lesson," Audio-Visual Guide, 15:7-8, February, 1949.

Estrin, Herman, "Field Trips as Audio-Visual Aids," Audio-Visual Guide, 16:26, January, 1950.

Hainfeld, Harold, "Elementary Students Can Make Movies," Audio-Visual Guide, 17:30, March, 1951.

"Instructional Problems," Audio-Visual Guide, 16:10-11, October, 1949.

McCann, Maurice C., "Philosophy of Audio-Visual Instruction," Washington Jr. High School, Racine, Wisconsin.

McCann, Maurice C., "The How, What and Why" of Audio-Visual Education, (a filmstrip) Racine, Wisconsin.

McCann, Maurice C., "Visualizing a Report to the Board of Education," Audio-Visual Guide, 16:10, March, 1950.

McCracken, Glenn, "Primary Reading Gets New Stimulus With Filmstrips," SVE Visual Review, 51:1-3, 1952.

Marble, Arthur A., "Reveal Reactions to Moral Education," Film World and A-V World, 8:90-91, February, 1952.

Morris, Cleda, "Advantages of the Keystone Overhead Projector," Audio-Visual Guide, 18:16, February, 1952.

Nagurney, Michael J., "Simplicity for A-V Programs," Audio-Visual Guide, 15:11, February, 1949.

National Committee on Education by Radio, "Education by Radio," Col. 7, No. 4, April, 1937.

"Other People's Property," Young America Films, Inc., 5, September, 1951.

Riesch, Kenneth, "Philosophy of Audio-Visual Instruction," Mission House College, Plymouth, Wisconsin.

Sprenger, William R., "The Chalkboard--A Neglected Giant of Visual Education," Audio-Visual Guide, 18:7, February, 1952.

Tasker, Robert, "Philosophy of Audio-Visual Instruction," McKinley Jr. High School, Racine, Wisconsin.

Wall, Dorothy, "Enrichment or Mere Entertainment?" NEA Journal, 40:257-258, April, 1951.

# APPENDIX

# APPENDIX A

## THE FILM REFERENCE SHELF

### Film Catalogs

Catalogs--General Findings Tools For Films On All Subjects:

| | |
|---|---|
| Catalog of Films for Church and Community Use | Religious Film Association, Inc., 11 West 42nd Street, New York, N. Y., 35¢ |
| Educational Film Guide | H. W. Wilson Co., 950 University Avenue, New York, $4.00 |
| Educational Filmstrip Guide | H. W. Wilson Co., 950 University Avenue, New York, $4.00 |
| Educators Guide to Free Films | Educators Progress Service, Randolph, Wis., $4.00 |
| One Thousand and One: The Book of Non-Theatrical Films | Educational Screen, 64 East Lake Street, Chicago, Ill., $1.00 |
| Sound Slidefilm Guide | Business Screen Magazine, 812 N. Dearborn Street, Chicago, Illinois |
| United Nations in Films | United Nations Information Center, 610 Fifth Avenue, New York 20, New York |
| Selected Educational Motion Pictures: A Descriptive Encyclopaedia | American Council of Education Committee on Motion Pictures, 744 Jackson Place, Washington 6, D.C., $3.00 |
| Educators Guide to Free Slidefilms | Educators Progress Service, Randolph, Wis., $4.00 |

| | |
|---|---|
| Elementary Teachers Guide to Free Curriculum Materials | Educators Progress Service, Randolph, Wis., $4.00 |

