

AN ABSTRACT OF THE THESIS OF

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Title AN INVESTIGATION OF AUDIO-VISUAL EDUCATION WITH EMPHASIS ON  
BRITISH COLUMBIA-----

Abstract Approved [REDACTED]  
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This survey was undertaken with the hope that audio-visual education in British Columbia can be improved and extended. The survey was carried out during the fall of 1942 by means of personal interview and questionnaire. The total returns received on the questionnaire and interviews was 66.22 percent of the 820 schools used in the survey. In British Columbia, organized audio-visual education has been carried on for about ten years and has developed rapidly.

There are two audio-visual lending libraries, one operated by the University of British Columbia, Extension Department and the other by the Vancouver School Board, Visual Education Department. The Canadian Broadcasting Corporation presents a daily school broadcast over the provincial network. Little or no emphasis has been placed on audio-visual education in the teacher training institutions of the province.

Sound motion picture projectors are used in 25.25 percent of the schools replying to the questionnaire. Silent projectors are used in 9.58 percent of the schools, chiefly those which do not have sound projectors. Most of the schools borrow their films from the Vancouver School Board and the University of British Columbia. About sixty percent of the screens owned by the schools are flat white. Lantern slide projectors are used in 18.05 percent of the schools, which own a total of 4800 slides. The film strip projector is most popular, there being 37.39 percent of the schools with this type of projector. Only 10.82 percent of the schools own an opaque projector. The radio is used for instructional purposes in 49.81 percent of the schools. Only six schools use stereoscopes. There are 33.89 percent of the schools with flat picture libraries averaging 543 pictures per library.

Only 13.44 percent of the schools replying to the questionnaire had a director or person in charge of audio-visual education. Practically all the schools ordered their audio-visual materials as required. About one-half of the schools, other than the Vancouver schools, had a budget for audio-visual education, with an average budget of \$26.25 per school. Fifteen lantern slide and five silent projectors, all in good condition, were not being used. Ten percent of the schools had in-service teacher training in audio-visual education. The teachers as a whole considered that film strips and flat pictures were the best audio-visual aids. Seventy-three percent of the schools using audio-visual materials pre-

viewed, and sixty percent kept records of the aids used. The new equipment which most schools would like to have were the film strip and sound projector.

From the results of the survey the writer makes the following recommendations. The teachers of British Columbia must be made to realize that silent films are in many cases just as effective as sound films. A plan must be worked out whereby projectors would be available to all schools. The  $3\frac{1}{2}$ "x4" glass slides should not be discarded as they are a useful aid which can be readily prepared by the teacher. The 2"x2" glass slide should be more extensively used since they are an excellent teaching aid because they are of convenient size and easily produced. Since the film strip projector is used extensively in the British Columbia schools, they should be encouraged to start collections of the more frequently used film strips. The opaque projector should prove especially valuable in the elementary schools because of its ability to show a wide variety of flat pictures and specimens. Electrical transcriptions should become more popular in the schools since they can be used to present programs which were broadcast at a time inconvenient for use in the classroom. Recording devices should be purchased by the audio-visual libraries and be rented to the schools for speech correction and the recording of special features. If the radio is to be used effectively for instruction the teacher must be trained in the proper methods of using the programs. The school broadcasts should be prepared by committees of teachers and not by persons unfamiliar with the school curriculum. The British Columbia Department of Education should set up a Provincial Department of Audio-Visual Education. A large central library with several branches should be established in charge of a well trained personnel. The minimum grant for audio-visual education should be fifty cents per pupil. The teacher training institutions should offer a compulsory course in audio-visual education for teachers. The in-service teachers should be trained by the directors in the individual schools and by conferences with the provincial supervisor. It is important that every school should have a director or person in charge of the audio-visual program. At least one room should be well equipped for audio-visual education. The students should be used in the audio-visual program both in the operation of equipment and the keeping of records.

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AN INVESTIGATION  
OF AUDIO-VISUAL EDUCATION  
WITH EMPHASIS ON BRITISH COLUMBIA

by

MYLES HOUSTON RITCHIE

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## CHAPTER I

### INTRODUCTION AND CONSIDERATIONS

AN INVESTIGATION OF AUDIO-VISUAL EDUCATION  
WITH EMPHASIS ON BRITISH COLUMBIA

CHAPTER I

INTRODUCTION AND CONSIDERATIONS

Audio-visual education has held an important position in the field of education from the earliest of time. In fact, during the Middle Ages, prior to the invention of the printing press, visual education was probably at a high level. During this period we had the churches with their magnificent stained glass windows, which taught their lessons by visual imitation. In addition, painting and sculpturing were the only methods of teaching, other than verbalism. With the invention of the printing press and the use of the printed book it became necessary to use various visual aids, such as wood cuts, colored drawings, photostatic plates, etc., to illustrate the book and make it more meaningful and interesting. Today the motion picture brings entertainment and education to us through an audio-visual channel. Man is able to grasp ideas through audio-visual methods better than reading or by verbalism.

Purpose of the Study

Since audio-visual methods are of great importance in teaching, the writer decided that a survey should be made to determine the amount of equipment, material, money, and time that has been devoted to audio-visual aids in the British Columbia School System; and also, to get the reactions of the educators and administrators as to the

relative value of the various audio-visual aids in the classroom.

At the present time there is no central audio-visual department in connection with the Provincial Government Department of Education, at Victoria, British Columbia. In Canada, each province has its own educational system and, in British Columbia, this is centered at Victoria.

There are only two large audio-visual libraries in British Columbia, which distribute material to the whole province, and both are located in Vancouver. They are operated by the Vancouver School Board and the University of British Columbia Extension Department. As Vancouver is located in the southwest corner of this large province, there are a large number of the schools at a great distance from these centers.

The schools are served by a series of radio programs over the British Columbia stations of the Canadian Broadcasting Corporation. These broadcasts are arranged by a number of school administrators, while the actual broadcasts are prepared and presented by professionals, who are entirely divorced from the schools.

As audio-visual education is still in its infancy in this province, there are a large number of teachers without any training in this field. Unless this phase of the work is undertaken, very little progress can be expected in years to come. Teachers will continue to look on audio-visual aids either as a means of entertainment to fill in spare periods, or as being too much trouble to use.

The financial outlay involved in the setting up of an audio-visual



program is so great that a large percentage of the schools probably cannot afford even to consider such an expenditure. The rural schools are dependent upon money raised through taxes and usually this amount is so small that the purchase of visual equipment is entirely out of the question.

Another problem which is seldom considered is the selection of a desirable room for the projection of visual materials. Films are usually shown in the classroom, or the various interested grades of the school are assembled in the auditorium for the program. If a room is set aside for audio-visual education, very little thought is given to the comfort or the health of the pupils. More consideration should be given to the pupil's vision during the showing of films. There are certain criteria which should be followed in the selection of a room for the projection of pictures, the reception of radio programs, and the playing of records for music appreciation.

The fact that each audio-visual aid has its own advantages and disadvantages is not fully understood by the majority of the teachers and administrators. Most educators feel that unless they have a sound motion picture projector that they are not putting on an adequate audio-visual program. This is entirely a false impression as expensive equipment is not necessary for the presentation of an effective program. Less expensive equipment, in the hands of a well trained teacher, can be much more effective as a teaching aid, than elaborate equipment improperly used.

The writer feels that there should be a more unified program of

audio-visual education to serve the whole province. Assistance should be given to administrators in the setting up of effective audio-visual programs in their schools. Teachers need to be trained in the proper use of audio-visual aids. It is with these ideas in mind that this investigation was undertaken.

### Definitions

Audio-visual education is the method of instruction based upon the psychological principle that one has the best perception and consequent conception of the things he actually sees and hears.

Audio-visual aids include all materials and equipment used in the classroom to facilitate the understanding of the written or spoken word.

Audio-visual materials are the models, specimens, pictures, slides, films, records, and so forth, used in percetial learning.

Audio-visual equipment is that equipment used in the classroom for the projection of pictures, the observation of specimens, the playing of records, and the reception of radio programs, that is, the equipment necessary for the presentation of audio-visual materials.

### The Survey

A survey was carried out in the British Columbia school system during the fall of 1942, the data and information being taken up to the end of the school year, August 31, 1942. Permission was

obtained from the Department of Education, Victoria, British Columbia, and principals or directors of audio-visual education of the high schools, junior high schools, superior schools, and elementary schools were questioned regarding the audio-visual program in their schools. In addition, Dr. Gordon Shrum, Director of the University of British Columbia Extension Department, and Miss Partridge, Secretary of the Vancouver School Board Visual Education Department, were interviewed and information obtained concerning their departments, equipment, and circulations. Also Mr. Kenneth Caple, Director of School Broadcasts for British Columbia, gave details of his organization. Dr. V. L. Denton and Mr. A. R. Lord, the principals of British Columbia's two Normal Schools at Victoria and Vancouver respectively, and Dr. M. A. Cameron, Head of the Department of Education, University of British Columbia, were interviewed about teacher training in audio-visual techniques. Mr. Faulkes of General Films Incorporated and Mr. Rundle of Dunn and Rundle, distributors of Victor and Spencer, and Bell and Howell equipment respectively, were interviewed with regard to the sale of equipment in the province.

#### Characteristics of British Columbia

In Canada, as there is no central administrative body for education, each province controls its own educational system. The Department of Education for British Columbia is located in the capitol of the province, Victoria. The department is headed by the Minister of Education, elected by the people and usually a member of the party in power. Appointed under him is the Superintendent of Education,



who is the administrator of the department. The Department of Education receives from the Provincial Treasury a grant for the carrying out of the educational program of the province. The department shares in part the salary of each teacher in the province. In addition, each city, municipality, or rural district collects taxes and makes up the balance of the cost of education in the community.

The area of British Columbia is very large and the population is small and scattered, necessitating a large number of one room rural elementary schools. These rural districts are hardly able to pay the balance of their teacher's salary, let alone purchase audio-visual aids.

The province is very mountainous and this presents a great difficulty in the reception of radio broadcasts due to dead areas where reception is impossible. To overcome this the Canadian Broadcasting Corporation has established a number of small repeater stations of fifty watts each in some of these dead areas, but to cover the whole province for adequate school reception would require many more of these stations.

There are a large number of rural schools not serviced with electricity and they would require a generator for the operation of projection equipment. This would greatly increase the cost of the audio-visual program in these schools.

Due to infrequent transportation service to many of the schools in the province, several weeks may elapse before the audio-visual aids reach the school and can be returned to Vancouver. This is unprofit-



able to the lending library, and at the same time denies other schools the use of the aid. Most of the schools in these remote areas are unable to borrow films regularly as the transportation costs are excessive.

In recent years the educational system of British Columbia has undergone a progressive revision and the new curriculum is easily adaptable to a program of audio-visual education.

#### Sources of Data

This study was carried out by means of personal interview and questionnaire. During the month of September 1942, the writer personally interviewed the principals or directors of visual education in the schools shown in Table I.

TABLE I

#### Schools Personally Visited

Type	City	Dist.Mun.	Rural Dist.	Comm.Dist.	Total
High Schools	20	10	-	-	30
Junior High Schools	12	8	-	-	20
Superior Schools	-	1	-	-	1
Elementary Schools	77	20	-	-	97
Totals	109	39	-	-	148

In addition to the above schools the following persons were interviewed.

Dr. Gordon Shrum	- University of British Columbia, Extension Department
Miss M. Partridge	- Vancouver School Board, Visual Education Department
Dr. M. A. Cameron	- University of British Columbia, Department of Education.
Mr. A. R. Lord	- Vancouver Normal School
Dr. V. L. Denton	- Victoria Normal School
Mr. Kenneth Caple	- Canadian Broadcasting Corporation
Mr. A. S. Towell	- Inspector of Schools, Abbotsford, Matsqui, Sumas Educational Administrative Area
Mr. T. W. Hall	- Department of Education, Victoria
Mr. Faulkes	- General Films Incorporated
Mr. Rundle	- Dunn and Rundle

At the end of September the questionnaire, " Report on Audio-Visual Aids " and an explanatory letter, which are shown in Appendix A, were forwarded to those schools which had not been visited.

TABLE II

Schools to which Questionnaire "Report on Audio-Visual Aids" was Mailed

Type	City	Dist.Mun.	Rural Dist.	Comm.Dist.	Total
High Schools	24	12	54	-	90
Junior High Schools	11	5	9	-	25
Superior Schools	-	4	39	-	43
Elementary Schools	39	139	323	13	514
Totals	74	160	425	13	672

The table shows that the questionnaire, "Report on Audio-Visual Aids" was mailed to 323 rural district elementary schools, that is to one-half of the 646 schools which were in operation. These schools were selected by lot, taking one-half of the total schools in each of British Columbia's forty electoral districts.

At the beginning of November, a follow-up letter and a copy of the questionnaire were mailed to each of the schools from which there had been no reply. A copy of the follow-up letter is shown in Appendix A.

#### Results of the Questionnaire

The total returns received on the questionnaire, "Report on Audio-Visual Aids", together with the reports from schools visited personally amounted to 66.22 percent of the 820 schools used in the survey. Plate I presents a map of British Columbia showing the

distribution of schools replying to the questionnaire "Report on Audio-Visual Aids". The number of returns and the total number of schools which were visited or to which the questionnaire was sent, along with the percent replies, are shown in Table III.



# BRITISH COLUMBIA.

## THE DISTRIBUTION OF SCHOOLS ANSWERING "REPORT ON AUDIO-VISUAL AIDS."

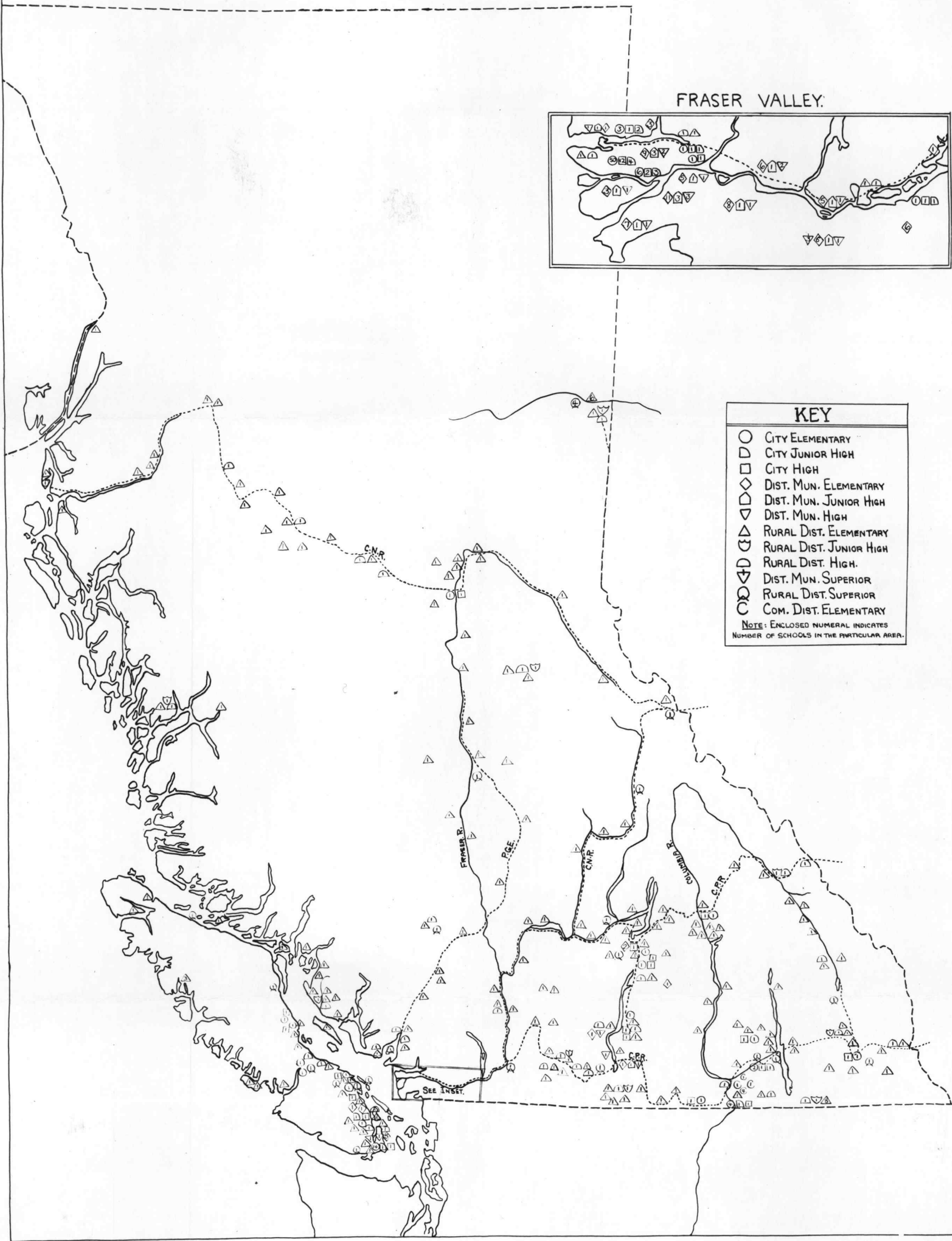


TABLE III

TOTAL SCHOOLS REPLYING TO INTERVIEWER OR "REPORT ON AUDIO-VISUAL AIDS" AND TOTAL SCHOOLS TO WHICH REPORT WAS SENT

Type of School	City			District Municipal			Rural District			Community District			Total		
	Replies	Total	Percent	Replies	Total	Percent	Replies	Total	Percent	Replies	Total	Percent	Replies	Total	Percent
High	35	44	79.55	18	22	81.82	37	54	68.52	-	-	-	90	120	75.00
Junior High	18	23	78.26	13	13	100.00	9	9	100.00	-	-	-	40	45	88.89
Superior	-	-	-	3	5	60.00	25	39	64.10	-	-	-	28	44	63.64
Elementary	105	116	90.52	85	159	53.50	188	323	58.20	7	13	61.62	385	611	63.01
Total	158	183	86.34	119	199	59.80	259	425	60.94	7	13	61.62	543	820	66.22

The percent reply to the questionnaire "Report on Audio-Visual Aids" was very satisfactory. In the National Education Association Research Bulletin "The Questionnaire"<sup>1</sup>, the average median of replies on all types of questionnaires was shown to be 69.00 percent. However, where the questionnaires were sent out by a graduate student, the average median was lowered to 60.40 percent. It was further pointed out that as the number of items in a questionnaire increased the percent of replies decreased. For questionnaires with more than one hundred items the median of replies was 54.30 percent, but this would be proportionately lowered in the case of a questionnaire sent out by a graduate student. In view of the above findings the 66.22 percent reply to the questionnaire used in this study, which included one hundred and seventeen items, was exceptionally good.

Toops<sup>2</sup> stated that when a questionnaire was sent out and a number did not reply, we can conclude that the average of those replying will hold for those not received. In view of this, the schools which replied can be considered representative of the various types.

#### Types of British Columbia Schools

The schools of British Columbia are divided into four groups; City, District Municipal, Rural District, and Community District. There are four types of schools; senior high, junior high, superior,

<sup>1</sup>National Education Association. The questionnaire. Research Bulletin 8, January 1930, pp. 1-51.

<sup>2</sup>Toops, Herbert A. Returns from follow-up letters to questionnaires. Journal of Applied Psychology 10, March 1926, pp. 92-101.



and elementary. The senior high schools start at grade X, where they are connected with a junior high school system, or otherwise at grade IX. In both cases they carry on to grade XII, except where the school offers senior matriculation, grade XIII, which is equivalent of first year university. Junior high schools are from grade VII to IX; superior schools from grade I to X; and elementary schools start at grade I and terminate at the end of grade VI or VIII depending on whether or not there is a junior high school.

#### Limitations of the Survey

In this survey the principals of 820 of the 1143 schools in British Columbia were interviewed or received the questionnaire "Report on Audio-Visual Aids". As stated previously, the questionnaire was mailed to one-half of the rural district elementary schools. If all of these schools had received the questionnaire, the results would probably have been more complete. Kelly<sup>3</sup> states, "Lack of demonstrable fairness in the sample is probably the greatest shortcoming of the questionnaire".

Although 66.22 percent is a good return on a questionnaire of this type, it would have been more satisfactory if it had been 100 percent. It was not necessary that the percentages be carried out to two places beyond the decimal point, as was done throughout the study because the error in the data more than offset this degree of accuracy

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<sup>3</sup>Kelly, Truman L. Scientific method-its function in research education  
p. 81



The interpretation of the questions by the principals may not have been always accurate and therefore their answers may not have been completely correct. If it had been possible to interview every principal the final results would have been more nearly perfect.

This study is further affected by the inherent weaknesses of questionnaires, in that some respondents might have given inadequate answers either because of lack of handy data or because of lack of interest.

### Summary of Chapter I

In this introductory chapter the writer has outlined generally, the condition of audio-visual education in British Columbia. This survey was undertaken with the hope that audio-visual education in the province can be improved and extended. The survey was conducted during the fall of 1942 by means of personal interview and questionnaire.

CHAPTER II

HISTORY OF AUDIO-VISUAL EDUCATION

## CHAPTER II

## HISTORY OF AUDIO-VISUAL EDUCATION

In all probability visual education began in the Stone Age, when the paleolithic men hewed out their picture writing on the walls of their caves. This was truly an expression of their ideas in pictorial form.

In ancient India we had the use of sand in which teachers drew illustrations of problems which they were solving.

The first writing was in the form of pictures or pictographs. The Egyptian hieroglyphics seem to have been at first only a series of pictures, which later were gradually changed to make possible more rapid writing. Chinese writing consists chiefly of pictographs some of which can be easily understood by a person who has no knowledge of their meaning.

The field trip was developed very early in the history of the world as described in Asch's, "The Nazarene":

In pursuit of our botanical studies our teachers would lead us into the fields outside the city ..... . Our Rabbi pointed out to us each species of grass, and taught us to distinguish between various groups and families. He would conduct us also to farms and acquaint us with the labors of the soil, the plowing, sowing, reaping, the fertilization of the fields, and methods of irrigation. He led us likewise into the vineyards and the olive groves; we learned how the ordinary oils are pressed in large stone mills worked by donkeys and how the more precious oils, which are destined for cosmetics or medicinal uses, are pounded out carefully in stone hand mills .... . We went, .....to the spinners, the weavers, the tanners, the dyers, and the potters. <sup>4</sup>

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<sup>4</sup>Asch, Scholem. The Nazarene, p. 427

The basic idea underlying the cinematograph, upon which all modern motion pictures are based, was developed by Lucretius (98-55 B.C.), who, in his book "De Rerum Natura", pointed out the phenomena of "persistence of vision". In 150 A.D. Ptolemy (127-205 A.D.), a Greek philosopher, wrote a series of books on optics in which he described a simple apparatus by which images could be made to appear to move.

The Middle Ages produced a great number of visual materials in the form of statues, stained glass, Gothic architecture, and paintings. All these depended on visual perception as the chief method of instruction. The printing press was then invented but this did not bring about a decline in visual education. Illustrations began to appear in books, and visual education remained an important method of teaching.

During the sixteenth century we had the philosophers deciding that there was a definite need for concreteness in teaching. One of the first writer-teachers to emphasize the need of pictures was Johann Valentin Andrea, who suggested that pictures, paintings, and diagrams should be displayed on the walls. During this century the philosophy of realism replaced the speculative philosophy of the humanists.

In the seventeenth century there was a wide use of visual materials in medicine, diplomatics, paleography, history, geography, travel, mathematics, physics, and astronomy. During this period Francis Bacon (1561-1626) and Wolfgang Rath (1571-1635) stressed that the knowledge of the thing itself must be given before that which refers



to the thing. Later John Locke ( 1626-1704 ) also stressed the value of pictures.

John Amos Comenius (1592-1671), inspired by the work of these early workers, wrote "Children must learn not only from words but also from objects along with words". He put this saying into practice when he wrote his book "Orbis Sensualism Pictus" (The World Illustrated), in which he stated his philosophy that in childhood the senses are keen, and teaching by the use of objects is very effective. This work was published in 1658 in Nuremburg, Bavaria, and contained about three hundred crude wood cuts, the beginning of textbook illustrations.

Pierre Nicole (1625-1695), a Jansenist, propounded the theory that children should be taught through their senses, that is, appeal to sight and hearing. He taught history and geography at Port Royal, using maps, pictures, globes, flashcards, etc. The school was destroyed before it had a chance to become established and show the worth of these visual materials.

Near the close of the seventeenth century in America, "The New England Primer", a picture alphabet of religious jingles, was published. This was followed in England in 1710 by the "London Spelling Book", which had pictures of the tree of knowledge as well as an illustrated alphabet. Then Dilworth in 1740 published "New Guide to the English Tongue", which included illustrations of various sayings such as; "A bird in the hand is worth two in the bush".

During the eighteenth century there was a great transition in education, the start of national education. The first of the great

leaders of the period was Jean-Jacques Rousseau (1712-1778). He connected sense-perception with things themselves out of doors, by travel and observation in actual life.

Rousseau was followed by Johann Heinrich Pestalozzi (1746-1798), who believed the sense of perception was the most helpful. At Burgdorf, he carried out in his experimental school the use of objective materials in teaching art, modelling, geography, history, and natural history.

During the early part of this century Johann Heinrich Basedow, a German scholar and teacher, advocated much the same type of teaching as Comenius. He said that everything should be taught by the use of objects, pictures, and models.

Johann Friedrich Herbart (1776-1841), following in the footsteps of Pestalozzi, set up a practice school where he carried out his ideas of education by instructing teachers in the new methods. He stressed the value of models in teaching geometry, trigonometry, and art.

Friedrich Froebel (1782-1852), continued this work and established the first kindergarten at Burgdorf in 1840. He relied on sense education to acquaint the pupils with color, form, and dimension. Montessori agreed with Froebel in the principle of the kindergarten, but had a more direct method of teaching, as well as a more elaborately equipped school.

The schools of oratory controlled education in France after the expulsion of the Jesuits in the eighteenth century. Abbe Lenglet, a product of this school gained renown as a historical, geographical, and

critical editor. He said children should learn with their ears, eyes and hands. He believed in chronology and hence his histories contain chronological tables. After his death we find a large number of illustrated books showing that the authors had realized the value of illustrations. Elie Freron recorded in a review of books published between 1754 and 1759, that a large number were illustrated.

A toy invented by Horner in 1838 called the "Cycle of Life", gave an optical illusion which was the start of the modern motion pictures. This toy consisted of a hollow cylinder, a turning wheel, and a little booklet of pictures, the leaves of which were released one by one giving an impression of motion. Then in 1861, Dr. Sellers developed the kinematoscope with which he showed a series of photographs. Edward Muybridge of England made the zoopraxoscope with which he projected moving pictures on a screen. Then Edison brought forth his kinetograph which was the forerunner of our motion picture camera.

Thus we find that audio-visual education has had a gradual development from the simple to the more complex aids of the present day. Today we are only expanding a field in education which has actually existed for a long period of time.

#### History of Audio-Visual Education in British Columbia

In British Columbia audio-visual education is in its infancy. The first motion picture machine was installed in Lord Tennyson Elementary School, Vancouver, British Columbia, in 1921. The first real attempt at organizing an audio-visual department was carried out



in the Kitsilano High Schools, Vancouver, British Columbia, in the early 1930's under the leadership of Dr. H. B. King and Mr. F. A. McLellan<sup>5</sup>.

In 1936, the Superintendent of Vancouver Schools decided that visual education was of great value and appointed a committee of five men to investigate the possibilities of setting up a visual education organization. The Department of Visual Education was started in the spring of 1936, under the leadership of Mr. J. Pollock, the present director. Since then it has grown rapidly as a distributing and production center.

In the fall of the same year the University of British Columbia started visual education under the Extension Department with Mr. Robert England in charge. There were at this time very few motion picture projectors in British Columbia, so the department decided to start with lantern slides, which they purchased from the University of Alberta. In the fall of 1937 Dr. Gordon Shrum became head of the Department of Extension. Upon looking into the high cost of transportation of the lantern slides, he decided it would be more advisable to circulate film strips.

In 1936 the Okanagan Valley Teachers' Association presented a weekly half hour music appreciation program over radio station CKOV, Kelowna, British Columbia. This body of teachers urged the Department

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<sup>5</sup>McLellan, F. A. The organization of a Visual Instruction Department in the Kitsilano High Schools, Vancouver, B.C. Unpublished Master's Thesis, University of Washington.



of Education to continue the programs; thus the Department decided to experiment with radio programs. The use of the radio for school broadcasts has greatly increased and at the present time there are five programs a week presented for the elementary schools, on varying subjects. The subjects covered are health, guidance, social studies, junior and intermediate music. The Canadian Broadcasting Corporation installed during the early part of the summer of 1942, ten small fifty watt repeater stations in areas where reception was poor, and thus reception of school broadcasts has been greatly facilitated.

In the summer of 1938 the University of British Columbia offered a two weeks course, by Dr. Morkovin of the University of Southern California, in Cinematography. Several of those who took this course got together and organized the British Columbia Institute of Cinematography. The following summer another two week course on the "Sound Film" was given by Dr. Brodshaug of the Erpi Film Company. These are the only courses which have been offered in the field of audio-visual education in British Columbia.

#### Review of Literature

In order that audio-visual instruction may become a generally accepted method of teaching in the schools, it is necessary to convince the administrators and teachers of the value of such a method. There have been many experiments carried on in the field of visual instruction during the past twenty years which show the advantages of the various audio-visual aids and techniques.

The earliest experimental study with the educational sound motion picture was carried on in Middlesex, England by a committee of teachers and administrators.<sup>6</sup> The main purpose of the study was to determine the place of the sound film in the classroom. The results indicated that most teachers agreed that this method induced greater student activity and appeared excellent for backward children. The results were not reliable but this work possibly stimulated worthwhile experimental studies in the value of sound motion pictures for educational purposes.

In 1924, the results of the University of Chicago's experimental studies, under the direction of Freeman<sup>7</sup>, indicated that there were no grounds for the belief that pictures may be substituted for language. Included in this study was the work of Rolfe<sup>8</sup> who indicated that, in physics, teacher-demonstrations were superior to the impersonal presentation of the sound film. He divided his group into four sections, equated by the use of the Army Alpha Test. The results of his experiment are shown in Table IV.

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<sup>6</sup>Committee of teachers and administrators. Sound films in schools. p. 120.

<sup>7</sup>Freeman, F. N. Visual education.

<sup>8</sup>Rolfe, E. C. A comparison of the effectiveness of a motion picture film and of demonstration, in instruction of high school physics. pp. 335-8.

TABLE IV  
Results of Rolfe Experiment

Group	Average Percent on Test	
	Verbal	Laboratory
Motion Picture	65.8	69.7
Demonstration	85.3	85.9

The similarity of the results in both cases was claimed by Rolfe as an indication of the validity of the tests. James<sup>9</sup> in the same group of studies compared the educational motion picture film to the lecture groups. Then he compared sound films with printed matter and sound films with slides and he found that the film groups again were superior.

Knowlton and Tilton<sup>10</sup> in 1929 conducted a series of experiments using photoplays in the teaching of history. The experiment compared a group taught by means of films with another taught by regular methods. The results showed that the films increased the pupils learning about nineteen percent. He also stated that an average child with the aid of these films learned as much as the bright child without them.

<sup>9</sup>James, H. W. A comparison of educational motion picture films with oral lecture, textbook study, and slides in the case of six films. pp. 221-5.

<sup>10</sup>Knowlton, D. C. and Tilton, J. W. Motion pictures in history teaching.

Then in 1928, Wood and Freeman<sup>11</sup> carried out a comprehensive experiment in which nearly 11,000 children participated. The subjects covered were geography and general science. The average gain of the film group over the non-film group was thirty-three percent.

Weber<sup>12</sup> concluded that the enrichment of instruction provided by the use of films in connection with the usual verbal instruction, ranges anywhere from five to fifty percent, the average improvement being about fifteen percent.

In 1932, Clark<sup>13</sup> of New York University concluded that sound film of the lecture type in which all explanations were given by an unseen speaker were not as effective as identical silent films in which all explanations were given by captions.

Rulon<sup>14</sup> in 1933 worked with sound motion pictures in science teaching. He divided his group into three sections; a zero group, a control group, and a film group. The zero group was used to determine the amount of previous knowledge. The results of the experiments indicated that in an immediate recall test the film group showed a 20.5 percent gain, and in a retention test given a month later the film group showed a 38.5 percent gain. Rulon concluded, "Neither of the above gains may be expected to be made at the expense of more important but less definable educational values, such as good habits

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<sup>11</sup>Freeman, F. N. and Wood, B. D. Motion pictures in the classroom.

<sup>12</sup>Weber, J. J. Visual aids in education. p. 195.

<sup>13</sup>Clark, C. C. Sound motion pictures as an aid in classroom teaching. School Review 40, 1932, pp. 669-81.

<sup>14</sup>Rulon, P. J. The sound motion picture in science teaching. p. 106.



of thinking."

Brodshaug and Brunstetter<sup>15</sup> listed four contributions of the sound film to instruction; presents reality, standardizes interpretation, allows teacher to guide learner, and saves time in presentation.

In 1934, Westfall<sup>16</sup> concluded that a teacher's explanation was better than captions. In the study he used four Erpi sound films, and four identical silent films with which the teachers gave the explanations from a script with the same wording as the sound tract of the film. The difference in the result in favor of the human voice is not significant but it would appear that the additional cost of the sound projector and sound films are not warranted, since the teacher's voice would be just as effective used along with a silent film.

Mahoney and Harsham<sup>17</sup>, in an experiment using sound film with handicapped or retarded pupils, showed that the material was better learned, also that there was an increase in interest and ability of self-expression in these students.

As the radio has been used only a short time for classroom instruction, very little experimental work has been done. Cook and Nemzek<sup>18</sup> in 1939 compared lessons taught by the radio with those

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<sup>15</sup>Brodshaug, M. and Brunstetter, M. R. Place of sound films in instruction. Education 55, October 1934, pp. 88-93.

<sup>16</sup>Westfall, L. H. Verbal accompaniment to educational motion pictures.

<sup>17</sup>Mahoney, A. and Harsham, H. L. Sound-film experiment with handicapped and retarded pupils. Educational Screen 18, Dec. 1939, p. 359.

<sup>18</sup>Cook, D. C. and Nemzek, C. L. The effectiveness of teaching by radio. Journal of Educational Research 33, October 1939, pp.105-9.

taught by the teacher. They set up two similar groups; the first listened to fifteen educational programs; the second was taught the same lesson by a teacher. The results showed no difference whatsoever between the groups. They concluded, "Lessons taught by means of the radio effect definite changes in the pupils. The materials taught by the radio method were retained at least as well as those taught in a regular classroom situation. The data indicates that instruction by radio has a definite place in pupil growth and development."

Margaret Harrison<sup>19</sup> stated that, "The classroom radio should be judged in terms of its contributions to the general educational objectives set up for the school in which it is used, rather than in terms of its contributions to specific subject matter fields."

Clarke<sup>20</sup> states that, with the radio being in practically every home, the children should be taught to discriminate in their choice of programs. He pointed out that the radio is purely a source of entertainment and interferes with home study. The teachers should recommend programs for the children, and organize groups to further discuss these programs which are heard out of school.

Stadlander<sup>21</sup> carried out an experiment with the radio in the schoolroom, which showed that reading and discussion were superior to listening, and that listening was superior to reading. Children

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<sup>19</sup>Harrison, Margaret. Radio in the classroom.

<sup>20</sup>Clarke, E. G. The use of the radio in the secondary school. Social Studies 29, April 1938, pp. 178-9.

<sup>21</sup>Stadlander, Elizabeth. A radio in the schoolroom? Educational Screen 21, January 1942, pp. 11-2.

should be taught from the early grades the proper method of learning from the radio.

Grinstead<sup>22</sup> concluded a series of experiments showing that superior pupils gain more than average pupils from a field trip. The pupils were divided into two sections; a bright group (I.Q. greater than 125) and an average group (I.Q. about 110). The excursion was compared to classroom discussion supplemented by motion pictures, flat pictures, etc. Two experiments were conducted with each group and the results showed gains in favor of the excursion, as shown in Table V.

TABLE V

## Results of Grinstead Experiments

Group	Percent Gain	
	Experiment A	Experiment B
Bright	109	58
Average	27	26

Atyeo<sup>23</sup>, in 1939, conducted two experiments on the value of the excursion as a teaching aid. He stated:

The present study undertaken to discover, analyse and in a measure evaluate, various excursion techniques with a

<sup>22</sup>Grinstead, R. W. An experimental evaluation of the school excursion. Unpublished Master's Thesis, University of Southern California, June 1929

<sup>23</sup>Atyeo, H. C. The excursion as a teaching technique.

view to making available to teachers and administrators, information which would enable them to achieve a more effective utilization of the educational opportunities which might be found inherent in the excursion technique.

He carried out two separate experiments, the first starting on September 14 and the second on October 14. In each experiment there was a control and an excursion group. The results showed that the advantage in favor of the excursion was 3.39 percent on the first date and 21.88 percent on the second. Possibly the reason for the first value being low was that the students had just entered school.

DeBernardis<sup>24</sup> concluded that film slides used in the teaching of shop allowed for individual differences. He stated, "This method was received very favorably by the pupils and many expressed a desire for more film slides. The fast students seemed to approve of this method because they were not held back by having to wait for the slow students to catch up before they could go on to the next step."

Mary Mann<sup>25</sup> pointed out that 2"x2" color slides reach all mental levels more effectively than words. The projection of a picture on a screen allows all the students to look at the same thing at the same time. The showing of slides should be accomplished by discussion of the entire class.

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<sup>24</sup>DeBernardis, Amo. The organization and construction of film slides as an aid to instruction in general shop. Unpublished Master's Thesis, Oregon State College, 1939, p. 54.

<sup>25</sup>Mann, Mary Inez. Why I use miniature color slides. Educational Screen, February 1942, p. 54.



Frank<sup>26</sup> conducted an experiment determining the effectiveness of the lantern slide in the teaching of chemistry and other sciences. His conclusions were: Students prefer to see slides and hear lecture at the beginning of the unit; a whole set of slides is better than a few slides shown at intervals; students prefer charts and diagrams to tables; one great advantage of the slide is that time can be given to master the details of an item. Slides should be prepared to aid in teaching specific items. Frank concluded, "Probable conflicting findings of investigation of the effectiveness of slides in teaching sciences are partially due to difference in the teaching value of the slides themselves."

It is not necessary to have a sound projector to have visual instruction. Models, specimens, and pictures are inexpensive visual aids which are available to all schools. Supporting this statement, Smith states:

Visual aids are expensive, there is nothing in the budget for this item. This statement is based on the mistaken idea that visual aids are superimposed on the regular instruction program - like frosting on a cake - for the purpose of entertaining pupils. Actually the use of visual aids often cuts down budget expenditures, while instruction is at the same time made more effective.<sup>27</sup>

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<sup>26</sup>Frank, J. O. An experiment in visual education. Journal of Chemical Education, 10, February 1933, p. 91.

<sup>27</sup>Smith, C. T. There's no excuse for not using visual aids. School Executive 61, September 1941, pp. 24-6.

Earley<sup>28</sup> believed that all schools should have a collection of flat pictures and that these should be used as consistently as the library. They should be chosen systematically and classified so that the pupils can easily find them.

MacLean<sup>29</sup> made a study of the relative value of colored and uncolored pictures. He concluded that, "Sets of pictures for educational purposes rather than being all colored or all uncolored, should in most cases, be mixed, the nature and purpose of each picture determining whether it should be colored or uncolored, or presented in duplicate, i.e. both colored and uncolored."

Bretnall<sup>30</sup> came to the conclusion that, "Most teachers do not use enough illustrative material and continually talk about a host of things which they never illustrate and which the students fail to understand. In general, the object itself is the best teacher, the picture is next in value, and the written or spoken description is least effective." He felt that teaching with the object is limited but the field of pictures is unlimited. These pictures can be projected by means of an opaque projector, the expense of which is offset by the abundance of available inexpensive material.

Merton<sup>31</sup> advocated that the teacher should be taught the correct

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<sup>28</sup> Earley, A. Visual instruction. School Life 26, June 1941, pp. 271-2.

<sup>29</sup> MacLean, W. P. A comparison of colored and uncolored pictures. Educational Screen 9, September 1930, pp. 196-9.

<sup>30</sup> Bretnall, G. H. Neglected phase of visual education. Educational Screen 10, April 1931, pp. 107-8.

<sup>31</sup> Merton, M. Vitalizing teaching through the correct use of the still picture. Educational Screen 16, April 1937, pp. 115-6.

techniques in using flat pictures. Pictures should be mounted and have vivid descriptions on the reverse side.

Educators differ as to the best method of training teachers in the use of audio-visual aids. Some think that there should be definite courses in audio-visual aids, others believe that audio-visual aids should be included as part of the regular courses in methods.

Yeager<sup>32</sup> states that teacher-training concerns two types of teachers, those just starting their training, and those already teaching. The former are very susceptible to new ideas, while the latter have become set in their philosophies and habits. The author outlined the course in audio-visual education required of all candidates, after 1935, for teaching certificates in the state of Pennsylvania.

Brunstetter<sup>33</sup> states that the greatest need in in-service training of teachers is efficient supervision. The supervisor should have a keen appreciation of audio-visual materials and many helpful suggestions for the teacher.

Reed<sup>34</sup> concluded that because audio-visual aids are badly misused, teachers require training in their proper use. The writer lists a number of ways in which audio-visual aids are misused by

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<sup>32</sup>Yeager, W. A. Preparing teachers in use of visual sensory aids. Educational Screen 15, 1936, pp. 74-6.

<sup>33</sup>Brunstetter, M. R. How to use the educational sound film.

<sup>34</sup>Reed, P. C. In-service teacher training in visual instruction. Educational Screen 17, 1938, pp. 86-7.



teachers: They show pictures as a reward for good behaviour; they use aids a fixed period every week; they borrow aids being used by other teachers regardless of subject matter; they assemble the whole school for a presentation.