Representative Producers' and Distributors' Catalogs

| | |
|---|---|
| Association Films (Y.M.C.A.) | 347 Madison Avenue, New York, New York |
| Brandon Films, Inc. | 1600 Broadway, New York, New York |
| Bray Studios, Inc. | 729 Seventh Avenue, New York, New York |
| Cathedral Films | P.O. Box 589, Hollywood 28, California |
| Coronet Instructional Films | 65 E. South Water Street, Chicago 1, Illinois |
| Eastin Films, Inc. | Davenport, Iowa |
| Encyclopaedia Britannica Films, Inc. | Wilmette, Illinois |
| Film Publishers, Inc. | 25 Broad Street, New York 4, New York |
| Films Incorporated | 330 W. 42nd Street, New York 18, New York |
| Films of the Nations, Inc. | 55 W. 45th Street, New York 19, New York |
| Forum Films, Inc. | 8913 Sunset Blvd., Los Angeles, California |
| Frith Films | P.O. Box 565, Hollywood, California |
| Ideal Pictures Corporation | 28 E. Eighth Street, Chicago, Illinois |
| International Film Bureau | 6 N. Michigan Avenue, Chicago, Illinois |
| Jam Handy Organization | 2900 E. Grand Blvd., Detroit 11, Michigan |

| | |
|---|---|
| March of Time | 369 Lexington Avenue, New York, New York |
| McGraw-Hill Text Films | 330 W. 42nd Street, New York, New York |
| Modern Talking Pictures Service, Inc. | 9 Rockefeller Plaza, New York, New York |
| National Film Board of Canada | 400 W. Madison Street, Chicago, Illinois |
| National Safety Council | 353 4th Avenue, New York 10, New York |
| Nu-Art Films, Inc. | 145 W. 45th Street, New York 19, New York |
| Official Films, Inc. | 25 W. 45th Street, New York 19, New York |
| Pictorial Films, Inc. | 625 Madison Avenue, New York 22, New York |
| Popular Science Publishing Co. | 353 4th Avenue, New York 10, New York |
| Princeton Film Center | 410 Nassau Street, Princeton, New Jersey |
| Religious Film Association, Inc. | 45 Astor Place, New York 3, New York |
| Society for Visual Education, Inc. | 100 E. Ohio Street, Chicago 11, Illinois |
| Teaching Film Custodians, Inc. | 1600 Eye Street, Washington, D.C. |
| United World Films, Inc. | 445 Park Avenue, New York 20, New York |
| Young America Films | 18 E. 41st Street, New York 17, New York |

U. S. Government Catalogs:

| | |
|---|---|
| Directory of United States Government Films | U.S. Film Service, Federal Security Agency, Social Security Bldg., Washington, D.C. Free |
| Motion Pictures of the United States Department of Agriculture | USDA Miscellaneous Publication #754, with supplement. Motion Picture Service, Office of Information, U.S. Department of Agriculture, Washington, D.C. Free |
| United States Government Motion Pictures and Filmstrips | Division of Visual Aids, U.S. Office of Education, Washington, D.C., Free |

Catalogs of Other Governments:

| | |
|---|---|
| Australian News and Information Bureau | 636 Fifth Avenue, New York, New York |
| British Information Service | 30 Rockefeller Plaza, New York, New York |
| National Film Board of Canada | 400 W. Madison Street, Chicago, Illinois |
| Institute of Inter-American Affairs | 499 Pennsylvania Avenue, N.W., Washington 25, D.C. |

Representative Commercial Sponsors Catalogs:

| | |
|---|---|
| American Telephone and Telegraph Co. | Motion Picture Division, 195 Broadway, New York, New York |
| General Electric Co. | Motion Picture Department, Schenectady, New York |
| General Motors Corporation | Public Relations Department, Film Distribution Section, 3044 W. Grand Blvd., Detroit, Michigan |

| | |
|---|---|
| International Harvester Co. | Motion Picture Department, 180 N. Michigan Avenue, Chicago, Illinois |
| Motion pictures owned by or relating to the American railroads | Association of American Railroads, Washington 6, D.C. |
| National Association of Manufacturers | Public Relations Division, Visual Education Section, 14 W. 49th Street, New York, New York |
| Westinghouse Electric Corporation | School Service Division, 306 Fourth Avenue, Pittsburgh 30, Pennsylvania |
| The Projectionist's Handbook | Audio-Visual Publications, Inc., 812 N. Dearborn, Chicago, Illinois, $1.00 |
| Strauss, L. Harry and Kidd, J. Roby | Look, Listen and Learn. Association Press, 347 Madison Avenue, New York 17, New York, 1948, $3.50 |