Jayne<sup>35</sup> in 1940 set forth standards for a competent teacher using visual aids. He stressed particularly the selection of educationally worthwhile visual material, and the psychology of audio-visual aids. He felt that every teachers' college and university should offer a course in visual education.

Worrell<sup>36</sup> concluded that most teachers are not prepared to use audio-visual aids, hence there has been a decided lag in their use. He felt that there should be an in-service program to familiarize the teachers with these aids. This might be carried out by giving a short course, followed by supervision, inter-visitation, bulletins, and teachers' meetings.

Starnes<sup>37</sup> pointed out in his article that the use of audio-visual aids had not been systematic due to the lack of teacher education. He felt that too many teachers accept motion pictures as the only aid and use them as substitutes for teaching rather than as an aid in teaching. He thought all teacher training institutions should include a general

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<sup>35</sup> Jayne, C. D. Standards in teacher training in the use of visual aids. Educational Screen 19, March 1940, pp. 110, 111 and 114.

<sup>36</sup> Worrell, F. M. Establishing a program of supervised audio-visual education. Educational Screen 16, Jan. and Feb. 1937, pp. 6-8, 43-45.

<sup>37</sup> Starnes, W. G. Neglected factor in the use of audio-visual aids. Education 61, February 1941, pp. 347-9.



course in audio-visual aids, and in addition, applicable visual materials should be used in method courses.

Lemler<sup>38</sup> listed two ways in which the present core courses in audio-visual education could be improved. First, conduct a study of various visual aids with regard to their functional relationships in definite areas of instruction; second, visual instruction should include a comprehensive laboratory course.

Dickter<sup>39</sup> set forth rules to be followed by a teacher before using visual aids: The teacher should preview the film; decide the purpose for showing the film; determine the point where the film should be used; select the important parts of the film. He then listed a number of frequent errors in the use of audio-visual aids; showing unrelated films at the same time, using films where another aid would have been better, failing to have specific purpose for showing films.

Stewart<sup>40</sup> suggested that a test should be made for each film, film strip, group of lantern slides, etc., which is in the visual library. These tests, given after the showing of the material, would require the children to pay closer attention.

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<sup>38</sup>Lemler, F. L. How can we bring about better utilization of visual materials? Educational Screen 20, April 1941, pp. 153-4.

<sup>39</sup>Dickter, M. R. A technique for teaching with audio-visual aids. School Review 50, March 1942, pp. 192-5.

<sup>40</sup>Stewart, Clyde. Adapting visual aids to class routine. Educational Screen 12, March 1933, pp. 69-71.

Moore<sup>41</sup> stated that the students should be given questions of the thought type. Included in this type of questions are: those which set up problems to be solved, the "if" type, those which require recalling knowledge previously learned, and those which require application to a situation. He stated, "All questions should be worth thinking about."

Roberts<sup>42</sup> considered that it was essential to hold the pupils accountable for visual materials used in the classroom. In order to get away from the show idea, the teacher should give a stiff test after the showing of the film, and then questions should appear on the regular tests dealing with items seen in the films.

Parnes<sup>43</sup> concluded that visual aids are very good for teaching subnormal children. Parnes stated, "The realism of these aids gives a slow child confidence and encourages him to talk freely." Visual aids offer the best opportunities for the freedom of speech and speech correction. He stated, "Even the dumbest child is not afraid to tell what he can see."

A large number of authorities in the field of visual education feel that there is a definite place for the student in the operation of audio-visual equipment in the school. Bennett and Edgerton<sup>44</sup>

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<sup>41</sup>Moore, H. K. Test questions of the thought type in visual education. Educational Screen 16, April 1937, pp. 113-4.

<sup>42</sup>Roberts, A. B. Problems in introducing a visual program. Educational Screen 16, May 1937, pp. 179-81, 203.

<sup>43</sup>Parnes, J. Use of visual aids in the special class. Educational Screen 10, March 1931, pp. 76-7.

<sup>44</sup>Bennett, W. W. and Edgerton, L. S. A pupil operator service for projection of visual aids. School Science and Mathematics 36, April 1936, pp. 356-63.

stated that the teacher should be released from the mechanics of operation. Pupils with mechanical ability should be selected and trained to operate the equipment. Photographic and radio clubs should be encouraged to make slides and look after the radios respectively. The student should be an integral part of the audio-visual program in the school.

Dieffenback<sup>45</sup> concluded that students should operate equipment and keep records of the audio-visual aids used in the school.

Malstrom<sup>46</sup> stated he has used students in his audio-visual program in the Bremerton, Washington schools with outstanding success. He stated that there students were selected and trained, then given an examination which qualified them to operate equipment and look after the records. The entire program was carried out by the students except for the selecting of materials, which was done by the teachers.

McIntire<sup>47</sup> reported that only five percent of 183 Indiana schools had a director or an acting director. In the smaller schools a teacher should act as director on a part time basis.

Worrell<sup>48</sup> outlined a general program for the establishing of a supervised audio-visual education program.

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<sup>45</sup>Dieffenback, C. T. Student activity in a visual aid program. Educational Screen, 16, January 1937, pp. 11-12.

<sup>46</sup>Malstrom, H. W. Student operation of visual education equipment. Educational Screen 20, June 1941, pp. 236-8.

<sup>47</sup>McIntire, G. Visual instruction in Indiana. Educational Screen 11, May 1932, pp. 139-40.

<sup>48</sup>Worrell, F. M. Establishing a program of supervised audio-visual education. Educational Screen 16, January and February 1937. pp. 6 6-8, 43-5.



Ramseyer<sup>49</sup> stated that the administration of visual aids should be a cooperative enterprise but there should be one person in charge of the program. He pointed out that no one person can select new material wisely for all subjects; therefore, a committee of teachers should be appointed to work with the director in choosing new aids. He believed that in-service training was a responsibility of the administrators.

Chapman<sup>50</sup> made a survey of the use of audio-visual aids in Massachusetts and found that only forty-eight percent of the schools replying to his questionnaire previewed films. He suggested that proper leadership would have greatly increased this number. He pointed out that films should not be shown in the auditorium as this creates an atmosphere of entertainment. Once a program has been set up in a school the director or person in charge should be continually looking for new material.

McPherson<sup>51</sup> outlined a proposed visual program for California in order to overcome the difficulty of the smaller city schools in providing the essentials of a successful visual education program. He pointed out that a dozen large city districts are at present providing a satisfactory visual education program on a budget of about fifty cents

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<sup>49</sup>Ramseyer, L. L. Administrative techniques for effective school use of visual materials. Education 58, April 1938, pp.484-7.

<sup>50</sup>Chapman, L. H. What I expect of the administrator. Educational Screen 18, November 1939, pp.

<sup>51</sup>McPherson, H. M. Organization, administration and support of visual instruction in California. California Journal of Secondary Education 16, January 1941, pp. 36-40.



per pupil. He also found that in seventy-one percent of the districts surveyed the schools did not preview films.

Woodworth<sup>52</sup> suggested two steps for setting up an individual school program: The school should start with the less expensive equipment; then with the aid of the Student's Council, Parent Teacher Association, etc. should gradually purchase other equipment; one room at a time should be darkened and equipped for projection.

White<sup>53</sup> stated that in the State of Maine there was no organized visual instruction in the two hundred seventy-five high schools. About half of these schools owned motion picture projectors, but the only films that many used were the free industrial pictures. The University of Maine has set up a visual organization and has invited each school to become a member at a fee of one hundred dollars for two years.

Anna Dean<sup>54</sup> indicated that in order to make the best use of audio-visual aids each teacher using the materials should send in reports to the central library. These reports should be tabulated and the material eliminated which the teachers consider to be of little value.

Noble<sup>55</sup> concluded that there were three categories of audio-visual

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<sup>52</sup>Woodworth, R. B. The individual school program. Educational Screen 19, March 1940, pp. 105-7.

<sup>53</sup>White, R. R. Unsupervised visual education. Education 61, February 1941, pp. 373-6.

<sup>54</sup>Dean, Anna M. More effective utilization of visual materials. Educational Screen 20, October 1941, pp. 338-9.

<sup>55</sup>Noble, L. Distribution an aid to visual aids. Educational Screen 15, September 1936, pp. 176-7.

aids each calling for a different type and degree of distribution: The aids which are used every day should be kept in the school; those used frequently should be distributed rapidly from a central city library; those used once or twice a year should be kept and distributed from a state library. Dealers and equipment agents should not be allowed to sell directly to a school, but through the visual education department where there are qualified experts to make the best selection.

Braham<sup>56</sup> considered that, for a successful visual program, a director is necessary. He suggested that an audio-visual aids club be formed in each school composed of about ten enthusiastic students whose duty it would be to index aids, make up schedules, set up equipment and operate machines.

Roberts<sup>57</sup> felt that in the selection of a motion picture projector the silent projector should receive some consideration, because, while it costs one-third to one-quarter less than a sound projector, it has many advantages for teaching. The room used for projection should be well darkened and large enough to accomodate the largest class in the school.

Kutsche<sup>58</sup> stated that the ideal situation is to equip each room

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<sup>56</sup>Braham, R. V. Setting up a country-wide audio-visual program. School Executive 62, 1942, p. 20.

<sup>57</sup>Roberts, A. B. Problems in introducing a visual program. Educational Screen 16, May 1937, pp. 179-81, 203.

<sup>58</sup>Kutsche, W. T. Equipping a room for visual instruction. Education 61, February 1941, pp. 344-6.

for visual education; however, this is too expensive. At least one room should be equipped, but this should not be the auditorium as the latter suggests a show to the children.

Evans<sup>59</sup> stated that visual aids are in reality one of the many money savers of the modern educational program. The best method of figuring the annual visual education budget is to calculate on the basis of the average daily attendance. In California the average cost per pupil in the elementary schools was between seventy-five cents and one dollar per pupil, and in the secondary schools between two and six dollars.

Bauer<sup>60</sup> in his survey showed that finances are one of the greatest problems school administrators are faced with in working out an effective audio-visual education program. He pointed out that, "Before we flatly state that lack of funds does not permit the organization of a comprehensive audio-visual program in our school, it is well to question whether or not we are neglecting to educate properly the people most vitally concerned, relative to the intrinsic worth of a comprehensive audio-visual program in their schools." Schools should enlist the help of the Parent Teacher Associations in the raising of funds.

Childs<sup>61</sup> in 1941 outlined the trends in audio-visual materials

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<sup>59</sup>Evans, M. Budgeting for visual instruction. School Executive 53, September 1933, pp. 19-20.

<sup>60</sup>Bauer, H. C. Financing the audio-visual program. School Executive 56, August 1937, p. 485.

<sup>61</sup>Childs, H. E. Trends in materials and equipment. Educational Screen 20, October 1941,



and equipment. As a result of his survey he concluded that: The 16 mm. films are gaining over 35 mm. films; 16 mm. sound films are gaining over 16 mm. silent; colored films are increasing; 2"x2" slides are gaining over 3 $\frac{1}{4}$ "x4" glass slides; colored slides are also increasing; double frame film strips are gaining over single frame film strips; there is an increase in interest in working models.

### Summary of Chapter II

Audio-visual education has had a gradual development from the earliest of times.

In British Columbia, organized audio-visual education has been carried on for about ten years and has developed rapidly.

In the past twenty years a considerable number of studies have been carried out showing the value of the various visual aids.

In all tests in which a group of students taught by means of sound films was compared to a group of students taught by regular lecture methods, the film group showed substantial gains in knowledge, the average gain being about twenty percent.

Instruction by radio has a definite place in the school as it brings an expert into the classroom. It has been shown that lessons taught by the radio have proved just as effective as those taught by the teacher.

Experiments have shown that knowledge gained by means of a field trip or excursion is about twenty percent more than the knowledge gained in the regular classroom situation.



Models, specimens, and pictures are inexpensive visual aids which are available at little or no cost to all schools, and it is the opinion of the writers that they should be more widely used.

It has been pointed out that there has been a decided lag in the use of audio-visual aids due to insufficient training of the teachers. Some educators believe that all teachertraining institutions should be encouraged to include a general course in audio-visual aids, and in addition, applicable visual materials should be used in the method courses.

A large number of authorities in the field of audio-visual education believe that there is a definite place in the school for the student in the operation of audio-visual equipment.

Most of the writers agree that in all schools, a director or person in charge is essential for an effective audio-visual education program.

Financing of the audio-visual program is one of the chief problems facing administrators. It is important that they educate the people most vitally concerned in the intrinsic value of audio-visual aids in the classroom.

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CHAPTER III

AUDIO-VISUAL ORGANIZATIONS AND TEACHER TRAINING INSTITUTIONS  
IN BRITISH COLUMBIA

## CHAPTER III

AUDIO-VISUAL ORGANIZATIONS AND TEACHER TRAINING INSTITUTIONS  
IN BRITISH COLUMBIA

This chapter presents the information received when the writer personally visited the persons in charge of the audio-visual organizations and the teacher training institutions in the province.

## University of British Columbia Extension Division

## Director - Dr. Gordon Shrum

The largest audio-visual educational department in the province is under the direction of Dr. Gordon Shrum of the University of British Columbia Extension Division. The schools of British Columbia are able to rent from this department, films, film strips, lantern slides, and projection equipment, at a very low cost. This centre serves eighty-one schools as well as three hundred adult organizations. The schools in the remote areas are encouraged to rent film strip projectors rather than silent or sound projectors as these can be sent through the mail at a much lower cost.

This department operates, for the National Film Board, National Information Circuits covering communities in the province which have no motion picture theatre. During the day the films are shown at the school and in the evening to adult groups. General interest films are shown to both groups, and in addition, a special educational film is shown for the school children. There are three circuits covering about

forty schools; one on Vancouver Island, one on the lower mainland, and one in the Okanagan Valley. Each community is visited on the same day of each month. The teachers can request that a certain educational film be shown. Manuals, outlining the films to be offered, are sent to the teachers two weeks prior to the showing. A trained operator, who travels with the equipment, does the projecting. The film library receives from the National Film Board, Ottawa, Ontario, three changes of films a year.

The University Extension Department also maintains a Carnegie phonograph record deposit. These records are distributed to the schools throughout British Columbia.

The following audio-visual equipment and materials are owned and distributed by this department:

#### Audio-visual equipment

Cameras	1 Kine Exakta
	1 Cine Kodak Special
	1 Speed Graphic
Meter	1 Weston Exposure Meter
Tripods	2 tripods
Phonographs	1 Victor Two-speed Turntable
	1 Victor One-speed Turntable
Generators	2 1500 watt Homelite
Projectors	3 Model AA Picturols
	2 Model AAA Picturols
	7 Model CC Picturols
	6 Model DD Picturols
	2 Spencer Delineascopes
	3 Bausch and Lomb Balopticans
	3 Bell and Howell Sound Projectors



	4 Victor Sound Projectors
	1 Victor Silent Projector
Speakers	1 Dual Speaker
Screens	2 Dalite 52"x52"
	1 Dalite 36"x48"
	2 Dalite 52"x72"
	1 Britelite 46"x60"

#### Audio-visual materials

Sound films	212
Silent films	82
Film strips	815
2"x2" slides	537
3 $\frac{1}{4}$ "x4" slides	5028
Phonograph records	372

#### Canadian Broadcasting Corporation

Director - Kenneth Caple

The school broadcasts in British Columbia are under the direction of a Committee for Radio in Schools of which Mr. A. Sullivan, Inspector of High Schools, is chairman. This committee determines the type of program to be offered, and then the Director, Mr. Kenneth Caple, carries out the necessary script and production arrangements.

Professionals write the script and produce the programs.

The school broadcasts are presented each day from 2:00 to 2:30 P. M. by the Canadian Broadcasting Corporation over the six stations of the British Columbia Pacific network and, in addition, over ten repeater stations. Transcriptions are made of each broadcast and are sent to Prince Rupert, British Columbia, where they are played one week later. From there they are forwarded to Grande Prairie, Alberta, where they are played two weeks later for the benefit of the Peace River Area.

At Prince Rupert the program is broadcast twice, once from 10:00 to 10:30 A.M. for the schools and again from 5:00 to 5:30 P.M. for the children at home. These transcriptions are not circulated, but are stored for possible future use.

Bulletins are sent to each principal in British Columbia in June showing what programs will be given the following winter. Then in September a Teacher's Bulletin is mailed to the schools, outlining the material to be presented and with suggestions for the best utilization of the programs in the classroom.

The Director gave lectures on the use of the radio in the school at the British Columbia Teachers Federation Annual Meeting, and also at a meeting of the students of the Summer School of Education.

Interesting figures were obtained from the Director regarding the use of the radio programs in the schools. A survey carried out in May 1942 showed that 540 schools in British Columbia are equipped with radios of which eighty percent listen to the Canadian Broadcasting Corporation School Broadcasts.

The programs offered up until this year have been entirely for the elementary schools, but this year the committee for radio in schools has decided to offer a program for the secondary schools. The following programs were offered during 1941-42: Character Education, Intermediate Music, Junior Music, Historical Dramatization, and Current Events. In addition, the Canadian Broadcasting Corporation, in cooperation with the Columbia Broadcasting System, carried on Mondays and Thursdays from 1:30 to 2:00 P.M. the Columbia School of the Air.

The work of the Committee has been financed by grants from the British Columbia Department of Education.

Vancouver School Board, Visual Education Department

Director - J. Pollock

The Vancouver School Board, Visual Education Department was instituted as a service centre for the Vancouver schools, but has expanded until it now distributes audio-visual aids to any school in British Columbia. This department receives a grant from the Provincial Department of Education for performing this service. The Vancouver schools are served free of charge. These schools must however call for and return all aids to the office.

This office services all the audio-visual equipment owned by the Vancouver schools. The overhauling of the machines is carried out chiefly during the summer vacation.

The department has undertaken the production of film strips, 2"x2" lantern slides, and microscope slides. Photographs have been taken and reprints and enlargements made of pictures.

The director and his assistants have given instruction in the operation of the equipment to those teachers who were interested. This training has been in no way compulsory.

The Vancouver School Board owns a large collection of phonograph records which are handled by the Music Department with Mr. Burton Kurth, in charge, rather than by the Visual Education Department. These phonograph records are loaned to the Vancouver schools only.



The following audio-visual equipment and materials are available free of charge to the Vancouver schools; the films, film strips, and slides are available at a low rental to the schools outside of the city.

#### Audio-visual equipment

Cameras	2 16 mm. Movie Cameras 1 Film slide camera 1 Leica
Phonographs	1 Victor One-speed Turntable
Radio	1 Victor
Microphones	2
Projectors	2 Bell and Howell Sound Projectors 2 Bell and Howell Silent Projectors 2 Model DDD Picturols 2 Spencer Delineascopes
Screens	1 Flat white 1 Metallic

#### Audio-visual materials

Sound films	281
Silent films	200
2"x2" slides	553
3½"x4" slides	124
Phonograph records	1112
Microscope slides	622
Film strips	879

#### The Victoria School System

Victoria, although not having an audio-visual education centre, has a definitely organized program, under the direction of Mr. Dee, Vice-Principal of Victoria High School. In addition to the high and junior high schools, nine out of the fourteen elementary schools in



the city participate in this program. The following equipment, which is kept at the high school and junior high school was purchased by the eleven schools largely through student activity.

- 1 Bell and Howell Sound Motion Picture Projector
- 1 Bell and Howell Silent Motion Picture Projector
- 2 Bausch and Lomb Opaque Projectors
- 2 Spencer Lantern Slide Projectors
- 1 S.V.E. Tri-Purpose Picturol
- 1 Victor Turntable

Each school is equipped with a beaded screen, radio, and phonograph.

The elementary schools receive three or four films one day each week according to a definite schedule. Requests for films, film strips, and lantern slides are made by the teachers to the director of audio-visual education in their school, and he in turn orders the material from the central director. The audio-visual materials are obtained by the director from the following sources: Vancouver School Board, University of British Columbia, University of Alberta, and the Provincial Government Departments at Victoria.

Also located in Victoria High School is a large Carnegie collection of phonograph records which are distributed to the various schools upon request.

Matsqui - Sumas - Abbotsford Educational Administrative Area

Official Trustee - A. S. Towell

The central office for this administrative area is located at

Abbotsford, British Columbia. In this office is kept the visual equipment which consists of one Bell and Howell Sound Projector, one S.V.E. Tri-Purpose Picturol Projector, and two beaded screens. There are one high, three superior, and ten elementary schools in this district. Being a relatively poor area each school could not afford to purchase the necessary audio-visual equipment; therefore this equipment was purchased by the school board and placed in the central office for the benefit of all the schools. The schools, however, must borrow their sound and silent films and film strips from either the Vancouver School Board or the University of British Columbia.

Each school that wishes to use the projection equipment must make reservation at the central office. The projection equipment must be picked up and returned by the school using it.

This system has proven very satisfactory, in that this equipment is being used extensively by most of the schools in the area.