Periodicals

| | |
|---|---|
| Educational Screen | 10 issues a year. Educational Screen, Inc., 64 E. Lake Street, Chicago, Illinois, $3.00 |
| Film News | 10 issues a year. Film News Co., The Penthouse, 15 W. 38th Street, New York 18, New York, $3.50 |
| See and Hear | See and Hear, 812 N. Dearborn Street, Chicago, Illinois. 8 issues a year, $3.00 |
| Audio-Visual Guide | 9 issues a year. 172 Renner Avenue, Newark, 8, New Jersey, Audio-Visual Guide, $3.00 |

| | |
|---|---|
| The Film Counselor | 10 issues a year. Film Council of America, 57 E. Jackson Boulevard, Chicago 4, Illinois, $1.00 |
| Film World and A-V World | 12 issues a year. Ver Halen Publishing Co., 6047 Hollywood Boulevard, Los Angeles 28, Cal., $10.00. With yearbook. School rate without yearbook $3.00 |

## APPENDIX B

## SOURCES OF MATERIALS

American Council on Education, 744 Jackson Place, N.W., Wash., D. C.
Curriculum Films, Inc., 10 East 40th Street, New York 16, N. Y.
Encyclopedia Britannica Films, Inc., Wilmette, Illinois
Eye Gate House, Inc., 330 West 42nd Street, New York City
Jam Handy Organization, 2900 East Grand Blvd., Detroit 11, Mich.
Manning Birch Catalogs Inc., 840 North Plankinton Avenue, Milwaukee 3, Wisconsin
The New York Times School Service Department, Times Square, New York 18, New York
Pat Dowling Pictures, 1056 South Robertson Boulevard, Los Angeles 35, California
Pictorial Events, 597 Fifth Avenue, New York 17, New York
Silver Burdett Company, Chicago 16, Illinois
Society for Visual Education, Inc., 100 East Ohio Street, Chicago 11, Illinois
The Stanley Bowmar Company, 513 West 166th Street, New York 32, N. Y.
Stillfilm, Inc., 171 South Los Robles Avenue, Pasadena 5, Cal.
Young America Films, Inc., 18 East 41st Street, New York 17, N. Y.

### 2" x 2" Slides

American Council on Education, 744 Jackson Place, N. W., Washington, D. C.
Art Education, Inc., 6 East 34th Street, New York City
Colorcraft Studios, 6 North Michigan Avenue, Chicago, Illinois
Conrad Slide and Projector Company, 709 East 8th Street, Superior, Wisconsin
Historical Kodachromes, Box 711, Delavan, Wisconsin
Society for Visual Education, Inc., 100 East Ohio Street, Chicago 11, Illinois
Three Dimension Company, 4555 West Addison Street, Chicago 41, Illinois
Viewlex Inc., Long Island City 1, New York
West-View, 1518 Montana Avenue, Santa Monica, California
Young America Films, Inc., 18 East 41st Street, New York 17, N. Y.

### 3¼" x 4" Glass Slides

Eye Gate House, Inc., 330 West 42nd Street, New York City
Keystone View Company, Meadville, Pennsylvania
National Audubon Society, 1006 Fifth Avenue, New York City

National Geographic Society, Sixteenth & M Streets, N. W., Washington, D. C.
Ryan Slide Service, Davenport, Iowa
Sims Visual Music Company, Quincy, Illinois
W. M. Welch Manufacturing Company, 1515 Sedgwick Street, Chicago, Illinois
Wild Flower Preservation Society, 3740 Oliver Street, Washington, D. C.