#### Provincial Normal School, Victoria, British Columbia

Principal - Dr. V. L. Denton

This is one of the province's two normal schools for the training of elementary school teachers. This school has the following audio-visual aids:

- 1 S.V.E. Tri-Purpose Picturol
- 1 Bausch and Lomb Lantern slide projector
- 1 Screen

300 Lantern slides ( $3\frac{1}{4}$ "x4")  
12 Film strips

In addition, the school has a large number of models and specimens, and

an extensive picture file. This latter material, along with film strips and lantern slides, is considered by the principal to be of much more value for instruction than sound films. The students are encouraged to use the film strip projector because of the lower cost of rental and the ease of operation.

The value of audio-visual aids is demonstrated to the pupils in various courses in methods of teaching, but no formal course in audio-visual education is offered.

Provincial Normal School, Vancouver, British Columbia

Principal - A. R. Lord

This is the larger of the two normal schools in British Columbia, but so far this school has not used projection equipment extensively. Equipment is borrowed from the Vancouver School Board when required. The students are encouraged to use the materials available in the Vancouver School Board, Visual Education Department, during their practice teaching.

There is no formal training in audio-visual education but audio-visual aids are used in some demonstration lessons.

Department of Education, University of British Columbia

Acting Head of the Department - Dr. M. A. Cameron

In the teacher training course at the University of British Columbia the only audio-visual instruction offered the students is a few lectures on the use of equipment and materials given by a member

of the Visual Department, University of British Columbia Extension Division. Since there are only a few lectures, and attendance at these is voluntary, the students gain very little knowledge of audio-visual aids and techniques.

### Summary of Chapter III

The University of British Columbia Extension Division has a circulating audio-visual aids library. The department handles both school and adult needs, and operates three National Film Board Information Circuits in the province.

The Canadian Broadcasting Corporation presents daily one-half hour school radio programs over the provincial network. The corporation publishes programs and bulletins which are sent to all schools for the effective use of the programs.

The Vancouver School Board, Visual Department, instituted as a center for the Vancouver schools, has developed into a province-wide lending library. This department has gone in quite extensively for production.

In Victoria, the schools have a director, who organizes the audio-visual program guided by a committee of teachers.

In the Matsqui, Sumas, Abbotsford Educational Administrative Area there is a unique system; the projection equipment is kept at the central office and is available to all schools in the district.

At the Victoria Normal School, audio-visual aids have been used incidentally in methods courses. Neither the Vancouver Normal School nor the Department of Education, University of British Columbia have



placed any emphasis on audio-visual instruction.

#### CHAPTER IV

#### AUDIO-VISUAL EQUIPMENT AND MATERIALS

## CHAPTER IV

## AUDIO-VISUAL EQUIPMENT AND MATERIALS

In this chapter the results of those parts of the questionnaire "Report on Audio-Visual Aids", questions two to fourteen, which deal with the equipment and materials, will be considered. A definite order will be followed in discussing the various questions: First the question will be given; next the reason, if any, for asking the question; then the results in tabular form; followed by excerpts from the replies to the questionnaire; and finally by the comments of the writer.

## Sound Projectors

## Question 2

How many sound motion picture projectors do you have in your school? \_\_\_\_\_

What makes? \_\_\_\_\_

Can your sound motion picture projector be used for silent films? Yes \_\_\_\_\_ No \_\_\_\_\_

Motion pictures have become very popular during the past few years as a method of instruction in the school. This question was asked in order to determine the number, type, and location of schools with sound motion picture projectors. Since many teaching films do not require sound, and since silent films can be produced at a lower cost, it is advisable that we know the number of projectors which will show both types of films.

TABLE VI  
SOUND PROJECTORS

	High School			Junior H.S.			Superior		Elementary				Total
	City	Mun.	Rur.	City	Mun.	Rur.	Mun.	Rur.	City	Mun.	Rur.	Com.	
Number of schools replying	35	18	37	18	13	9	3	25	105	85	188	7	543
Number using sound projectors													
Owned	19	5	-	3	-	-	-	-	18	-	1	-	46
Shared	-	-	-	7	3	-	-	-	25	5	-	-	40
Borrowed	1	1	-	4	-	-	3	-	5	-	-	-	14
Circuit	1	-	4	-	-	1	-	5	16	2	8	-	37
Percent of schools using sound projectors	60.00	33.33	10.81	77.78	23.08	11.11	100.00	20.00	60.95	8.24	4.68	-	25.25
Makes of projectors owned													
Bell and Howell	14	3	-	2	-	-	-	-	16	-	-	-	35
Victor	4	2	-	1	-	-	-	-	1	-	1	-	9
Ampro	-	-	-	-	-	-	-	-	1	-	-	-	1
Powers	1	-	-	-	-	-	-	-	-	-	-	-	1
Number of sound projectors that can be used for silent films	19	5	-	3	-	-	-	-	18	-	1	-	46



## Excerpts

"I (the teacher) am now conducting a project to obtain a 16 mm. sound projector." (3)\*

"Have stopped using a sound projector since sound films are not as good as flat pictures for elementary schools." (3)

"Can borrow sound projector from Matsqui Sumas Abbotsford Educational Office, but don't bother." (1)

## Comments

The table shows that 25.25 percent of the schools in British Columbia use a sound projector; owned, rented, borrowed, or belonging to a circuit. Sixty percent of the city high schools, 77.78 percent of the city junior high schools, and 60.95 percent of the city elementary schools, or a total of 62.66 percent of the city schools use sound projectors. Only 15.97 percent of the 119 district municipal schools, and 7.34 percent of the 259 rural district schools have the use of a sound projector. This indicates that practically all the machines are used by the city schools. The table shows that of the forty-six projectors, forty are owned by the city schools. The reason for this situation is due to two factors: the city schools are in large centers of population with sufficient school funds to purchase this expensive equipment; and the city schools, because of their large enrolments, are able to raise the necessary money for equipment by means of school entertainments.

\* Number in parenthesis indicates the number of returns expressing similar remarks.

Thirty-five or 76.09 percent of the forty-six projectors owned are Bell and Howell. The reason for the large number of this make is due to the fact that the Vancouver School Board has adopted this machine and a number of other schools have followed its example. During the past two years there has been a steady increase in the number of Victor projectors purchased. There are now 19.57 percent of these in use. The Visual Department at the University of British Columbia has adopted the Victor machine.

All the sound projectors in the schools can be used for either sound or silent films.

From the data contained in the table it is obvious that some plan should be instituted whereby the schools in the smaller centers would be able to have the use of a projector. This question will be dealt with fully in the recommendations.

### Silent Projectors

#### Question 3

How many silent motion picture projectors do you have in your school? \_\_\_\_\_

What makes? \_\_\_\_\_

The silent motion picture projector has been in use in the schools of British Columbia since 1920, when the first projector was installed in a Vancouver school. With the advent of the sound motion picture projector the trend has been definitely from silent to sound films, as is indicated particularly in the reports from the audio-visual libraries which have practically no silent films.

TABLE VII  
SILENT PROJECTORS

	High School			Junior H.S.			Superior		Elementary				Total
	City	Mun.	Rur.	City	Mun.	Rur.	Mun.	Rur.	City	Mun.	Rur.	Com.	
Number of schools replying	35	18	37	18	13	9	3	25	105	85	188	7	543
Number using silent projectors													
Owned	4	2	-	3	2	-	-	1	7	5	-	-	24
Shared	-	-	-	1	-	-	-	-	4	-	-	-	5
Borrowed	1	2	1	1	1	1	-	2	3	1	1	-	14
Circuit	-	-	-	-	-	-	-	-	9	-	-	-	9
Percent of schools using silent projectors	14.29	22.22	2.70	27.28	23.08	11.11	-	12.00	21.91	7.06	0.53	-	9.58
Makes of projectors owned													
Eastman	-	1	-	-	2	-	-	-	1	3	-	-	7
Victor	2	-	-	1	-	-	-	-	-	-	-	-	3
Bell and Howell	1	1	-	2	-	-	-	-	4	-	-	-	8
Powers	1	-	-	-	-	-	-	-	-	-	-	-	1
Keystone	-	-	-	-	-	-	-	1	3	2	-	-	6

## Excerpt

"Most silent films are now 'old-fashioned'." (8)

## Comments

The silent projector is being used by 9.58 percent of the British Columbia schools. These are chiefly schools which do not have a sound projector. Again as was the case in sound projectors, the city schools with 22.29 percent are the greatest users, followed by the district municipal schools with 10.92 percent, and the rural district schools with 2.32 percent.

The table shows that there are most Bell and Howell silent projectors, a total of eight out of twenty-five or thirty-two percent, followed closely by Eastman with twenty-eight percent and Keystone with twenty-four percent.

Table VII shows that five schools own silent projectors which are not being used, two of these are 35 mm. for which very few educational films are now available. These five silent projectors are all in schools now using sound projectors. The lending libraries are adding few silent films to their collections, and, as a result, the films already owned are becoming rapidly out-dated as is indicated in the excerpt above.



## Films

## Question 4

Where do you obtain your sound and silent films? \_\_\_\_\_

How many films does your school own? Sound \_\_\_\_\_ Silent \_\_\_\_\_

In order that recommendations may be made for the setting up of convenient film libraries, it is important to know where the schools are obtaining their sound and silent films, how many own films, and how many of each they possess.

TABLE VIII

## FILMS

	High School			Junior H.S.			Superior		Elementary			Total	
	City	Mun.	Rur.	City	Mun.	Rur.	Mun.	Rur.	City	Mun.	Rur.	Com.	
Number of schools replying	35	18	37	18	13	9	3	25	105	85	188	7	543
Source of rented sound and silent films													
University of B. C.	13	7	1	11	4	1	-	3	26	5	1	-	72
Vancouver School Board	20	9	-	10	5	-	2	1	67	8	1	-	123
University of Alberta	1	-	-	1	-	-	-	-	9	-	-	-	11
General Films Inc.	2	1	-	2	1	-	-	-	4	-	-	-	10
Government Departments, Victoria, B. C.	1	1	-	1	-	-	-	-	11	1	-	-	15
Other sources	2	1	-	-	3	-	-	-	3	-	-	-	9
Number of films owned by schools													
Sound	-	-	-	-	-	-	-	-	-	-	-	-	-
Silent	5	1	-	1	1	-	-	-	11	-	-	-	19

## Excerpts

"Not sufficient films for lower grades" (6)

"Greatest handicap in sound movie projection work is lack of films as and when needed" (2)

"Could do with more vocational films" (7)

"Need more films for social studies and English" (2)

"The difficulty seems to be in choosing films suitable for elementary school pupils." (4)

"Difficulty in getting films, etc. for use in school due to gas rationing and tires" (3)

"Having little 'money' means, we have confined our films largely to free lists." (2)

"Much time elapses in getting our films from Vancouver and then we can keep them for a short time only." (8)

"The picture show in this town is run by the community and the teachers pick out special films for the pupils. They usually run an educational film each week along with the regular show." (1)

"The Dominion Government provides a travelling film projector in charge of a projectionist who visits us once a month. Largely war propaganda pictures, which is the essential purpose of the circuit. Usually one film of historic or geographic interest is included." (11)

"I took the high school to see these (National Film Board Information Circuit), but the educational films were not aligned with our course of studies." (6)

"National Film Board shows pictures monthly. As these films are shown

to the elementary schools also, it is difficult to select subjects that could be used directly in high school work." (5)

#### Comments

The table shows that the majority of the schools are at present obtaining their silent and sound films from the University of British Columbia Extension Department or the Vancouver School Board Visual Education Department.

There are few schools with films, in fact only nineteen silent films are owned by the schools and these depict school activities.

Excerpts from the replies indicate that some teachers feel that there is an inadequate supply of films for the lower grades. Others stress the lack of films in certain subjects such as English, social studies, and vocational guidance, and feel that more of these should be made available by the lending libraries. The National Film Board, Information Circuits, which cover a number of rural schools, show an educational film on their film program. Some of the teachers feel that this has little value as it does not follow the curriculum and is only suitable for one age level, while it is shown to all age groups at one time.

#### Screens

##### Question 5

How many of each of the following types of screens do you use in your school?

Metallic surface	_____
Glass-beaded	Flat white _____
Translucent	Others _____



In order to get the best possible results from the projection of visual materials, it is necessary to have suitable screens. There are advantages and disadvantages to each type of screen. This question was asked to determine the types of screens being used at present in the schools.

TABLE IX

## SCREENS

	High School			Junior H.S.			Superior		Elementary			Total	
	City	Mun.	Rur.	City	Mun.	Rur.	Mun.	Rur.	City	Mun.	Rur.	Com.	
Number of schools replying	35	18	37	18	13	9	3	25	105	85	188	7	543
Number of screens													
Metallic surface	-	2	2	-	2	1	-	-	3	-	2	-	12
Glass-beaded	15	5	1	7	3	1	1	-	21	5	1	-	60
Flat white	21	7	2	10	3	2	2	2	64	5	6	-	124
Translucent	1	1	2	3	1	1	-	-	5	-	2	-	16
Perforated	1	-	-	1	-	-	-	-	-	-	-	-	2
Number of substitutes													
Wall	-	3	-	-	-	-	-	-	-	2	-	-	5
Back of map	-	-	-	1	-	-	-	-	1	-	-	-	2

## Excerpts

"Use wall for projection in place of a screen" (5)

"The back of a map is used as a screen" (2)

"Use a white sheet" (3)

## Comments

The table shows that 57.94 percent of the screens are flat white, 28.23 percent are glass-beaded, and the remainder are metallic surface, translucent, or perforated screens. There are 124 flat white screens, sixty of which are owned by the Vancouver Schools. These screens were made by the Vancouver School Board's carpentry department, one for each school in the system, and these are large. These schools also own several of the other types of screens as the large ones are too cumbersome to move from one room to another.

From the excerpts it is noted that several schools using projection equipment have no screen, but use the wall of the room, the back of a map, or a white sheet.

There are a number of important considerations in the selection and use of a screen, which will be dealt with in the recommendations under the heading: The Setting up of a Room for Projection.

### $3\frac{1}{4}$ "x4" Lantern Slide Projector

#### Question 6

How many  $3\frac{1}{4}$ "x4" lantern slide projectors do you have in your school? \_\_\_\_\_

What makes?

How many  $3\frac{1}{4}" \times 4"$  lantern slides do you have in your school?

Do you have a film strip (75 mm.) adapter for your  $3\frac{1}{4}" \times 4"$  lantern slide projector? Yes \_\_\_\_\_ No \_\_\_\_\_

Where do you obtain your  $3\frac{1}{4}" \times 4"$  glass slides? \_\_\_\_\_

Do you make  $3\frac{1}{4}" \times 4"$  glass slides? Photographic \_\_\_\_\_  
Hand-made \_\_\_\_\_

Several years ago  $3\frac{1}{4}" \times 4"$  lantern slides were used extensively but they have fallen into comparative disuse due to the relatively high cost of shipping these slides from a central library. However,  $3\frac{1}{4}" \times 4"$  glass slides still remain a valuable visual aid and these can be easily prepared by the teachers and students. It is therefore important to have the number of schools with lantern slide projectors and the number of commercial and home-made slides.



TABLE X

3 $\frac{1}{4}$ "x4 LANTERN SLIDE PROJECTORS

	High School			Junior H.S.			Superior		Elementary			Total	
	City	Mun.	Rur.	City	Mun.	Rur.	Mun.	Rur.	City	Mun.	Rur.	Com.	
Number of schools replying	35	18	37	18	13	9	3	25	105	85	188	7	543
Number using 3½"x4" projector:													
Owned	19	2	6	6	1	-	-	1	20	3	4	-	62
Borrowed	-	1	-	1	1	-	-	-	1	1	-	-	5
Shared	-	1	-	6	1	3	-	-	7	-	4	-	22
Circuit	-	-	-	-	-	-	-	-	9	-	-	-	9
Percent of schools using lantern slide projector	54.29	22.22	16.22	72.22	23.08	33.33	-	4.00	35.24	4.71	4.26	-	18.05
Makes of machines owned													
Bausch and Lomb	5	2	6	3	-	-	-	1	5	1	1	-	24
Spencer	12	-	-	3	1	-	-	-	14	2	3	-	35
Keystone	1	-	-	-	-	-	-	-	-	-	-	-	1
Leitz	1	-	-	-	-	-	-	-	-	-	-	-	1
Others	-	-	-	-	-	-	-	-	2	-	-	-	2
Number of 3½"x4" slides owned by the schools	734	400	-	2360	20	-	-	-	1300	-	-	-	4814
Number with 75 mm. film strip adapter	1	1	1	-	-	-	-	-	-	-	1	-	4
3½"x4" slides borrowed from													
Vancouver School Board	1	1	-	1	2	-	-	-	2	1	1	-	9
University of B. C.	2	2	3	1	2	2	-	1	2	3	3	-	21
Victoria High School	-	-	-	-	-	-	-	-	9	-	-	-	9
Number of schools making slides:													
Photographic	-	1	1	1	-	-	-	-	-	-	1	-	4
Hand made	3	-	-	1	-	1	-	-	1	-	-	-	6

## Excerpts

"Lantern slide projector not used much as it is hard to get good slides." (11)

"Use lantern slide projector as a spot-light only." (1)

## Comments

Table X shows that 18.05 percent of the schools use a  $3\frac{1}{4}$ "x4" lantern slide projector. The percent of city schools using this type of projector is 43.67; this accounts for sixty-nine out of ninety-eight users. The probable reasons for most of the users being in the cities are that the cost of shipment of slides from Vancouver is high, and that many of the city schools, being larger, have their own collections which they have made themselves or purchased. The city schools own about 4400 slides or nearly ninety percent of the total. Less than one-half of the users borrow glass slides from a library. The Vancouver School Board will not ship glass slides. The Victoria Schools have their own collection. The University of British Columbia, Visual Department was started as a distribution center for  $3\frac{1}{4}$ "x4" glass slides. These are gradually being replaced with 2"x2" glass slides and film strips as both of these can be shipped more easily and at lower cost.

Very few of the machines have a 75 mm. film strip adapter. Over ninety percent of the projectors are either Bausch and Lomb or Spencer.

Considering how easy it is to make these large glass slides, it is surprising that so few schools have undertaken their production.

Although the lending libraries are not adding  $3\frac{1}{4}$ "x4" glass slides to their collections, it does not mean that these are not valuable visual aids; in fact, they continue to be one of the best teaching devices.

### 2"x2" Lantern Slide Projectors

#### Question 7

How many 2"x2" lantern slide projectors do you have in your school? \_\_\_\_\_

What makes? \_\_\_\_\_

Do you use an adapter for 2"x2" slides on your  $3\frac{1}{4}$ "x4" lantern slide projector? Yes \_\_\_\_\_ No \_\_\_\_\_

Do you use an adapter for 2"x2" slides on your film strip projector? Yes \_\_\_\_\_ No \_\_\_\_\_

How many 2"x2" slides does your school own? \_\_\_\_\_

Where do you obtain your 2"x2" slides? \_\_\_\_\_

Do you make 2"x2" slides? Colored \_\_\_\_\_ Black and white \_\_\_\_\_

The 2"x2" lantern slide is rapidly gaining in popularity over the larger  $3\frac{1}{4}$ "x4" glass slide, because of its size it is more easily stored or shipped. These 2"x2" slides can also be projected by using an adapter on either the  $3\frac{1}{4}$ "x4" lantern slide projector or on the film strip projector. Since photography has become such a popular hobby, many teachers should find it interesting and easy to prepare these small slides.

TABLE XI  
2"x2" LANTERN SLIDE PROJECTORS

	High School			Junior H.S.			Superior		Elementary			Total	
	City	Mun.	Rur.	City	Mun.	Rur.	Mun.	Rur.	City	Mun.	Rur.	Com.	
Number of schools replying	35	18	37	18	13	9	3	25	105	85	188	7	543
Number using 2"x2" projector:													
Owned	1	1	-	-	-	-	-	-	-	-	-	-	2
Shared	-	-	-	1	-	-	-	-	-	-	-	-	1
Makes of projectors owned													
Eastman	-	1	-	-	-	-	-	-	-	-	-	-	1
Bausch and Lomb	1	-	-	-	-	-	-	-	-	-	-	-	1
Number using a 2"x2" adapter on a 3 $\frac{1}{4}$ "x4" lantern slide projector	3	1	1	1	-	1	-	-	1	-	-	-	8
Number using an adapter on film strip projector	6	4	6	4	2	3	-	1	11	1	7	-	45
Percent of schools using projectors or adapters	28.57	33.33	18.92	33.33	15.39	44.44	-	4.00	11.44	1.18	3.72	-	10.31
Number of slides owned by the schools	260	125	-	210	125	-	-	-	150	-	-	-	870
2"x2" slides borrowed from													
Vancouver School Board	4	3	1	1	2	1	-	-	2	1	-	-	16
University of B. C.	3	3	5	3	1	2	-	1	8	-	7	-	33
University of Alberta	-	-	1	-	-	1	-	-	-	-	1	-	3
Number of schools making slides:													
Colored	4	-	-	3	-	-	-	-	-	-	-	-	7
Uncolored	2	-	-	1	-	-	-	-	-	-	-	-	3



There are only two 2"x2" lantern slide projectors owned by the schools, but forty-five schools use an adapter on their film strip projector, and eight use an adapter on their  $3\frac{1}{4}$ "x4" lantern slide projector.