### Stereographs and Stereoscopes

Keystone View Company, Meadville, Pennsylvania

### Maps, Charts and Globes

National Geographic Society, Sixteenth & M Streets, N. W., Washington, D. C.
A. J. Nystrom & Company, 3333 Elston Avenue, Chicago, Illinois
Weber Costello Company, Chicago Heights, Illinois

### Slide-Making Materials

Eastman Kodak Company, Rochester, New York
Keystone View Company, Meadville, Pennsylvania
Society for Visual Education, Inc., 100 East Ohio Street, Chicago 11, Illinois
W. M. Welch Manufacturing Company, 1515 Sedgwick Street, Chicago, Illinois
Williams, Brown & Earle, Inc., 918 Chestnut Street, Philadelphia, Pennsylvania

### Photographs and Prints

Art Education, Inc., 6 East 34th Street, New York City
Artext Prints, Inc., Westport, Connecticut
The Colonial Art Company, 136 North West First Avenue, Oklahoma City, Oklahoma
Informative Classroom Pictures, 40 Ionia, North West, Grand Rapids, Michigan
The Instructor Magazine, Normal Park, Dansville, New York
National Studios, Inc., 145 West 45th Street, New York City
The Perry Pictures Company, Malden, Massachusetts
Rand McNally and Company, 111 Eighth Avenue, New York City
United States Departments and Bureaus, such as the Department of Agriculture, Soil Conservation Service, Forest Service, Department of the Interior, National Park Service, Bureau of Reclamation, Office of Indian Affairs, Department of State, and Department of Labor, Washington, D. C.
Universal Map Company, 22 Park Place, New York City
Wild Flower Preservation Society, 3740 Oliver Street, Washington, D. C.

# APPENDIX C

## SOURCES OF EQUIPMENT

The sources mentioned below are not complete but do list the most prominent manufacturers of the various types of equipment used most among schools, churches, and other training organizations.

### 16 mm. Motion Picture Projectors

Ampro Corporation, 2835 North Western Avenue, Chicago 18, Ill.
Bell & Howell Company, 7000 McCormick Road, Chicago, Illinois
DeVry Corporation, 1111 Armitage Avenue, Chicago, Illinois
Eastman Kodak Company, Rochester, New York
Forway Corporation, 245 West 55th Street, New York 19, N. Y.
Holmes Projector Company, 1815 Orchard Street, Chicago 14, Ill.
Movie Mite Corporation, Kansas City 6, Missouri
Natco, 4401 West North Avenue, Chicago 39, Illinois
Radio Corporation of America, RCA-Victor Division, Camden, N. J.
Revere Camera Company, 320 East 21st Street, Chicago 16, Ill.
Victor Animatograph Corporation, Davenport, Iowa

### 16 mm. Motion Picture Cameras

Bell & Howell Company, 7000 McCormick Road, Chicago, Illinois
Eastman Kodak Company, Rochester, New York
DeVry Corporation, 1111 Armitage Avenue, Chicago, Illinois
Mitchell Camera Company, 665 North Robertson Blvd., West Hollywood, California

### Film Splicing, Rewinding and Editing Equipment

Bell & Howell Company, 7000 McCormick Road, Chicago, Illinois
Craig Movie Supply Company, Los Angeles, California
DeVry Corporation, 1111 Armitage Avenue, Chicago, Illinois
Eastman Kodak Company, Rochester, New York

### Filmstrip Projectors

American Optical Company, Instrument Division, Buffalo, N. Y.
Ampro Corporation, 2839 North Western Avenue, Chicago 18, Ill.
Argus Corporation, Ann Arbor, Michigan
Bausch & Lomb Optical Company, 7000 McCormick Road, Chicago, Illinois
Bell & Howell Company, 7000 McCormick Road, Chicago, Illinois
Society for Visual Education, Inc., 100 East Ohio Street, Chicago 11, Illinois
Viewlex Inc., Long Island City 1, New York

## Filmstrip Cameras

Ansco Corporation, Binghamton, New York
Argus Corporation, Ann Arbor, Michigan
Bell & Howell Company, 7000 McCormick Road, Chicago, Illinois
Eastman Kodak Company, Rochester, New York
E. Leitz, Inc., 730 Fifth Avenue, New York City

## Sound Slidefilm Projectors

Magnavox Company, Inc., Fort Wayne, Indiana
O. J. McClure Talking Pictures, 1115 West Washington Street, Chicago, Illinois
Operadio Manufacturing Company, St. Charles, Illinois
Society for Visual Education, Inc., 100 East Ohio Street, Chicago 11, Illinois

## Stereo Projectors

Society for Visual Education, Inc., 100 East Ohio Street, Chicago 11, Illinois

## 3¼" x 4" Slide Projectors

American Optical Company, Instrument Division, Buffalo, N. Y.
Bausch & Lomb Optical Company, Rochester, New York
Charles Beseler Company, 60 Badger Avenue, Newark 8, N. J.
Golde Manufacturing Company, 1214 West Madison Street, Chicago 7, Illinois
Keystone View Company, Meadville, Pennsylvania

## Slide-Making Materials

Chicago Apparatus Company, 1735 North Ashland Avenue, Chicago, Illinois
Eastman Kodak Company, Rochester, New York
Keystone View Company, Meadville, Pennsylvania
New York Scientific Supply Company, 28 West 30th Street, New York City
Society for Visual Education, Inc., 100 East Ohio Street, Chicago 11, Illinois

## Opaque Projectors

American Optical Company, Instrument Division, Buffalo, N. Y.
Bausch & Lomb Optical Company, Rochester, New York
Charles Beseler Company, 60 Badger Avenue, Newark 8, N. J.

## Spot and Flood Lights

Brenkert Light Projector Company, 7348 St. Aubin Avenue, Detroit, Michigan
General Electric Company, Schenectady, New York
Golde Manufacturing Company, 1220 C. W. Madison Street, Chicago 7, Illinois
Kleigl Brothers, 321 West 50th Street, New York City
National Theater Supply Company, 90 Gold Street, New York City
Neumade Products Corporation, 427 West 42nd Street, New York City
Weaver Manufacturing Company, 1639 East 102nd Street, Los Angeles, California

## Tripods and Accessories

Bell & Howell Company, 7000 McCormick Road, Chicago, Illinois
Craig Movie Supply Company, Los Angeles, California
Eastman Kodak Company, Rochester, New York
DeVry Corporation, 1111 Armitage Avenue, Chicago, Illinois

## Projection Screens

Da-Lite Screen Company, 2711 North Pulaski Road, Chicago 39, Illinois
Eastman Kodak Company, Rochester, New York
National Theater Supply Company, 90 Gold Street, New York City
Radiant Manufacturing Corporation, 1215 South Talman Avenue, Chicago 8, Illinois
Raven Screen Corporation, 314 East 35th Street, New York City
Society for Visual Education, Inc., 100 East Ohio Street, Chicago 11, Illinois

## Dark Window Shades

Luther O. Draper Shade Company, Spiceland, Indiana
Beckley-Cardy Company, 1631 Indiana Avenue, Chicago, Illinois

## Acoustical Products

Armstrong Cork Company, Lancaster, Pennsylvania
Atlantic Gypsum Company, Boston, Massachusetts
The Celotex Company, 919 North Michigan Avenue, Chicago, Ill.

## Microphones

American Microphone Company, Los Angeles, California
Ampro Corporation, 2839 North Western Avenue, Chicago, Illinois
Astatic Laboratories, Inc., Youngstown, Ohio
Bell & Howell Company, 7000 McCormick Road, Chicago, Illinois

Brush Development Company, Cleveland, Ohio
Radio Corporation of America, RCA-Victor Division, Camden, New Jersey
Shure Brothers, Chicago, Illinois
Western Electric Company, 250 West 57th Street, New York City

## Phonographs

Emerson Radio & Phonograph Corporation, New York City
Farnsworth Radio & Television Company, Fort Wayne, Indiana
Magnavox Company, Inc., Fort Wayne, Indiana
New comb Audio Products Company, Hollywood 38, California
Philco Radio & Television Corporation, Philadelphia, Pa.
Radio Corporation of America, RCA-Victor Division, Camden, New Jersey