Ten schools own a total of eight hundred seventy 2"x2" slides. These slides can be made photographically either in color or black and white. Only seven of the schools have undertaken the production of this type of slide.

The University of British Columbia supplies the largest number of borrowers, and is encouraging the use of this rather new aid, because the 2"x2" slides are convenient and can be used in the Society for Visual Education Tri-Purpose Projector.

### Film Strip Projector

#### Question 8

How many film strip projectors do you have in your school? \_\_\_\_\_

What makes? \_\_\_\_\_

How many film strips does your school own? \_\_\_\_\_

Where do you obtain your film strips? \_\_\_\_\_

The film strip projector ranks next to the sound film projector in popularity, and is preferred by many teachers because of its convenience and ease of operation. Film libraries encourage the use of the film strip because of the low cost of shipping. Since these film strips can be purchased very reasonably, it is possible for a school to build up its own collection for regular use in the classroom.

TABLE XII  
FILM STRIP PROJECTORS

	High School			Junior H.S.			Superior		Elementary			Com.	Total
	City	Mun.	Rur.	City	Mun.	Rur.	Mun.	Rur.	City	Mun.	Rur.		
Number of schools replying	35	18	37	18	13	9	3	25	105	85	188	7	543
Number using projector													
Owned	24	6	11	4	4	-	-	2	49	10	6	-	116
Borrowed	2	1	2	3	-	-	3	-	8	8	4	-	31
Shared	1	2	-	11	3	7	-	-	11	-	12	-	47
Circuit	-	-	-	-	-	-	-	-	9	-	-	-	9
Percent of schools using film strip projectors	77.14	50.00	35.14	100.0	53.85	77.78	100.0	8.00	73.33	21.18	11.70	-	37.39
Makes of projectors owned													
Spencer	4	1	-	1	-	-	-	-	39	-	-	-	45
S.V.E. Picturol	20	5	9	3	4	-	-	2	11	10	6	-	70
Bausch and Lomb	-	-	2	-	-	-	-	-	-	-	-	-	2
Number of film strips owned by the schools	522	415	404	398	402	404	-	-	394	23	378	-	3340
Film strips borrowed from													
Vancouver School Board	19	3	2	9	3	-	3	1	60	6	4	-	110
University of B.C.	11	2	9	10	3	4	2	1	25	7	13	-	87
Other sources	1	-	1	-	3	2	-	-	1	4	5	-	17

## Excerpts

"Available film strips are too old." (3)

"Filmslides are very generally used." (7)

"We have no properly equipped room without going to a lot of trouble of rigging up blinds etc. This is partly the reason the machine (film strip projector) is not much used." (2)

"Film strip projector not used as school considers sound film better."

"We came to the conclusion that film strips were not interesting enough to justify the expense of rental once the novelty has worn off. High School students requested to be excused for study which they said was more beneficial." (2)

## Comments

This is the most popular type of projector and is used by thirty-seven percent of the schools. 77.22 percent of the city schools use the film strip projector, followed by 31.09 percent of the district municipal schools, and 16.99 percent of the rural district schools.

It is noted that the schools own 3340 film strips or an average of 16.45 for each of the 203 schools with a projector. The schools should be encouraged to start collections of film strips because they are inexpensive and would prove of great value to the teachers if the most important and most used film strips were available at all times.

Sixty percent of the schools use Society for Visual Education Tri-Purpose Picturol machines. The University of British Columbia,

Extension Department own eighteen Picturols which they loan to the schools at a low rental.

On the whole the teachers find the film strip a valuable aid, although some teachers reported that the available film strips were antiquated or not interesting enough to hold the attention of the high school students. Others felt that the sound film was better and therefore did not use the film strip. These teachers may not have been properly trained in the use of visual materials and therefore did not get the maximum value from the film strip. The writer feels that if used properly the film strip is probably the most valuable teaching aid. This further indicates the need of teacher training in audio-visual instruction.

### Opaque Projectors

#### Question 9

How many opaque projectors do you have in your school? \_\_\_\_\_  
 What makes? \_\_\_\_\_  
 Can you completely darken the room in which you use your opaque projector? Yes \_\_\_\_\_ No \_\_\_\_\_  
 What do you show with your opaque projector?  
 Flat pictures \_\_\_\_\_ Geological specimens \_\_\_\_\_  
 Biological specimens \_\_\_\_\_ Other materials \_\_\_\_\_

---

With a large number of the schools owning collections of flat pictures and specimens, the opaque projector, because of its adaptability for use with these, should be one of the most extensively used projectors. Probably the reason that this is not the case is



due to the fact that for effective use the projector must be operated in a room which is completely darkened. It should be interesting to note the number of schools with opaque projectors and those not using them because of the inability to completely darken a room.

TABLE XIII  
OPAQUE PROJECTORS

	High School			Junior H.S.			Superior		Elementary				Total
	City	Mun.	Rur.	City	Mun.	Rur.	Mun.	Rur.	City	Mun.	Rur.	Com.	
Number of schools replying	35	18	37	18	13	9	3	25	105	85	188	7	543
Number using projectors													
Owned	11	1	4	3	-	-	-	-	6	4	-	-	29
Borrowed	-	-	-	-	-	-	-	-	-	-	1	-	1
Shared	-	-	-	4	1	2	-	-	16	-	5	-	28
Percent of schools using opaque projectors	31.43	5.56	10.81	38.89	7.69	22.22	-	-	20.95	4.71	3.19	-	10.68
Makes of projectors owned													
Bausch and Lomb	8	-	4	3	-	-	-	-	4	1	-	-	20
Spencer	3	1	-	-	-	-	-	-	2	3	-	-	9
Projector used to show													
Flat pictures	11	1	3	7	1	2	-	-	21	4	5	-	55
Geological specimens	2	-	-	3	-	-	-	-	5	1	1	-	12
Biological specimens	5	-	-	3	-	-	-	-	5	1	1	-	15
Can room in which projector is used be darkened completely?													
Yes	10	1	3	7	1	2	-	-	21	4	5	-	54
No	1	-	1	-	-	-	-	-	1	-	1	-	4

## Excerpt

"Opaque projector not used because it is difficult to completely darken the projection room." (3)

## Comments

The opaque projector is used by only 10.82 percent of the schools. The city schools own or use practically all of these machines, in fact forty-two of the fifty-eight. Of the twenty-nine machines owned, twenty are Bausch and Lomb and the remainder are Spencer.

Of the fifty-eight schools using the opaque projector only four were not able to completely darken the room. The excerpt from one of the replies shows that this school stopped using the projector because of their inability to completely darken the room.

Most of the projectors were used to show flat pictures. However in fifteen schools, biological specimens were shown, and in twelve, geological specimens. These latter two uses of the projector show the all-round value of this machine. The cost of the opaque projector is easily offset by the abundance of pictures and specimens that can be obtained free of charge or at little cost. This projector can be used to show illustrations which are too small for the whole class to see at the same time. This overcomes the necessity of passing pictures around the classroom and at the same time the pupil can observe the details which are being explained by the teacher.

## Phonographs

## Question 10

How many phonographs do you have in your school? \_\_\_\_\_  
 What makes? \_\_\_\_\_  
 How many records does your school own? \_\_\_\_\_  
 Do you use records for Physical Education \_\_\_\_\_,  
 Typing \_\_\_\_\_, Foreign languages \_\_\_\_\_, or other  
 subjects (list) \_\_\_\_\_  
 Do you use electrical transcriptions? Yes \_\_\_\_\_ No \_\_\_\_\_  
 What types? \_\_\_\_\_  
 How many transcriptions does your school own? \_\_\_\_\_  
 Has your school a recording device? Yes \_\_\_\_\_ No \_\_\_\_\_  
 What make? \_\_\_\_\_  
 What do you record? \_\_\_\_\_

A far greater number of the schools in the province use the phonograph than any other audio-visual aid, because it is easy to operate, and it does not require electricity, which is lacking in many rural schools. The phonograph is probably the oldest audio-visual aid used in the schools and for this reason nearly all the schools have acquired at least one, as well as a collection of records. Up until the present the use of this aid has been limited largely to music, but with the introduction of educational electrical transcriptions, it is now possible to enrich nearly every subject in the curriculum.

Although most people consider that the only purpose of a recorder is to make musical records, this is not the case, as it is most valuable for speech correction in the classroom.



TABLE XIV  
PHONOGRAPHS

	High School			Junior H.S.			Superior		Elementary			Total	
	City	Mun.	Rur.	City	Mun.	Rur.	Mun.	Rur.	City	Mun.	Rur.	Com.	
Number of schools replying	35	18	37	18	13	9	3	25	105	85	188	7	543
Number of phonographs													
Owned	46	24	44	12	5	-	3	16	114	71	69	3	407
Shared	-	-	-	21	16	16	-	-	4	-	30	-	87
Borrowed	-	-	1	-	-	-	-	2	-	1	4	-	8
Number of records owned by the schools	3213	769	1558	908	889	856	156	400	2727	1832	2845	30	16183
Records used for													
Physical education	15	11	17	12	11	5	2	8	62	36	58	3	241
Typing	8	5	3	4	4	2	-	-	-	-	-	-	26
Foreign language	10	3	14	5	-	2	-	1	1	-	-	-	36
Music appreciation	16	13	16	13	12	4	3	12	84	43	58	3	277
Literature	5	1	4	4	-	2	-	-	5	-	4	-	25
Folk dancing	3	-	-	1	-	-	-	-	-	4	-	-	8
Number of schools using transcriptions	1	-	-	1	-	-	-	-	-	-	1	-	3
Number of recording devices	1	-	1	1	-	1	-	-	-	-	-	-	4

## Excerpts

"Sewing class and the art class listen to musical records while they work." (2)

"Borrow a recording device to record pupils reading and speaking voices." (2)

"Use phonograph to give 'Pierson Music Tests'." (8)

"The only equipment we have is a gramophone which is not in working condition and which the School Board doesn't feel needs to be repaired."

"The teachers of the Vancouver Mid-Island have organized a circulating library of phonograph records. Each district pays a fee of five dollars to join the library. Each school gets twenty to twenty-five good double-sided records per month. There are enough records to prevent repetition within three years. This system works fine and could be extended to include slides, film strips, etc." (6)

"Have house plan for gathering records." (2)

"Use transcriptions of speeches borrowed from local radio station." (1)

## Comments

The phonograph is used by practically eighty percent of the schools. The city schools average more than one phonograph per school. There is an average of forty records for each school using a phonograph. The phonograph is used chiefly for music appreciation and physical education and to a slight extent for typing, foreign language and literature. These last three are chiefly high school uses for records.

Only three schools reported that they used transcriptions.

Four schools have the use of a recording device which they use for speech correction.

There are several centers where schools may rent records. The Vancouver School Board, Music Department has a large collection of records which are used only by the Vancouver schools. In Victoria High School there is a Carnegie collection of records which are available to the Victoria schools. The Mid-Island schools on Vancouver Island have a circulating library of phonograph records which is outlined in an excerpt from one of the comments. The University of British Columbia has a large collection of records which are supplied at a low rental to any school in British Columbia.

### Radios

#### Question 11

Does your school use the radio for instruction?

Yes \_\_\_\_\_ No \_\_\_\_\_

How many radios do you have in your school?

Portable \_\_\_\_\_ Cabinet \_\_\_\_\_

What programs are used? \_\_\_\_\_

Would you make use of the radio if the present school programs were scheduled at different times? Yes \_\_\_\_\_

No \_\_\_\_\_

What types of programs would you like for use in your classrooms? \_\_\_\_\_

How many rooms are equipped for radio? (aerial, ground, and outlet) \_\_\_\_\_

Although the radio has become an integral part of the home, it has not been completely accepted as a teaching aid. Almost every radio station carries regularly scheduled educational programs, which are of particular value to teachers in remote areas where connections

with the outside world are limited. The use of the radio in the school presents many problems, the chief of which is arranging the time-table to suit the broadcast schedule. The programs which have been offered over the British Columbia network have been largely limited to a few elementary school subjects. It should be interesting to note the types of programs which the teachers would like for use in their classrooms.



TABLE XV

## RADIO

	High School			Junior H.S.			Superior		Elementary			Total	
	City	Mun.	Rur.	City	Mun.	Rur.	Mun.	Rur.	City	Mun.	Rur.	Com.	
Number of schools replying	35	18	37	18	13	9	3	25	105	85	188	7	543
Number of radios													
Portable	13	6	10	6	5	4	5	6	56	36	29	3	179
Cabinet	23	14	20	16	4	2	-	11	85	34	36	2	247
Schools using radio for instruction	7	7	20	9	7	5	3	13	74	58	59	5	267
Percent of schools using radio for instruction	20.00	38.89	54.06	50.00	53.85	55.56	100.0	52.00	70.48	68.24	32.46	71.42	49.81
Programs used													
B.C.School Broadcasts	6	7	20	9	7	5	3	11	73	58	59	5	263
Columbia School of the Air	3	1	1	1	2	1	-	-	3	1	-	-	13
Speeches	12	3	2	5	3	-	-	3	19	2	-	-	49
Number of rooms used for radio	199	102	59	168	84	15	14	32	392	164	118	8	1355
Types of programs desired													
Health	2	-	2	1	-	-	-	1	2	2	2	-	12
Guidance	1	-	3	1	-	-	-	1	1	2	1	-	10
Social studies	3	1	3	2	-	1	-	3	2	5	7	-	27
Literature	-	-	1	1	-	1	-	3	2	2	8	-	18
Science	3	1	4	1	-	-	-	3	1	1	7	-	21
Would use programs at different times: Already using	3	2	8	1	2	1	1	3	8	21	14	2	66
Not using	-	-	-	1	-	-	-	-	1	-	2	-	4

## Excerpts

"Radio of value in remote districts, teaches children cooperation and gives them added incentive when they know other children are listening to the same program and doing the same work." (5)

"Present radio programs pathetic, very little use." (9)

"Radio programs are not a teaching aid hence of little use." (4)

"Radio programs from Canadian Broadcasting Corporation at present childish stuff." (6)

"Radio programs are not parallel with the course of studies." (3)

"Very doubtful as to the value of radio programs in the classroom." (8)

"Radio is of little value, particularly difficult to fit into the timetable." (23)

"Do not like intense dramatization on radio, would be better if more matter of fact." (6)

"The children in my school all know what 'Little Orphan Annie' and 'Tarzan' are doing. I think broadcasters of school programs should study the methods and tactics of these 'blood and thunder', penny 'orrible' programs which the children apparently enjoy so much." (1)

"Find the children eager to listen to the Canadian Broadcasting Corporation educational series. They are especially interested in stories of our pioneers. The news broadcast is always interesting to senior pupils." (7)

"The electrical disturbances causes the use of the radio here in the daytime to be unsatisfactory." (15)

"Radio not used because reception is poor." (8)

"As for radio education - a very definite scheme is laid down by the Department of Education with definite periods to be placed on time-table would be more satisfactory than the methods now adopted." (8)

"Why emphasize lectures on Social Studies - Why not science, good plays, debates, etc." (3)

"The radio broadcasts are improving in B.C. Show promise." (6)

"There are radios in most homes and we discuss topics in class." (7)

"Would like good sound educational programs." (18)

"In general we find visual aids better than auditory aids but only so far as we are capable of judging." (1)

#### Comments

Nearly fifty percent of the British Columbia schools use the radio for instruction. Practically all of the schools in which the radio is used for instruction, listen to the Canadian Broadcasting Corporation "School of the Air", a few use the "Columbia School of the Air." Quite a number of schools which do not use the radio for instruction listen to speeches of national importance. The table shows that only four other schools would use the radio for instruction if the programs were scheduled at different times, this shows that the present broadcast hour is quite satisfactory.

A number of schools expressed a desire for new types of programs; among these were programs dealing with health, guidance, social studies, literature, and science. There were quite a number of comments by the principals of the various schools. A large number



stated that reception was very poor in their district due to dead areas and weather conditions. Several principals felt that the school broadcasts do not adhere closely enough to the course of studies and hence are of little value in the classroom. Some feel that the broadcasts are childish, others do not like the intense dramatization of the programs. The principals of the larger schools find it difficult to fit the radio broadcasts into the school time-table and therefore use the radio very little for instruction.

The value of the radio in the classroom will be dealt with in the recommendations.

### Stereoscopes

#### Question 12

How many stereoscopes do you have in your school? \_\_\_\_\_

How many stereographs? \_\_\_\_\_

What uses are made of the stereoscope? \_\_\_\_\_

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The stereoscope is probably the least used, though it is a most useful visual aid. This aid is the only one which shows third dimension, and for this reason should prove very useful in the classroom.



TABLE XVI  
STEREOSCOPIES

	High School			Junior H.S.			Superior		Elementary			Total	
	City	Mun.	Rur.	City	Mun.	Rur.	Mun.	Rur.	City	Mun.	Rur.	Com.	
Number of schools replying	35	18	37	18	13	9	3	25	105	85	188	7	543
Number using stereoscopes	-	1	1	-	1	-	-	-	1	1	1	-	6
Number of stereographs	-	10	30	-	10	-	-	-	60	2	30	-	142
Uses of stereographs													
Measure visual efficiency-	-	-	1	-	-	-	-	-	1	-	1	-	3
Science	-	1	-	-	1	-	-	-	-	-	-	-	2
Curiosity	-	-	-	-	-	-	-	-	-	1	-	-	1

## Excerpt

"The stereoscope is a curiosity only." (1)

## Comments

Stereoscopes and stereographs are used very little as is shown in the table. Only six schools use stereoscopes and there are only 142 stereographs.

There are two uses made of the stereoscope: First, to demonstrate third dimension in general science; and second, to measure visual efficiency.

There could be a much greater use made of this aid particularly in mathematics, geography, and industrial arts, as stereographs supply the concept of depth which is lacking in ordinary diagrams and pictures.

## Microprojectors

## Question 13

How many microprojectors do you have in your school? \_\_\_\_\_

What makes? \_\_\_\_\_

How many microscopes? \_\_\_\_\_

How many microscope slides? \_\_\_\_\_

Where do you obtain your microscope slides? \_\_\_\_\_

Do you prepare any microscope slides? Yes \_\_\_\_\_ No \_\_\_\_\_

The microprojector is the newest type of projector and has not, as yet, assumed its rightful place of use in the science classroom. Most school administrators agree that to effectively teach science one microscope should be provided for every four students. A micro-

projector and one good microscope is better than many microscopes, because while reducing the cost it increases teaching efficiency.

TABLE XVII  
MICROPROJECTORS AND MICROSCOPES

	High School			Junior H.S.			Superior		Elementary			Total	
	City	Mun.	Rur.	City	Mun.	Rur.	Mun.	Rur.	City	Mun.	Rur.	Com.	
Number of schools replying	35	18	37	18	13	9	3	25	105	85	188	7	543
Number using microprojector	5	1	-	2	1	-	-	-	-	-	-	-	9
Number of microscopes	120	52	45	48	42	4	1	10	14	8	10	-	354
Number of microscope slides	3761	866	661	1951	605	87	-	79	296	19	213	-	8538
Source of slides													
Bought	28	14	21	14	10	4	-	9	8	4	9	-	121
Borrowed	-	1	3	-	-	-	-	-	1	-	1	-	6
Number of schools making slides	19	5	14	8	4	4	-	3	3	1	4	-	65
Percent of schools making slides	54.29	27.78	37.84	44.44	30.77	44.44	-	12.00	2.86	1.18	2.13	-	11.97



## Comments

The microprojector is used by only nine schools, seven of these being city schools. This type of projector is not likely to be used except where biology is taught and usually this is only in the large city centers.

The table shows that there is a total of 354 microscopes owned by the schools replying. The 124 schools with microscopes own a total of 8538 slides or an average of sixty-nine slides per school.

There are only six schools which borrow microscope slides from the visual libraries. Most schools buy their slides and in addition about half of these make some of their own slides.

## Flat Pictures

## Question 14

Has your school a flat picture library? Yes \_\_\_\_\_ No \_\_\_\_\_  
How many mounted pictures? (approx.) \_\_\_\_\_  
How many models: Commercially made? \_\_\_\_\_  
home made? \_\_\_\_\_  
How many specimens: Commercially made? \_\_\_\_\_  
home made? \_\_\_\_\_

There is no excuse for any school not using audio-visual aids because of limited budgets, as collections of flat pictures, models, and specimens can be assembled at little or no cost. These materials if scientifically collected and catalogued could, if necessary, take the place of other visual aids.

TABLE XVIII  
FLAT PICTURES, MODELS, AND SPECIMENS

	High School			Junior H.S.			Superior		Elementary			Total	
	City	Mun.	Rur.	City	Mun.	Rur.	Mun.	Rur.	City	Mun.	Rur.	Com.	
Number of schools replying	35	18	37	18	13	9	3	25	105	85	188	7	543
Number of schools with a flat picture library	17	6	11	13	6	4	1	4	78	14	30	-	184
Percent of schools with a flat picture library	48.57	33.33	29.73	72.22	46.15	44.44	33.33	16.00	74.29	16.47	15.95	-	33.89
Average number of pictures per library	632	914	540	721	1025	1000	75	162	557	381	236	-	534
Number of schools with models	17	3	2	9	2	2	-	4	17	4	8	-	68
Percent of schools with models	48.57	16.67	5.41	50.00	15.38	22.22	-	16.00	16.19	4.70	2.66	-	12.52
Total models commercially made	167	12	126	82	4	126	-	15	137	16	153	-	838
Total models home made	156	6	6	95	6	6	-	50	130	21	91	-	567
Number of schools with specimens	15	3	3	7	2	-	-	2	15	3	5	-	55
Percent of schools with specimens	42.87	16.67	8.11	38.89	15.38	-	-	8.00	14.29	3.53	2.66	-	10.13
Total commercially made	333	28	6	350	11	-	-	-	210	-	6	-	944
Total specimens home made	4625	400	110	4450	400	-	-	203	1773	31	170	-	12162

### Excerpts

"100 pictures at a time can be borrowed from the Travelling Library Commission." (3)

"Sound films not as good as flat pictures for elementary schools." (4)

"Flat pictures the very best teaching aid available." (7)

"I make charts and posters besides the murals the children make for themselves." (1)

### Comments

Table XVIII shows that a third of the schools have a flat picture library with an average of 534 pictures per library. In the city schools there are 108 out of 158 schools with flat picture libraries. Table XXII shows that another seventy-four teachers have their own pictures which they use in their classrooms.

About one-eighth of the schools have models with an average of twenty models per school. It is interesting to note that there are nearly as many home-made models as there are commercially made models.

Ten percent of the schools have specimens with an average of about four hundred specimens per school. Quite a number of the schools have museums.

### Summary of Chapter IV

Sound motion picture projectors are used in 25.25 percent of the schools replying to the questionnaire. Silent projectors are used

in 9.58 percent of the schools, chiefly those which do not have sound projectors. Most of the schools borrow their films from the University of British Columbia or the Vancouver School Board. About sixty percent of the screens owned by the schools are flat white. Lantern slide projectors are used in 18.05 percent of the schools, which own a total of 4800 slides. The film strip projector is most popular, there being 37.39 percent of the schools with this type of projector. The radio is used for instructional purposes in 49.81 percent of the schools. Only six schools use stereoscopes. There are 33.89 percent of the schools with flat picture libraries averaging 534 pictures per library.



## CHAPTER V

### SUPERVISION, ADMINISTRATION, AND THE OPERATION OF EQUIPMENT

## CHAPTER V

## SUPERVISION, ADMINISTRATION, AND THE OPERATION OF EQUIPMENT

In this chapter questions one, and fifteen to twenty inclusive from the questionnaire "Report on Audio-Visual Aids" are discussed. These questions deal with administration of the audio-visual program, and the use and evaluation of the audio-visual aids.

As in the previous chapter, the questions will be given, followed by the reason for asking the question, the results in tabular form, excerpts from the replies and finally by comments.

## Directors

## Question 1

Do you have a director or person in charge of audio-visual education in your school? Yes \_\_\_\_\_ No \_\_\_\_\_

Name \_\_\_\_\_ Position or Title \_\_\_\_\_

What percentage of his time does he spend on audio-visual education? \_\_\_\_\_ %

What special training does he have for this position? \_\_\_\_\_

Most authorities in the field of audio-visual education agree that in order to get the greatest value from audio-visual aids in the schoolroom, it is necessary that each school have someone in charge of these aids, either full-time or part-time, depending on the size of the school. It is important that this person have some training in audio-visual aids and techniques, so that he may take complete charge of organizing and supervising an effective audio-visual program. The purpose of this first question was to determine the number of schools

with a person in charge of audio-visual education, his position or title, and the amount of time spent on this work.

TABLE XIX

## DIRECTORS

	High School			Junior H.S.			Superior		Elementary			Total	
	City	Mun.	Rur.	City	Mun.	Rur.	Mun.	Rur.	City	Mun.	Rur.	Com.	
Number of schools replying	35	18	37	18	13	9	3	25	105	85	188	7	543
Number of schools with director or person in charge	11	5	2	10	2	1	-	1	37	1	3	-	73
Number with special training	-	-	-	2	-	-	-	-	3	-	-	-	5
Number with specific time for audio-visual education	2	2	1	4	1	1	-	1	13	1	2	-	28
Percentage of time spent	20.00	6.50	5.00	16.00	10.00	5.00	-	14.00	9.00	4.00	4.50	-	10.00
Percent of schools with director or person in charge	31.42	27.78	5.41	55.56	15.39	11.11	-	4.00	35.24	1.18	1.60	-	13.44
Position or title													
Director	1	-	-	2	-	-	-	-	9	-	-	-	12
Principal	1	1	1	2	-	-	-	-	17	1	2	-	25
Vice-principal	1	-	1	-	-	1	-	1	5	-	1	-	10
Science teacher	6	2	-	4	-	-	-	-	4	-	-	-	16
Social studies teacher	2	-	-	2	-	-	-	-	2	-	-	-	6
Counsellor	-	2	-	-	2	-	-	-	-	-	-	-	4



## Excerpt

"Special courses in Visual Education, Rutgers University 1934-35." (1)

## Comments

Of the 543 schools replying to the questionnaire only seventy-three or 13.44 percent have either a director or person in charge of audio-visual education. Only twelve schools have a director; all the rest have either the principal or a teacher in charge. Fifty-eight out of the seventy-three directors or persons in charge, including all twelve directors, are in city school systems. It is interesting to note that one third of those in charge of audio-visual education are principals.

Of the seventy-three persons in charge of audio-visual programs only twenty-eight have time allotted for this work, the average amount of time being ten percent.

Only five of these directors or persons in charge have had a special training in audio-visual education.

## Operation and Booking

## Question 15

How many rooms can be used for projection of pictures? \_\_\_\_  
 Who operates the projection equipment? \_\_\_\_  
 Who books the films, film strips, lantern slides, etc.?

Are they booked; for a year in advance? \_\_\_\_ for a term?  
 \_\_\_\_ for a month? \_\_\_\_ as required? \_\_\_\_  
 Can rented and borrowed films etc. be scheduled to fit into  
 classes at the time they are needed? Yes \_\_\_\_ No \_\_\_\_

Do they arrive on schedule? Yes \_\_\_\_\_ No \_\_\_\_\_  
Are study guides available with the films, etc.? \_\_\_\_\_  
Yes \_\_\_\_\_ No \_\_\_\_\_  
Do the teachers use the study guides? Yes \_\_\_\_\_ No \_\_\_\_\_

In order to get the best results from the projection of films and slides it is necessary to have a properly equipped room and a good operator. Films, film strips, and lantern slides to be most effective should be booked by the director or person in charge in advance, in order that they may be scheduled to fit into the proper place in the curriculum. Study guides should be provided to assist the teacher in getting the most from these aids.

TABLE XX  
OPERATION AND BOOKING

	High School			Junior H.S.			Superior		Elementary				Total
	City	Mun.	Rur.	City	Mun.	Rur.	Mun.	Rur.	City	Mun.	Rur.	Com.	
Number of schools replying	35	18	37	18	13	9	3	25	105	85	188	7	543
Average number of rooms per school used for projection	3.47	3.00	3.56	4.11	3.22	3.33	1.33	1.67	2.41	2.72	2.19	-	2.94
Equipment operated by													
Student	12	1	-	5	2	-	-	-	1	-	1	-	22
Teacher	17	11	15	13	7	6	2	3	76	14	21	-	185
Principal	1	1	-	-	-	-	1	1	6	3	2	-	15
Director	-	-	-	-	-	-	-	-	1	-	-	-	1
Operator on circuit	2	-	1	-	-	-	-	2	-	1	3	-	9
Visual materials booked by													
Director	2	-	1	2	-	1	-	-	9	1	1	-	17
Principal	4	2	1	2	2	1	1	1	27	5	4	-	50
Teacher	21	10	14	13	6	4	2	5	46	12	22	-	155
Committee	1	1	-	1	1	-	-	-	2	-	-	-	6
Visual material booked													
For a year in advance	-	-	-	-	-	-	-	1	1	-	-	-	2
For a term	1	1	1	2	1	-	-	-	1	-	1	-	8
For a month	3	2	1	3	2	-	-	2	12	1	4	-	30
As required	24	10	14	13	6	6	3	3	70	17	22	-	188

TABLE XX (cont'd)  
OPERATION AND BOOKING

	High School			Junior H.S.			Superior		Elementary			Total	
	City	Mun.	Rur.	City	Mun.	Rur.	Mun.	Rur.	City	Mun.	Rur.	Com.	
Can visual material be scheduled to fit into the curriculum as needed													
Yes	26	11	15	17	9	5	3	6	78	16	25	-	211
No	2	2	1	1	-	1	-	-	6	2	2	-	17
Do materials arrive on schedule													
Yes	27	12	15	17	9	5	3	6	84	18	27	-	223
No	1	1	1	1	-	1	-	-	-	-	-	-	5
Are study guides available													
Yes	24	9	9	16	7	2	3	3	79	14	22	-	188
No	4	4	7	2	2	4	-	3	5	4	5	-	40
Do teachers use guides													
Yes	13	4	9	10	2	2	1	3	37	8	22	-	111
No	15	9	7	8	7	4	2	3	47	10	5	-	117



## Excerpts

"Student operation; projectionist, stage hand, and messengers." (3)

"Since we have to borrow the projector from the Education Office, six miles away, and the films from Vancouver, our use of these aids is irregular and infrequent." (2)

"Not all teachers see film, science teacher may show social studies film." (2)

"Study guides not practical as they are written in the United States and do not fit into the course of studies." (7)

"Should be more of each film, so that films will be available as required." (2)

"Pamphlets sent out by the University of British Columbia, Extension Department do not cover educational films shown." (4)

"National Film Board films too difficult for elementary school children." (3)

"At present we do not make a great deal of use of the film slide projector as our slides are procured from Vancouver." (2)

"It is a chore to black-out and install chairs, this mitigates against regular programs. Most teachers would use aids if it was less trouble to put on a program." (4)

"Teachers use study guides, if opportunity is given to study them before showing material." (3)

## Comments

The schools using projectors have an average of 2.94 rooms which

can be used for projection.

In the 232 schools in which projection equipment is used, the equipment is operated by the teacher in 185 schools, student operators in twenty-two schools, the principal in fifteen schools, and the director in only one school.

In 185 schools the teacher orders the audio-visual materials, in fifty the principal, and in seventeen the director. It is interesting to note that in six schools the materials are ordered by a committee of teachers.

One hundred eighty-eight schools order audio-visual materials as required, thirty schools order for a month at a time, eight schools for a term, and two schools book materials for the whole year.

Practically all schools found that they could schedule aids to fit into the curriculum as needed. In all but five cases the material arrived on schedule.

One hundred eighty-eight schools stated that study guides were available with audio-visual materials but only 111 made use of these guides. From the excerpts it is noted that some teachers felt that the guides were not practical as they did not fit the curriculum, others stated that the guides did not arrive in time to study prior to the showing of the audio-visual materials.

#### Budget for 1941-42

#### Question 16

How much money was spent on rental of audio-visual aids in 1941-42? \$ \_\_\_\_\_

How much money was spent on transportation of audio-visual aids? \$ \_\_\_\_\_

How much money was spent on repairs and maintenance?

\$ \_\_\_\_\_

What new audio-visual equipment was added in 1941-42? \_\_\_\_\_

Cost \$ \_\_\_\_\_

Was this purchased on an average annual budget? \_\_\_\_\_

What was your budget for audio-visual education in 1941-42?

\$ \_\_\_\_\_

The questions dealing with the budget for audio-visual education were asked in order to determine the amount being spent at present by the schools of British Columbia for rental of aids, transportation, maintenance, and the purchase of new equipment.



TABLE XXI  
BUDGET FOR 1941-42

	High School			Junior H.S.			Superior		Elementary				Total
	City	Mun.	Rur.	City	Mun.	Rur.	Mun.	Rur.	City	Mun.	Rur.	Com.	
Number of Schools Replying	35	18	37	18	13	99	3	25	105	85	188	7	543
Number of Schools with an Audio-Visual Budget	*12	6	3	*11	6	2	-	2	*26	4	3	-	75
Percent of Schools with Audio-Visual Budget	34.29	33.33	8.11	61.11	46.15	22.22	-	8.00	24.76	4.71	1.60	-	13.81
Total of Audio-Visual Budget	\$ 476.50	146.00	87.50	312.50	92.50	7.50	-	40.00	722.50	80.50	12.50	-	\$1969.00
Average Per School with Audio-Visual Budget	\$ 38.96	24.33	29.17	28.41	15.42	3.75	-	20.00	27.77	20.13	4.17	-	\$26.25
Number of Schools without Audio-Visual Budget but spending money on Audio-Visual Aids	3	3	10	2	-	2	-	2	-	11	11	-	45
Number of Schools Paying Rental	14	9	10	13	5	4	-	4	26	6	14	-	105
Total Spent on Rental	\$312.00	131.50	34.50	190.50	46.50	14.50	-	33.00	470.50	40.00	57.00	-	\$1330.00
Average per School	\$22.28	14.61	3.45	14.65	9.30	3.63	-	8.25	18.10	6.67	4.07	-	\$12.67
Number of Schools Paying Transportation on Aids	11	7	8	10	5	3	-	4	26	7	12	-	93
Total Spent on Transportation	\$59.90	74.77	11.90	27.90	7.00	5.00	-	7.65	98.20	8.65	18.35	-	\$319.32
Average per School	\$5.44	10.68	1.49	2.79	1.40	1.67	-	1.91	3.78	1.24	1.53	-	\$3.43
Number of Schools Spending Money for Maintenance	8	5	1	6	3	-	-	1	20	3	-	-	47
Total Spent on Maintenance	\$76.40	28.50	4.00	19.65	7.50	-	-	6.00	76.25	21.00	-	-	\$239.30
Average per School	\$9.55	5.70	4.00	3.27	2.50	-	-	6.00	3.81	7.00	-	-	\$5.09
Total Cost of New Audio-Visual Equipment	\$850.00	600.00	235.00	-	-	-	-	116.50	50.00	96.42	40.00	-	\$1987.92

\* Does not include the Vancouver Schools.



## Excerpts

"Films and projector cost far too much for the teacher to pay out of her own pocket as is necessary, if they are borrowed from the University of British Columbia." (1)

"The School Board has a hard time finding the wherewithal to pay the teacher's salary and to provide the minimum amount of supplies with which to carry on." (27)

"We have no audio-visual equipment and as there are so many other things needed, the possibility of obtaining any would be so far in the future." (36)

"School raises all the funds for Visual Education." (7)

"Our 'Board' up to the present has not given any assistance to the school for visual education. The projector and film slide projector were secured through our own efforts, with much assistance from the Parent Teacher Association." (9)

"School board still is of the opinion that money spent on this type of equipment is being spent on 'extras' for this school, not as being something necessary and as part of modern equipment." (5)

"Certainly there are ways and means by which the inadequately equipped rural and small city high schools can be made to enjoy the benefits of the large city schools. Special 'grants' might be provided." (2)

"Greatest need is education of school boards to value of audio-visual aids and of course the ever-present problem of finance." (3)

"Cost of slides, projectors, etc., from the University of British Columbia, especially transportation is too high to avail ourselves of

them." (7)

"I have only fifteen pupils and at present they are discussing ways and means of raising money to buy a battery radio but the people of the community belong to the middle ages as far as modern education is concerned and consider such things as unnecessary." (1)

"Sound picture projector was purchased, the students' council put up \$300 and the School Board \$100. A \$250 public address system was bought by the students." (1)

#### Comments

Fourteen percent of the schools replying to the questionnaire have a budget for audio-visual education. This excludes the sixty-nine Vancouver schools which are provided for by the Vancouver School Board's Visual Education Department. The average budget per school was \$26.25. Another forty-five schools spent money on audio-visual aids although they had no funds budgeted for this purpose. The average amount spent by the 105 schools for rentals was \$12.67. Ninety-three schools paid an average of \$3.43 for transportation charges on the aids. Forty-seven schools spent an average of \$5.09 on maintenance. A total of about \$2000.00 was spent for new equipment, about one half of this was for the purchase of three new sound projectors. One of the tables in Appendix C shows the new equipment which was added by the schools during 1941-42.

From the excerpts it is noted that a number of schools were unable to rent audio-visual aids because no funds were provided for

this purpose. Many of the school boards are still of the opinion that audio-visual equipment is a "frill" of modern education rather than an integral part of it. They therefore deem it unnecessary to spend any money for this equipment or the rental of aids. In a large number of schools the aids were purchased by money raised either by the students and teachers, or by the Parent Teacher Association.

### Maintenance

#### Question 17

Who repairs and maintains your audio-visual equipment?

How much equipment have you that is not being used?  
(list) \_\_\_\_\_

Is it in good condition? Yes \_\_\_\_\_ No \_\_\_\_\_

It is interesting to note who repairs and maintains the audio-visual equipment in the various schools. Many schools may have equipment that is not being used, it is important to know if this equipment is in good condition.

TABLE XXII

## MAINTENANCE

	High School			Junior H.S.			Superior		Elementary			Total	
	City	Mun.	Rur.	City	Mun.	Rur.	Mun.	Rur.	City	Mun.	Rur.	Com.	
Number of schools replying	35	18	37	18	13	9	3	25	105	85	188	7	543
Equipment repaired by													
Vancouver School Board	13	-	-	4	-	-	-	-	49	-	-	-	66
Dealers	6	3	1	3	4	-	-	-	11	2	1	-	31
Radio service men	7	4	2	1	3	1	-	4	8	5	5	-	34
Principal	-	1	1	1	-	-	-	-	2	1	1	-	7
Science teacher	1	2	1	4	1	1	-	-	3	2	1	-	16
Shop teacher	1	-	1	1	-	1	-	-	1	-	1	-	6
Teacher	1	-	2	1	-	1	-	-	3	1	1	-	10
Others	3	1	1	1	-	-	-	2	6	-	10	-	24
Equipment not being used													
Lantern slide projector	6	1	-	-	-	-	-	-	8	-	-	-	15
Silent projector	-	-	-	-	-	-	-	-	4	1	-	-	5
Film strip projector	-	-	-	-	-	-	-	-	1	-	-	-	1
Public address system	-	1	-	-	-	-	-	-	-	-	-	-	1
Opaque projector	-	-	-	-	-	-	-	-	1	-	-	-	1
Microscope	-	-	-	-	-	-	-	-	-	-	1	-	1
Radio	-	-	-	-	-	-	-	-	1	-	-	-	1
Screen	1	-	-	-	-	-	-	-	-	-	-	-	1



## Comments

The Vancouver School Board, Visual Department services all equipment in the Vancouver schools. The other schools have their equipment serviced by the dealer, local radio service man, principal, teachers, or by others such as janitors, school board members, or members of the community.

There is a considerable amount of equipment in good condition not being used. There are fifteen lantern slide projectors which are not being used, chiefly due to the cost of transportation of slides from Vancouver. The five silent projectors that are not being used are 35 mm. and educational films for this type of projector are difficult to obtain. In addition to the above equipment there is a film strip projector, public address system, screen, opaque projector, microscope, and radio which are not being used.

## Teacher Training and Evaluation

## Question 18

Are teachers being trained in the use of audio-visual aids?

Yes \_\_\_\_\_ No \_\_\_\_\_

Is this training compulsory? \_\_\_\_\_ Voluntary? \_\_\_\_\_

Are the teachers interested in learning audio-visual aid techniques? Yes \_\_\_\_\_ No \_\_\_\_\_

How many of your teachers have specific training in the use of audio-visual aids? \_\_\_\_\_

How many of your teachers have their own audio-visual aids which they use in their classes? \_\_\_\_\_ List \_\_\_\_\_

What audio-visual aids do the teachers find most useful?

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

Since there are no courses offered in audio-visual education to the teachers of the province it is important to determine the number

of schools offering their teachers some training in the use of audio-visual aids, and whether this training is voluntary or compulsory.

The writer is anxious to know how many teachers are interested in learning audio-visual techniques, the number of teachers with any specific training, and the number who have aids of their own which they use in their classroom. The final part of this question was asked to ascertain which audio-visual aids the teachers find most useful, and to see whether these varied from one type of school to another.