## Recorders

Allied Radio Corporation, 833 West Jackson B.vd., Chicago 7, Illinois. "Knight Tape Recorder"
Ampex Electric Company, 1155 Howard Avenue, San Carlos, Cal. "Ampex"
Ampro Corporation, 2835 North Western Avenue, Chicago 18, Illinois. "Ampro"
Audiograph Company, 1414 El Camino Real, San Carlos, Cal. "Model No. PR-1200"
Bell Sound System, Inc., 555 Marion Road, Columbus 7, Ohio. "Record-O-Fone"
Berlant Associates, 4917 West Jefferson Blvd., Los Angeles 16, California. "Concertone"
Brush Development Company, 3631 Perkins Avenue, Cleveland, Ohio. "Soundmirror"
Crestwood Recorder Corporation, 624 West Adams, Chicago, Illinois. "Magictape"
Eicor Inc., 1501 West Congress Street, Chicago 7, Illinois. "Eicor"
Fairchild Recording Equipment Corporation, 154th Street and 7th Avenue, Whitestone, Long Island, New York. "Fairchild"
Magnecord Inc., 360 North Michigan Avenue, Chicago, Illinois. "Model No. P17 A Recorder and P17 C Amplifier"
Mark Simpson Manufacturing Company, Inc., 32-38 49th Street, Long Island City 3, New York. "Sound Reel-Masco"
Operadio Manufacturing Company, St. Charles, Illinois. "Dukane"
Pentron Corporation, 611 West Division Street, Chicago 10, Illinois. "Model No. T-3-5"
Presto Recording Corporation, P.O. Box 500, Hackensack, N. J. "Presto"
Radio Corporation of America, RCA Victor Division, Camden, N. J. "RCA"

Rangertone, Inc., 73 Winthrope Street, Newark 4, New Jersey. "Rangertone"
Revere Camera Company, 320 East 21st Street, Chicago, Illinois. "Revere"
Sonar Radio Corporation, 59 Myrtle Avenue, Brooklyn, New York. "Sonar"
Stancil-Hoffman Company, 1016 North Highland Avenue, Los Angeles. "Minitape"
Universal Moulded Products Corporation, Bristol, Virginia. "Reelest"
Webster Electric Company, Racine, Wisconsin. "Ekotape"

## Sound Amplifying Equipment

Bell & Howell Company, 7000 McCormick Road, Chicago, Illinois
Jensen Radio Manufacturing Company, 6601 South Laramie Avenue, Chicago, Illinois
Magnavox Company, Inc., Fort Wayne, Indiana
Radio Corporation of America, RCA-Victor Division, Camden, N. J.
Stromberg-Carlson Manufacturing Company, 100 Carlson Road, Rochester, New York
Universal Microphone Company, Inglewood, California

# APPENDIX D

## AUDIO-VISUAL MATERIALS AND SOURCES

### Sound Records for Filmstrips

Irving Caesar's Sing a Song of Safety, Filmstrip, sound
Popular Science Publishing Company
353 Fourth Avenue, New York 10, New York

Irving Caesar's Sing a Song of Friendship, Filmstrip, sound
Popular Science Publishing Company
353 Fourth Avenue, New York 10, New York

Steps to Mastery of Words - Read-More - Spell-More
Nadine Fillmore, Supervising Teacher, Indiana State Teachers College, Terre Haute, Indiana. Ten recorded lessons for teaching the sounds.

Little Songs on Big Subjects, Ted Cott, vocals by the Jesters
Public Service Records, Argosy Music Corporation, 1650 Broadway, New York 19, New York

You Are There, produced and directed by Robert Lewis Shayon. The Signing of the Magna Charta, June 19, 1215. The Battle of Gettysburg, July 3, 1863. Reported by C.B.S. correspondents in the Columbia Broadcasting System's radio programs, with John Daly, Ken Roberts, Don Hollenbeck, Quincy Howe, Richard C. Hottelet, Ned Calmer. Columbia LP record, 33 1/3.

American Bird Songs, Comstock Publishing Company, Inc., Ithaca, New York. Birds of the Northwoods, Birds of the Fields and Prairies, Birds of Northern Gardens and Shade Trees, North American Game Birds, Birds of Southern Woods and Gardens, Birds of Western North America.