TABLE XXIII  
TEACHER TRAINING AND EVALUATION

	High School			Junior H.S.			Superior		Elementary			Total	
	City	Mun.	Rur.	City	Mun.	Rur.	Mun.	Rur.	City	Mun.	Rur.	Com.	
Number of schools replying	35	18	37	18	13	9	3	25	105	85	188	7	543
Number of schools with teachers interested in audio-visual education	16	6	15	9	8	4	2	5	37	15	35	-	152
Number of teachers with specific training	21	5	4	11	4	3	-	-	13	-	8	-	69
Number of teachers with their own aids													
Microscope	-	-	1	-	-	-	-	-	-	-	1	-	2
Flat pictures	1	-	10	-	8	4	3	-	14	25	9	-	74
Lantern slides	2	-	-	-	-	-	-	-	-	-	-	-	2
Records	4	-	-	-	-	-	-	-	3	2	2	-	11
2"x2" slides	-	-	-	-	-	-	-	-	2	-	-	-	2
Silent projector	2	1	-	1	-	-	-	-	1	-	-	-	5
Camera (Motion picture)	-	1	-	-	-	-	-	-	-	-	-	-	1
Radio	-	-	-	-	-	-	-	-	1	-	2	-	3
Lantern slide projector	1	-	-	-	-	-	-	-	-	-	1	-	2
2"x2" slide projector	-	-	-	-	-	-	-	-	2	-	-	-	2
Film strip projector	1	-	-	-	-	-	-	-	-	-	-	-	1
Phonograph	-	-	2	-	-	1	-	-	-	-	3	-	6
Amplifier	-	-	-	-	-	-	-	1	-	-	1	-	2

TABLE XXIII (cont'd)  
TEACHER TRAINING AND EVALUATION

	High School			Junior H.S.			Superior		Elementary				Total
	City	Mun.	Rur.	City	Mun.	Rur.	Mun.	Rur.	City	Mun.	Rur.	Com.	
Number of schools training teachers	8	2	4	6	2	1	-	2	26	4	3	-	58
Teacher training													
Compulsory	1	-	-	1	-	-	-	-	6	-	-	-	8
Voluntary	7	2	4	5	2	1	-	2	20	4	3	-	50
Percent of schools training teachers	22.86	11.77	8.33	33.33	16.67	11.11	-	8.00	24.67	4.76	1.62	-	10.63
Aids ranked in order of preference													
Sound films	1	1	-	2	2	-	-	4	2	5	5	-	
Film strips	2	1	2	1	4	1	3	-	1	2	1	-	
Flat pictures	3	4	1	3	1	2	2	3	3	4	3	-	
Radio programs	5	6	3	4	5	3	1	1	4	1	2	-	
Phonograph records	7	3	4	5	2	3	-	2	5	3	4	-	
3 $\frac{1}{4}$ "x4" lantern slides	4	-	-	5	-	-	-	-	7	7	6	-	
2"x2" slides	6	-	-	-	-	-	-	-	9	-	-	-	
Silent films	8	5	-	7	6	-	-	-	6	6	-	-	
Microscope slides	9	-	-	8	-	-	-	-	-	-	-	-	
Museum	10	-	-	-	-	-	-	5	-	-	-	-	
Models	-	-	-	-	-	-	-	-	8	-	-	-	
Blackboard	-	-	-	-	-	-	-	-	-	-	7	-	



## Excerpts

"Teachers not convinced of the value of visual aids." (8)

"Teachers receive audio-visual instruction at staff meetings." (4)

"Teachers are not well trained in handling this type of learning (radio)." (3)

## Comments

The table shows that only 10.63 percent of the schools have in-service teacher training in audio-visual aids or techniques. In practically all cases the training is entirely voluntary. The teachers, in thirty percent of the schools replying to the questionnaire, were interested in audio-visual education. Only sixty-nine teachers in the 543 schools have had any special training in the use of audio-visual aids.

Quite a number of the teachers in British Columbia have their own aids which they use in their classrooms. The largest number of these teachers have their own flat picture collections.

Considering the average preference of all types of schools, the table shows that film strips and flat pictures are the most popular aids. These are followed by radio programs, records, and sound films. The smaller, more poorly equipped schools prefer flat pictures, radio programs, and records, whereas the larger, better equipped schools prefer sound films and film strips. This is shown in the tables in Appendix C, which are a breakdown of item "Aids in order of preference" from Table XVIII.

## Method of Using Aids

## Question 19

Do the teachers preview films, slides, etc. before showing them to the class? Yes \_\_\_\_\_ No \_\_\_\_\_

Do they pick out vocabulary difficulties and explain before using audio aids? Yes \_\_\_\_\_ No \_\_\_\_\_

Are the students given a chance to discuss and estimate the value of films and slides after showing? Yes \_\_\_\_\_ No \_\_\_\_\_

Are the visual aids used to introduce a topic \_\_\_\_\_, as the subject matter of the topic \_\_\_\_\_, or as a review of the topic \_\_\_\_\_?

Are records kept of the use, and the relative educational value of the films and slides? Yes \_\_\_\_\_ No \_\_\_\_\_

Are the available films and slides reasonably adequate for your needs? Yes \_\_\_\_\_ No \_\_\_\_\_

Are the films made with a proper balance between entertainment and instruction? Yes \_\_\_\_\_ No \_\_\_\_\_

Are most of the films obtainable; too simple \_\_\_\_\_, just right \_\_\_\_\_, or too difficult \_\_\_\_\_?

Authorities agree that in order to get the maximum value from films, film strips, and slides the teachers should preview the films and pick out vocabulary difficulties. After the showing of the film the students, particularly in the higher grades, should be allowed to discuss the film and the teacher should file a report on the educational value of the film. It is essential to get the reaction of the teachers as to the suitability and adequacy of materials available in order to assist the film libraries in providing the best possible teaching material.

TABLE XXIV  
METHOD OF USING AIDS

	High School			Junior H.S.			Superior		Elementary			Total	
	City	Mun.	Rur.	City	Mun.	Rur.	Mun.	Rur.	City	Mun.	Rur.	Com.	
Number of schools replying	35	18	37	18	13	9	3	25	105	85	188	7	543
Do teachers preview films													
Yes	24	7	13	15	4	6	1	4	56	10	22	-	162
No	3	5	1	3	4	-	1	3	27	9	4	-	60
Do teachers pick out vocab- ulary difficulties													
Yes	21	6	12	13	1	3	2	2	52	11	18	-	141
No	6	4	1	5	3	1	-	4	31	5	3	-	63
Do students discuss and estimate value of films													
Yes	20	8	12	12	3	3	2	6	20	13	24	-	123
No	7	3	2	6	5	3	-	1	63	6	2	-	98
Are visual aids used to													
Introduce the topic	5	2	9	5	2	4	1	-	13	4	10	-	55
Subject matter	24	9	10	16	6	4	1	4	76	12	16	-	178
Review	7	4	8	7	2	3	1	3	17	3	12	-	67

TABLE XXIV (cont'd)

## METHOD OF USING AIDS

	High School			Junior H.S.			Superior		Elementary				Total
	City	Mun.	Rur.	City	Mun.	Rur.	Mun.	Rur.	City	Mun.	Rur.	Com.	
Are records kept of visual aids used													
Yes	16	8	6	13	4	1	-	1	64	10	10	-	133
No	11	4	8	5	4	5	2	6	19	9	16	-	89
Are available aids adequate													
Yes	22	10	12	15	8	5	2	2	66	17	18	-	177
No	5	2	2	3	-	1	-	5	17	2	8	-	45
Are films made with the proper balance between entertainment and instruction													
Yes	27	12	11	17	8	6	2	7	81	18	23	-	212
No	-	-	3	1	-	-	-	-	2	1	3	-	10
Are films obtainable													
Too simple	3	-	3	1	-	1	-	-	4	-	2	-	14
Just right	23	12	10	17	8	5	2	7	62	17	20	-	183
Too difficult	1	-	1	-	-	-	-	-	17	2	4	-	25



## Excerpts

"Films usually arrive half an hour before being used, so little chance to preview." (5)

"Much time elapses in getting our films from Vancouver. Hence it is sometimes difficult to get full use of materials." (6)

"Fifty percent of the films, etc. are inadequate. Great improvement in films and the film strips in the last two years." (4)

"Not always an opportunity to preview films as it generally means adding days rental cost to 16 mm. films." (2)

"No time to preview films as they are usually brought out the same day that they are going to be used. But records of previous years give idea of value of pictures." (5)

"Do not have time or facilities to preview pictures." (17)

## Comments

The table shows that seventy-three percent of the schools showing films, film strips, and slides preview the materials. Sixty-nine percent of the schools showing sound films pick out and explain vocabulary difficulties. Students are given a chance to discuss the value of the films, film strips, and slides in forty-five percent of the schools. In the majority of the schools the audio-visual materials are used as the subject matter rather than as the introduction or review of the topic.

Only sixty percent of the schools keep records of the audio-visual aids used. Most of the schools reported that the available aids are

adequate, that there is a proper balance between entertainment and instruction and that most of the films are not too difficult or too simple for the students.

The teachers in several schools stated they did not have either the time or facilities for previewing audio-visual materials. The main reasons given were that the audio-visual materials arrived just prior to the time for showing, and that previewing would require keeping the materials an extra day and would increase the rental.

#### Aids Desired in Order of Preference

##### Question 20

List in order of preference the audio-visual equipment that you would like to have in your school:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

The only purpose of this question was to determine the audio-visual equipment desired by the teachers in the various types of schools. This might give us an indication of what equipment would be in the schools if the finances were available.

TABLE XXV.

## AIDS DESIRED IN ORDER OF PREFERENCE

	High School			Junior H.S.			Superior		Elementary			Total	
	City	Mun.	Rur.	City	Mun.	Rur.	Mun.	Rur.	City	Mun.	Rur.	Com.	
Number of schools replying	35	18	37	18	13	9	3	25	105	85	188	7	543
Aids in desired order of preference													
Sound projector	1	1	1	1	2	1	-	1	1	1	1	1	
Film strip projector	2	3	3	3	3	-	1	6	2	2	4	-	
Opaque projector	5	2	7	2	1	-	2	-	3	5	8	-	
Radio	5	6	2	4	4	2	-	5	5	3	1	-	
Lantern slide projector	-	-	4	-	-	3	-	4	9	7	5	-	
Phonograph	-	-	6	7	-	-	-	2	7	4	3	2	
Flat picture file	-	-	5	-	-	-	-	6	-	7	6	3	
Microprojector	3	8	-	4	-	-	-	-	-	-	-	-	
Public address system	4	5	-	4	6	-	3	-	4	6	-	-	
Silent projector	7	8	9	-	-	-	-	3	10	9	7	-	
Microscope	8	7	7	-	-	-	-	8	6	10	-	-	
Screen	-	4	-	-	4	-	-	-	7	-	-	-	

### Comments

In dealing with this question it must be taken into consideration that many schools already own certain equipment which they would not list as aids desired, therefore the aids already owned must be noted before any conclusions can be drawn from the aids preferred. Over all types of schools the sound projector was most frequently desired. It was followed in turn by the film strip projector, the radio, the opaque projector, and the phonograph.

The tables in Appendix C give a clear picture of the situation as they show the equipment already being used by each type of school, together with the equipment desired.

### Summary of Chapter V

Only 13.44 percent of the schools replying to the questionnaire had a director or person in charge of audio-visual education. Practically all the schools ordered their audio-visual materials as required. About one half of the schools used the available study guides. Fourteen percent of the schools, other than the Vancouver Schools, had a budget for audio-visual education, with an average budget of \$26.25 per school. Fifteen lantern slide and five silent projectors, all in good condition, were not being used. Ten percent of the schools had in-service teacher training in audio-visual education. The teachers on a whole considered that film strips and flat pictures were the best audio-visual aids. Seventy-three percent of the schools using audio-visual materials previewed, and sixty percent kept records of the aids



used. The new equipment which most schools would like to have were the film strip and sound projectors.

CHAPTER VI

SUMMARY AND RECOMMENDATIONS

## CHAPTER VI

## SUMMARY AND RECOMMENDATIONS

In the preceding three chapters the data gathered from the survey of audio-visual education in British Columbia have been presented. Now the results of the survey will be brought together in a composite picture to determine its present status and to offer suggestions for the improvement of audio-visual education in British Columbia.

The survey showed that sound projectors were used in 25.25 percent of the schools and silent projectors in 9.58 percent. As noted in the tables practically all of the projectors were owned by the city schools which are in larger areas of population. Some method must be evolved which will allow the schools in the rural areas the use of a sound or silent projector. This could be accomplished by a number of schools in the district going together and purchasing a projector which would be used jointly by these schools. This is the method at present being used in the Matsqui, Abbotsford, Sumas Area, and it is proving very satisfactory for the fourteen schools concerned. A second method might be for the Provincial Department of Education to assist the schools in the purchase of audio-visual equipment by the granting of subsidies. A similar method to this is at present being used to develop school libraries. In this case the Department of Education grants the school an amount equal to that furnished by the school board for its library, up to a maximum of fifty dollars a year.

All the sound projectors in the British Columbia schools can be

used for either sound or silent films. Therefore when the schools which own only silent projectors are added, the result is that more schools are able to project silent than sound films. However, the lending libraries are more or less discontinuing the purchase of silent films because of insufficient demand. They claim that the teachers request only sound films. This is due probably to a lack of education on the part of the teachers to the value of silent films. They consider that because the sound film is newer and more modern it is a better teaching aid, and that it should be used entirely as it is an improvement over the silent film. Most audio-visual authorities agree that both the silent and sound film have certain definite valuable functions to perform and that each has its place. In the review of literature it was pointed out that Clark<sup>62</sup> found that sound films of the lecture type in which all explanations were given by an unseen speaker were not as effective as identical silent films in which all explanations were given by captions. Going still further, Westfall<sup>63</sup> concluded that a teacher's explanations were better than captions. In view of the above statements, the silent film should take its place alongside the sound film and should be used where sound is not necessary to the understanding of the subject matter. This would greatly reduce the cost to the lending

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<sup>62</sup>Clark, C. C. Sound motion pictures as an aid in classroom teaching. School Review 40: 669-81, November 1932.

<sup>63</sup>Westfall, L. H. Verbal accompaniments to educational motion pictures. New York, Teachers College, Columbia University, 1931.



libraries and the schools as silent films cost only about one-third as much as sound films. Lending libraries should stock silent films and encourage their use, and the teachers should be instructed as to when and where silent films should be used.

The National Film Board operates three Information Circuits in British Columbia, in towns where there is no moving picture theatre. The purpose of these circuits is to educate the public to Canada's part in the war. These circuits are operated by the Department of Extension, University of British Columbia, which takes advantage of the presence of the operator and equipment in these towns to present an educational film for the school children. This film can only have a general educational value as it is usually shown to all grades in the school at one time. It could not fit into the curriculum, unless perhaps for one or two classes if the teacher has gone to the trouble to particularly request a film and has prepared the pupils for it. These National Film Board circuits have therefore little educational value to the students except for general information about Canada's war effort and about general educational topics. The teachers receive pamphlets two weeks in advance outlining the educational film to be shown, and therefore can prepare their pupils to some extent for the showing, but there is no chance to preview the film and to pick out vocabulary difficulties. These circuits, as operated at present by the University of British Columbia, cannot be considered sufficient to satisfy the audio-visual needs of the schools in these rural areas.

The results indicated that only 18.05 percent of the schools use

the  $3\frac{1}{4}$ "x4" lantern slide projector. Fifteen schools owned lantern slide projectors which they were not using. There must be some reason that the lantern slide projector is used so little in the schools of British Columbia. Although they are known to have several disadvantages they have many advantages over other types of visual aids. The chief disadvantage as noted by the schools at present not using lantern slides was the high transportation charges. These glass slides are heavy and if the school plans to rent slides the transportation costs are practically prohibitive for regular use. Other disadvantages of the aid is that slides are made of glass and are breakable, slides are large and require considerable space for storage, and commercially made slides are too expensive for the school to purchase in any quantity.

The greatest advantage of the glass slides over the projected visual aids is that due to the great brilliance in the projected image, they may be used in a semi-darkened room, light enough for the students to make notes while the slides are being shown. The ease of operation is a factor which should make this projector popular with the teachers. Another marked advantage of these slides is that the image remains steady and can be left on the screen for any desired length of time. Another advantage of the  $3\frac{1}{4}$ "x4" lantern slides, which can eliminate some of the disadvantages listed above is the fact that these slides can be made easily and at a low cost by the director of audio-visual education or by the teachers themselves. The help of students might even be enlisted to prepare slides. By making a

collection of these home made slides, it eliminates the necessity of renting slides and thus the high transportation costs. A worthwhile collection can be made at a reasonable cost without resorting to the purchase of expensive commercially made slides.

Only a small percentage of the schools of British Columbia use 2"x2" colored or uncolored slides. This is not surprising as this type of aid is one of the newer and therefore one of the least familiar. When teachers are acquainted with the value of this aid, these slides should in the near future become one of the most popular visual aids because of their convenience and ease of production. These 2"x2" slides have considerable advantages over the 3 $\frac{1}{4}$ "x4" slides; the smaller more convenient size lowers the cost of transportation of the rented slide, reduces the amount of storage space necessary for the slides, and makes the slide less easily broken in handling.

These 2"x2" slides can easily be made by the teacher or director of audio-visual education. The slides are made by mounting frames of either negative or positive 35 mm. film or Kodachrome film, photographed with any miniature camera, between 2"x2" glass cover slides or specially prepared cardboard mounts. Kits can be purchased which contain all the necessary materials for mounting this type of slide.

Colored 2"x2" slides are particularly valuable as they show the object in its natural color. Some lessons are made more effective when color is used.

These 2"x2" slides can be shown either by a special 2"x2" slide projector, by the Society for Visual Education Tri-Purpose projector, or

by an adapter on a  $3\frac{1}{4}$ "x4" lantern slide projector. The latter is not satisfactory as the size of the image projected on the screen is small and the image is not bright enough.

Both the University of British Columbia, Extension Department and the Vancouver School Board, Visual Department are producing their own 2"x2" slides and are encouraging the schools to use them. A few schools have taken up the production of these slides and are starting their own collections. Other schools would likely follow their example if the teachers were acquainted with their usefulness and ease of production.

The film strip projector is the most popular piece of visual equipment in the schools of British Columbia. More schools own film strip projectors or borrow them than any other equipment except the radio and phonograph. Also a large number of these schools own collections of film strips.

The chief reasons for the popularity of the film strip projector are: the projector is easily operated; it can be moved readily from room to room; it is inexpensive to purchase, being the least expensive of the projection equipment; the film strips are light and compact and can be shipped or stored without danger of breakage. Film strips are most valuable teaching aid because: they are short and do not introduce too much new material at one time; they usually present a definite topic concisely and clearly and the picture can be held on the screen as long as required. Film strips can be used to illustrate most lessons as there is a large variety of film strips available. Both of British Columbia's audio-visual libraries have large collections



of film strips, which can be borrowed at a low rental and with little added cost for transportation. Many film strips are used frequently in the school during the term; these should be collected by the school audio-visual department so that they will be available at all times. Film strips can be purchased at an extremely low cost and it is therefore advisable for the schools to own at least the most used film strips.

The opaque projector is possibly one of the most valuable pieces of visual equipment because of the wide variety of free or inexpensive pictures and specimens which it can project. This machine should be especially useful in the elementary schools where pictures and specimens are needed so extensively in the illustration of lessons. The opaque projector makes it possible for the whole class to view the same object at the same time without the necessity of the confusion which arises when the pictures or specimens are too small for the whole class to view at one time.

The opaque projector has two decided disadvantages: First, the room must be completely darkened in order that the image be distinct; second, large pictures or specimens must be shown in part as the maximum area which can be projected is 6"x6". However, every school should have at least one well darkened projection room and in this room the opaque projector should present no difficulty in operation.

Practically every school in British Columbia makes use of the phonograph at least for physical education and music appreciation. Many of the schools have large collections of records; a few schools borrow them. The Vancouver School Board, Music Department has a large

collection which is available only to the Vancouver schools. The University of British Columbia, Extension Department and the Victoria schools have phonograph libraries provided for by Carnegie grants. The teachers of the Mid-Island schools have organized a circulating library of phonograph records for the use in their schools.

Most teachers are well acquainted with the value of phonograph records for music appreciation and physical education but further acquaintance with the value of records for English literature and foreign languages would not be amiss.

In the near future electrical transcriptions, because of their value in recording complete fifteen minute programs for the use at a future time, will probably be used quite extensively in the schools. At present very few schools use transcriptions, possibly because of the necessity of having special equipment for playing them.

Recording equipment is another piece of equipment which has not been used to any extent in the schools. Recorders are valuable for the teaching of music and speech, particularly for speech correction. Large schools at least should own or have the use of equipment for the playing of electrical transcriptions and the making of records. This equipment could be made available to the other schools by the audio-visual libraries.

About fifty percent of the schools in British Columbia use the radio for instruction and many others use it only for important broadcasts. Up until June 1942 the British Columbia School Broadcasts

were designed primarily for the elementary, superior, and junior high schools but this year a series of programs was arranged for the high schools. There are a number of problems which will have to be overcome before the radio will be entirely satisfactory as a teaching aid. The major difficulty is that of arranging the school timetable to fit the broadcast hour. This is particularly difficult to adjust in the larger city schools where timetables are not easily adjusted as several classes of the same grade cannot be taking the same subject at the same time. The mountainous terrain of British Columbia presents another problem as in many areas, because of the mountains, reception is poor. This difficulty is being overcome to some extent with the use of small repeater stations throughout the province.