### Transcriptions

American Legion - Decision Now - "Return to School," "Miss Pringle Takes a Bow," for broadcast week of August 22, 1948. Produced at NBC Radio-Recording Division, A Wor Veritone Process Transcription. Child Safety - "Watch Out For Us," - Disabled Veterans - "Journey Into a Strange Land," Discovery Day (October 12) "The Seagull," V-Day (August 14) "A Day to Remember," National Aviation Day (August 19) "Quest Unending," America At Sea - "The Ships We Never Built," America At Sea - "The Belt of Steel," War Trophies - "Booby Traps," "The Prince of Pandemonium," Boys' Clubs - "Wise Guy," Navy Day

(October 27) - "Davey Jones's Locker" Constitution Day (August 19) - "The Little Lion," Campus Babies - "The Sun, Wind and the Flame".

Society for Visual Education, Inc., Chicago, Ill. Instruments of the orchestra - "Strings, Woodwinds, Brass, Percussions."

General Electric - Research Laboratory, Schenectady, N. Y. Excursions in Science - "Science & The Paper Industry." "Ventilated Clothing," "Science & Its Impact On Society." "The Salvage of Coal Silt." "Comparison of English and American Research." "How Long Will You Live," "Frequency and Bandwidth." "The Oneonta Science Congress." "Project Cirrus." "Visual Science Education."

Harding College - Department of Popular Education, Searcy, Arkansas. "The Land of the Free" - drama with comment by Dr. Benson, story of Joseph W. Frazer, veteran automobile builder who has successfully invaded the motor car field. "Story of Rebecca Lukens" - woman president of largest steel plate mill in the world. "Story of Nell Donnelly" - dress manufacturer who turned a remarkable early sewing talent into a ten million dollar housedress business. "Story of Edward A. Deeds" - national cash register head whose early curiosity about gadgets, as an Ohio farm boy, led him later to invent invaluable time-saving devices for the business world.

## Local Film Service

The Mountain States Telephone and Telegraph Company, 121 East Broadway, Missoula, Montana
United States Forest Service, Federal Building, Missoula, Mont.
Kraabel Chevrolet Company, 301 West Broadway, Missoula, Mont.
Montana Power Company, Masonic Temple Bldg., Missoula, Mont.
Union Oil Company, 402 East Broadway, Missoula, Mont.

## APPENDIX E

### EXAMPLE OF A COMPLETED EVALUATION FORM*

Name of film_____

Evaluator_____

Organization_____

### I. Extent and Duration of Usefulness

1. Will groups associated with your school find this film useful in their program?

   Very useful_____Of some use_____Of no use_____

2. How long will this film be useful to your groups?

   One year_____Two years_____Indefinitely_____

### II. Quality of Film as Communication

1. Is the film's story told in such a way that its human significance is brought out?

   0___1___2___3___4___5___6___7___8___9___10___
   Very low Very high

   Specific comments:_____

_____

_____

_____

_____

_____

*This Evaluation Questionnaire is adapted from an experimental form developed in the Audio-Visual Laboratory, Institute of Adult Education, Teachers College, Columbia University.

2. Does the film tell its story clearly?

0___1___2___3___4___5___6___7___8___9___10___
Very low Very high

Specific comments:_____

_____

_____

3. Is the film's story effectively dramatized?

0___1___2___3___4___5___6___7___8___9___10___
Very low Very high

Specific comments:_____

_____

_____

4. How well do you think the film would make the class for whom it seems to be intended feel a personal concern with the situations it presents?

0___1___2___3___4___5___6___7___8___9___10___
Very low Very high

Specific comments:_____

_____

_____

5. Is the film appropriate in its story, picturization, language and attitudes for the class it is intended to reach?

0___1___2___3___4___5___6___7___8___9___10___
Very low Very high

Specific comments:_____

_____

_____

6. Is the film sufficiently fair and complete not to mislead its audience in regard to matters of fact or inference?

0___1___2___3___4___5___6___7___8___9___10___
Very low Very high

Specific comments:_____

_____

_____

## III. Uses of Film

1. This film might be of interest to classes concerned with:

_____

_____

2. How well does this film teach a skill?

0___1___2___3___4___5___6___7___8___9___10___
Very low Very high

Specific comments:_____

_____

_____

3. How valuable is this film as a source of information?

0___1___2___3___4___5___6___7___8___9___10___
Very low Very high

Specific comments:_____

_____

_____

4. How provocative is this film of thought, discussion or controversy?

0___1___2___3___4___5___6___7___8___9___10___
Very low Very high

Specific comments:_____

_____

_____

5. How useful is this film for arousing interest or motivating action?

0___1___2___3___4___5___6___7___8___9___10___
Very low Very high

Specific comments:_____

_____

_____

To secure evaluation score: add the six ratings given under II. Quality of Film as Communication. Then add to this sum the one highest rating given under III. Uses of Film.

Communication ratings: 1____

2____

3____

4____

5____

6____

Use rating: ____

Total ____ out of a possible 70

## APPENDIX F

## FILM RECORD CARD

Subject:_____

Film Title:_____Time_____Unit:____

Grade:_____Source:_____Cost:____

General Ideas:_____Problems:_____

_____

New Words:_____

Questions to be checked:_____

_____

_____

Notes:_____

APPENDIX G

NOTICE TO 16mm OPERATORS

Please let the next operator know by this method.

_____Check here if any leader breakage.

_____Check here if any main body breakage.

Place in film container to let the next operator know the condition of film. Do not use Scotch Tape to mend the film, but use a Paper Clip. Return to Central if all possible for repair.

## APPENDIX H

## REQUISITION FOR STRIP FILM

Teacher_____ School_____ Date_____

| FILM NO. | FILM TITLE | RETURN DATE |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

APPENDIX I

MISSOULA PUBLIC SCHOOLS USE OF THE STRIPFILM PROJECTOR S.V.E.

| TEACHER | GRADE | DAY | TIME | FILM NUMBER |
|---|---|---|---|---|
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| 5. | | | | |
| 6. | | | | |
| 7. | | | | |
| 8. | | | | |
| 9. | | | | |
| 10. | | | | |
| 11. | | | | |
| 12. | | | | |
| 13. | | | | |
| 14. | | | | |
| 15. | | | | |
| 16. | | | | |
| 17. | | | | |
| 18. | | | | |
| 19. | | | | |
| 20. | | | | |

APPENDIX J

TABLE I

AUDIO-VISUAL EQUIPMENT AVAILABLE
1951-52

| | Available |
|---|---|
| Projectors, 16mm | 4 |
| Projectors, filmstrip | 14 |
| Projectors, opaque | 2 |
| Projectors, keystone | 12 |
| Phonographs | 12 |
| Tape recorders | 2 |
| Wire recorders | 3 |
| Filmstrips | 940 |
| 16mm. film | 1 |
| Slides, keystone | 600 |
| Slides, 2" x 2" | 60 |
| Microphones | 5 |
| Microphone stands | 5 |
| Spotlights | 2 |
| Screens | 24 |
| Slide changer | 1 |
| Table viewer | 1 |
| Radios | 12 |
| Study guides, filmstrips, each subject | 84 |
| Study guides, 16mm., each week | 150 |
| Splicer, 16mm. | 1 |
| Splicer, tape | 1 |
| Lamps, 16mm. | 10 |
| Lamps, filmstrip | 12 |
| Lamps, spotlight | 4 |
| Lamps, keystone | 4 |
| Lamps, school movies | 4 |

## APPENDIX K

## MONTANA SOURCES OF AUDIO-VISUAL MATERIALS AND EQUIPMENT

Mr. Harry Cooley
Northern School Supply Co.
Great Falls, Montana

Mr. Al Madson
Colborn School Supply Co.
Billings, Montana

Mr. Clyde Tipton
Crescent Movie Supply
Helena, Montana

Mr. Roy M. Austin
Helena, Montana
Box 1707

Mr. Harry A. Norton
State Supervisor
Visual Education
Office of State Superintendent
of Public Instruction

Mr. Pierre Taylor
1600 South 3rd West
Northern School Supply Co.
Missoula, Montana