At present the Canadian Broadcasting Corporation sends to the schools a bulletin outlining the programs to be given with suggestions for using them. This is not sufficient; the teacher should be given instruction as to the proper method of using the school broadcasts. The radio is a comparatively new teaching aid and in order that the students may gain the maximum value from the programs they must be instructed in the methods of listening to the radio. There are several points to be observed in using the radio for instruction. The teacher should study the bulletin outlining the program and prepare the children for the broadcast. The teacher should set up the radio and have the pupils ready for the start of the program; the students should be trained to pick out important points and make notes during the broadcast; after the completion of the program the class should

be assigned further activities on the subject, either reading or projects. Finally, the students should be tested on the material contained in the broadcast and the follow-up activities.

The school broadcasts should prove particularly valuable to the small schools where possibly the teacher is required to teach subjects for which she is not thoroughly qualified. The teacher can use the school broadcast to bring to the class experts in the various subjects. The teacher can then build several lessons around these broadcasts.

At present a number of teachers feel that the broadcasts are not suitable since they are prepared by professional script writers who are not connected with the schools. These broadcasts should be prepared by teachers or committees of teachers. These teachers would be better acquainted with the curriculum and the important points to be emphasized. At the same time they should be able to present it in a manner more suitable for the grade level.

Very little use is being made of the stereoscope in the British Columbia schools. Three schools use stereographs for testing visual efficiency and two schools use them for demonstration in general science. Greater use could be made of this visual aid in subjects where third dimension must be shown. This aid could be used effectively in the teaching of solid geometry and in illustrating geography lessons. The chief disadvantage of the stereoscope is that it must be used individually, therefore many stereoscopes would be necessary for effective classroom use.

The newest type of visual equipment is the microprojector which



is already being used in several British Columbia schools. This projector when it becomes better known should be used extensively in the schools as it eliminates the necessity of schools purchasing many expensive microscopes. One microprojector can take the place of a battery of microscopes and at the same time be more satisfactory. By projecting the slide on the screen the teacher can point out the important details and be sure that the whole class has observed them.

The microscope is a necessity for the teaching of the biological sciences; therefore all the larger schools and some of the smaller have from one to many microscopes. Good microscope slides can be prepared by a well trained science teacher, or rented from visual libraries, or purchased from the scientific supply houses. Schools should have a permanent collection of all the more important slides.

The writer would strongly recommend the adoption of the microprojector as it reduces the cost of microscopes and slides and it is a better teaching aid than the microscope.

Only one-third of the schools have flat picture libraries which is far too few. Every school should have a flat picture file in which pictures for every subject on the curriculum are filed. These pictures should be attractively mounted on chip board of uniform size, with an adhesive which will not wrinkle the paper. These should be filed in an orderly fashion in a suitable cabinet. Each picture should have a brief caption and on the back of each there should be a list of activities or questions. The teacher should encourage pupils to collect pictures for the library. There are many points to be noted

in the selection of pictures. The picture must be clear and be a good illustration. If for classroom use they must be large enough for those at the back of the room to clearly see the details or if too small they should be shown in an opaque projector, placed on a table at the back of the room, or posted on a bulletin board.

The advantages of flat pictures are numerous: There is a wealth of picture magazines, maps, charts, etc. available at little or no cost. Flat pictures can be adapted to all subjects in the curriculum. The pictures are readily available at all times and can be used as often and as long as desired.

Models are little used in the schools, even though they are one of the better visual aids because they give the student an exact concept of the object. Cut away models of various types of machines can be used in physics classes to illustrate the mechanism which is usually covered in the actual machine. Models are most extensively used in Home Economics and Industrial Arts.

Specimens and samples are other visual aids which are readily available to the schools. Every school should have a museum which can be developed from a small beginning by encouraging the students to collect all types of suitable specimens. These specimens should all be carefully mounted and labelled.

Flat pictures, models, and specimens are probably the best visual aids for the elementary grades and even for the higher grades. Even the smallest and poorest school can have effective visual education if they have a good flat picture file and a collection of models and

specimens. Where possible pictures, models, and specimens should be used together to illustrate the lesson.

Of the 543 schools replying to the questionnaire, only seventy-three had a director or person in charge of audio-visual education. Most authorities agree that every school should have a director or person in charge, as a successful audio-visual program cannot be carried on without supervision. Again it is noted from the results that only twenty-eight of the seventy-three directors or persons in charge were allowed time for audio-visual education during school hours. It is unfortunate that the director or person in charge should have to shoulder his regular teaching load and audio-visual education in addition. Every director or person in charge should be allowed at least one or more periods a day to administer the audio-visual program, depending on the size of the school. Of the seventy-three directors or persons in charge only five had any special training. The majority of these directors or persons in charge were interested and had read and experimented with audio-visual education without having taken any special courses. The person in charge of the audio-visual program in a school should have taken a general course in audio-visual education similar to the one outlined in Appendix B, and in addition courses in Supervision and Administration of Audio-Visual Education and Photography. The qualification and duties of the director are outlined in the next chapter.

Most schools had several rooms in which projectors could be used. The ideal situation is to have the individual classrooms equipped for

projection but this is naturally impossible because of the expense. Therefore one or several classrooms should be equipped for projection. The room used for projection should never be the auditorium as this creates the "show" atmosphere. In the next chapter there is a plan for the setting up of a room for projection.

In most schools the projection equipment is operated by the teacher and in about ten percent of the schools by the students. In the upper grades it is usually possible to select some mechanically-minded students to operate the projectors. Student operation has the advantage that it leaves the teacher free to devote his entire attention to the presentation of the lesson. It would be advisable for the directors or persons in charge of audio-visual education to consider the use of students in their audio-visual education program. In the proposals in the following chapter the place of the student in the school's audio-visual program is discussed.

The booking of the audio-visual material from the various lending libraries presents several problems. The results show that in about three-quarters of the British Columbia schools the teachers ordered the materials. This is primarily because few schools have a director or person in charge of the program. The ideal situation would be for the teachers to submit their requests for required audio-visual aids to the director or person in charge who would in turn order all the aids for the school from the lending library. In this way there is only one person from each school dealing with the lending library, which prevents confusion in the ordering and returning the aids. The survey showed



that in the majority of the schools the audio-visual materials were ordered as required, in very few schools were they booked in advance. If the school is to be assured of the use of the aid when required it should be ordered well in advance. The director should check with each teacher as to the films, film strips, slides, etc., that he would require during the term, and prepare a list and forward it to the lending library. If the directors ordered the material in advance the lending library could see which films, slides, etc. were in greatest demand and could provide extra copies of these aids. The lending libraries on the whole prefer to have their users order a term in advance in order that they may arrange a schedule for their aids.

Even though in most of the British Columbia schools the audio-visual aids were ordered as required, the teachers found that they could be obtained whenever required to fit into the curriculum. If there were a larger number of users outside of Vancouver where at least one week would have to be allowed for the shipping, showing, and returning of materials, aids would have to be ordered in advance to assure their arrival at the desired time. Most schools found that the materials arrived on schedule. It is essential that every school using audio-visual aids should return the aid promptly to avoid disrupting the schedule of the lending library.

The budget question cannot be complete since no figures were available for the Vancouver schools. The reason for this is that the cost of visual aids is borne only in part by the school board, the student body and the Parent Teacher Association of the individual

schools raise much of the money spent on audio-visual education. Of the remainder, seventy-five schools reported having an audio-visual education budget. The average amount spent annually is about fourteen dollars per school. Another forty-five schools rented audio-visual aids but had no specific amount budgeted by the school board for audio-visual purposes. All schools should have a budget for audio-visual education prepared by the director or person in charge. It should adequately provide for maintenance, replacements, and transportation in addition to the rentals and purchase of new aids.

An extremely important phase of the audio-visual program is the maintenance of the equipment. The Vancouver School Board, Visual Department has a skilled technician who services all the equipment owned by the Vancouver schools. Of the remainder of the schools, about one-quarter has its audio-visual equipment serviced by the dealer who sold the equipment, about a third, by the local radio service man, and the others by the school staff. The survey shows that the schools exclusive of Vancouver spent a sum total of two hundred fifty dollars for maintenance during 1941-42. If there was a greater number of schools using audio-visual equipment it might be possible for the lending libraries to employ a technician who would repair the equipment of all of the schools. If the proposed program for a centralized audio-visual education system in British Columbia as outlined in the next chapter were adopted, the person in charge of each office would be a skilled technician, capable of repairing all the equipment. Audio-visual equipment should not be repaired by anyone who is not familiar

with projectors. The director or person in charge should keep the equipment oiled, cleaned, and make replacements of worn out lamps, etc., but all adjustments and overhauling should be done by the dealer or a skilled technician.

From the results of the survey it is clearly seen that teacher education is a phase of audio-visual education which has been neglected. The results show that in only fifty-seven out of five hundred forty-three schools or a little more than ten percent of the schools of British Columbia, the teachers were offered instruction in the use of audio-visual aids. In eight of these schools the training was compulsory. Only sixty-nine teachers in all the schools replying to the questionnaire had any special training whatsoever in audio-visual education. Table XIX shows that the teachers use the aids poorly as in only sixty out of two hundred twenty schools did the teachers preview the films, etc. In sixty-three schools the teachers picked out vocabulary difficulties. In ninety-eight schools they allowed the students to discuss the value of the aid. Study guides were available with most of the visual materials but of the schools answering, only about one-half used the guides. These guides are issued along with the aid in order to give the teacher further information. These pamphlets are of great value to the teacher and the lending libraries should see that they are available for every aid irrespective of whether it is a film, film strip, set of slides or a set of flat pictures. The teacher should be impressed with the value of these study guides and be shown the proper way to use them.

The teachers in only one-third of the schools were interested in audio-visual education. This means that considerable work must be undertaken to make audio-visual aids more popular with the teachers, as well as to teach them the proper techniques and methods of using the aids. The teachers are not entirely to blame for not using audio-visual aids but rather the administrators of the schools. It is this latter group that should be sold on the desirability of using audio-visual aids. Once the administrators and supervising principals are won over, then the teachers will follow suit more quickly. Some of the administrators are still not convinced of the value of audio-visual aids or more use of them would be made in the teacher training institutions and in the schools. The teacher is dependent on the director for leadership in the audio-visual program in the school. The director should acquaint the teachers with the value of audio-visual education and make suggestions for the use of audio-visual aids in each classroom. A number of teachers have audio-visual aids of their own, which they use in their classrooms. It is very helpful for the teachers to have their own audio-visual material but no school board should expect the teachers to provide these aids.

In the survey the results showed that 133 out of 222 schools kept records of the audio-visual materials used. This is quite a high percentage but every school using audio-visual materials borrowed from a lending library should keep records for the following reasons: first, it prevents reordering materials which were unsatisfactory; second, it gives the teacher the chance to study the report of the previous



showing and to check over vocabulary difficulties, etc.; third it makes it possible for the teacher by looking over the reports to select the correct aids for the grade level. The teacher who has not used aids before, can refer to the catalogue and then check the files to see if the aid had been previously used in the school and if it was suitable for his grade and subject. With regard to records, each school should keep a file of all audio-visual aids which have been used. These records should contain the following information. First, an evaluation of the aid, giving the name, type, grade level, the subjects for which it is most suitable, and the various mechanical aspects of the aid. These evaluations should be checked each year and new points added. Second, a lesson plan for the use of the aid should be prepared outlining the method of use, vocabulary difficulties, and follow-up activities. Third, tests which might be given in connection with the should be included. Fourth, a copy of the study guide for the aid where available should be placed with the record. The ideal situation would be for each school to have on file a mimeographed copy of the study guide for each aid; this guide would be sent to the school by the lending library the first time the aid is ordered. Often the study guide and the aid arrive on the morning of the showing, which does not allow the teacher time to prepare for the showing unless complete records are available. In every school audio-visual aids should be previewed. This can be done by the individual teacher or by a committee of teachers. The results of the preview should, as mentioned before, be kept for future reference. The first time any audio-visual aid is

used in the school it may be necessary to keep the aid an extra day in order to have time for previewing. The additional rental is money well spent if the teacher is able to use the aid more effectively. If on previewing an audio-visual aid, it is found to be unsuitable the teacher should not show it to the class.

An effective audio-visual program requires that every audio-visual aid have its proper place in the program, that no aid be over-used and none neglected.

### Summary of Chapter VI

The teachers of British Columbia must be made to realize that silent films are in many cases just as effective as sound films. A plan must be worked out whereby these projectors would be available to all schools.

The  $3\frac{1}{4}$ "x4" lantern slides should not be discarded as they are a useful aid which can be readily prepared by the teacher. The 2"x2" glass slide is an excellent teaching aid because of its convenient size and ease of production.

The film strip projector is used extensively in the British Columbia schools. The schools should be encouraged to start collections of the more frequently used film strips.

The opaque projector should prove especially valuable in the elementary schools because of its ability to show a wide variety of flat pictures and specimens.

Electrical transcriptions should become more popular in the schools

since they can be used to present programs which were broadcast at a time inconvenient for use in the classroom.

Recording devices should be purchased by the audio-visual libraries and be rented to the schools for speech correction and the recording of special features.

If the radio is to be used effectively for instruction the teachers must be trained in the proper methods of using the programs. The school broadcasts should be prepared by committees of teachers and not by persons unfamiliar with the school curriculum.

Microprojectors should be purchased by the schools in the future instead of microscopes because it reduces the cost and they are better teaching aids.

Flat picture libraries should be just as important as the regular library in the school. The schools should have a collection of models, and at least a small museum.

Every school should have a director or person in charge of the audio-visual program.

Students in the junior and senior high schools should be trained to operate the projection equipment.

Schools should book the regularly used aids a term in advance.

Overhauling and repairing of projection should be undertaken only by an expert technician and not by the teachers.

Teachers must be given instruction in the correct technique of using audio-visual aids.

A definite amount of money should be provided by the school board

for audio-visual education.

Every school should keep a record of all the audio-visual aids used in the school as a reference for the selection of aids in the future.

The teachers should preview new material before using it in the classroom and make an evaluation for the school records.



## CHAPTER VII

### PROPOSALS FOR THE ORGANIZATION OF A CENTRALIZED PROGRAM OF AUDIO- VISUAL EDUCATION IN BRITISH COLUMBIA

## CHAPTER VII

## PROPOSALS FOR THE ORGANIZATION OF A CENTRALIZED PROGRAM OF AUDIO-VISUAL EDUCATION IN BRITISH COLUMBIA

This chapter will include a discussion of several topics requiring particular consideration in the organization of an effective audio-visual education program in British Columbia. These topics will be discussed under the headings: Centralized System of Audio-Visual Education for British Columbia; Teacher Training; The Director; Setting Up a Room for Audio-Visual Aids; and Student Operation.

## Centralized System of Audio-Visual Education for British Columbia

At present the Department of Education in British Columbia has no definite audio-visual program for the schools. The two film libraries are at present operated by the University of British Columbia Extension Department, and the Vancouver School Board. These libraries, which serve practically the entire province, are located in Vancouver. This means that there is no supervision of the audio-visual program in the schools. This parallels the situation which exists in a school without a director. With a condition such as this, audio-visual education has developed in a haphazard manner without any proper introduction.

In British Columbia, the Provincial Department of Education should institute an audio-visual department in charge of a Provincial Supervisor. This department should operate a central office for the

administration of the audio-visual program in the British Columbia schools. This could take over both of the present libraries, unless arrangements were made with the Vancouver School Board to continue in operation and thus exclude the Vancouver schools from the province-wide system. The Vancouver School Board, Visual Education Department is at present operating efficiently and could be allowed to continue, although the most satisfactory plan would be to have all schools in the province-wide system.

The provincial audio-visual department should set up a central office in Vancouver, with branch offices throughout the province. The distribution of the school population of British Columbia is shown in Table XXVI, compiled from the school attendance figures for 1941-42.

TABLE XXVI

THE DISTRIBUTION WITH RELATION TO THE MAJOR AREAS OF THE BRITISH COLUMBIA  
SCHOOL POPULATION IN 1941-42

District	High School	Junior H.S.	Superior	Elementary	Total
Vancouver	10978	5661	-	27515	44154
Vancouver Island	3743	1158	725	12929	18555
B. C. Coast	424	311	491	2211	3437
Main Line of C.P.R.	728	279	237	2471	3715
Okanagan Valley	1494	1263	31	5930	8718
Kootenay	1253	1698	347	8358	11656
Northern B. C.	728	339	531	5320	6918
Fraser Valley	3831	3609	1080	13289	21809



The chief areas of population in order of size are Vancouver, Fraser Valley, Vancouver Island, Kootenays, Okanagan, and Northern British Columbia. The two smaller areas, the British Columbia Coast and the Main Line of the Canadian Pacific Railway, as well as the Fraser Valley can easily be handled from Vancouver. Branch libraries should therefore be established at Victoria for Vancouver Island, Vernon for the Okanagan, Trail for the Kootenays, and Prince George for Northern British Columbia. It would be quite possible for the Okanagan and Kootenays to be served from one branch library located perhaps at Penticton. The branches could be established in the high school in each of the above cities, with the school providing the facilities in exchange for the use of audio-visual aids. There are a number of reasons why these branch libraries should be established. The distance between Vancouver and some of the outlying parts of the province is so great that at least two weeks would be lost in transportation alone. This means that the maximum usage is not gained from the audio-visual aid. The cost of this transportation is usually high, which makes the cost of audio-visual aids for the small school in the rural areas is extremely high. If the use of audio-visual aids is going to be encouraged and increased, more copies of each film, film strip, slide, etc. will be necessary. These extra copies could be placed in the branch libraries for distribution. The branch libraries would be very convenient for the schools in the district as it will make possible the obtaining of audio-visual aids on short notice or if the need arises suddenly. Again audio-visual equipment could be

distributed from branch libraries more easily than from the central library. Shipping of equipment requires careful packing, considerable time and is quite expensive.

The Supervisor of the Provincial Department of Audio-Visual Education would have headquarters at the central library in Vancouver. He should be highly trained audio-visual expert with a thorough knowledge of all fields of audio-visual education as well as administrative and supervisory ability. He should be thoroughly familiar with the school system, and have a thorough understanding of the curriculum and the principles of teaching. It will be his duty to give audio-visual education a proper introduction into the schools of British Columbia. It is therefore important that he have a pleasing personality and a direct method of presentation in order that he may convince the administrator and teachers of its value. The supervisor would administer the budget of the department and would supervise the purchase of new equipment and aids. The supervisor would issue bulletins to the teachers and make personal tours of the schools of the province where he would hold meetings with the teachers in order to assist them in the correct use of audio-visual aids. The supervisor could be an instructor of audio-visual education at the University of British Columbia and the central library could conveniently be located there.

The number required to staff the central and branch libraries would depend on the extent of the program established. The personnel should be well trained and efficient. The central office would require

quite a large staff which should include a secretary, shipping clerk, inspectors, record clerks, operators, and technicians. The necessary personnel could be sent from the central office to take charge of the branch offices as they are established. The branch offices would only look after the distribution of the audio-visual aids in their district, all finances including rental charges being handled through the central office.

The budget for this Provincial Audio-Visual Department would be made up from a grant from the Department of Education and the money collected from the schools for rentals. The grant should be based on a certain amount per pupil. This amount, depending on the extent of the program, should be approximately fifty cents per pupil. At this rate rental charges could be kept at a minimum. The rental charges would be most satisfactory if they were scaled according to the size of the school. If the schools were assessed a reasonable annual fee for audio-visual aids, they would make more use of the audio-visual aids, than if the charges were so much per film, film strip, etc. The provincial audio-visual department should make every effort to assist the smaller schools in the purchase of essential equipment.

The British Columbia School Broadcasts should be under the supervision of this department.

#### Teacher Training

In British Columbia there are no special courses in audio-visual education offered to the teachers in training at either of the two

normal schools or at the University of British Columbia. It is essential that if the teachers are to use audio-visual aids successfully and with the maximum value to the pupils they should be given instruction in the use of these aids. In the teacher training institutions in both the States of Pennsylvania and of New Jersey a course in audio-visual aids is a compulsory part of the teacher training program. It is just as necessary to provide the in-service teachers with instruction in the use of audio-visual aids. It is, however, much easier to introduce an audio-visual course into a teacher training institution where the students are on a whole younger and more susceptible to new ideas. The teachers in the schools are of all ages and philosophies and are not so ready to see the value of audio-visual methods of instruction as they have become set in their teaching habits. Most of the teachers of this type think that audio-visual equipment is too much trouble to use. Unless these teachers are convinced that audio-visual aids are of real value they will discourage the use of them by the new teachers coming into the school.

Audio-visual instruction has reached a point where it is necessary that a course in the use of audio-visual aids must be offered if this comparatively new method of instruction is to attain its proper place in the presentation of the subject matter of the curriculum. The introduction of audio-visual education has not been systematic. The teachers have commenced to use audio-visual equipment and materials without first having gained knowledge of their correct use in the schoolroom.



Teachers must not be given the false idea that audio-visual education is a subject in itself but rather that it is a method of instruction. Audio-visual aids should fit smoothly into the curriculum and not be used either as entertainment or as a means of filling in a spare period. As a result of continued misuse of these audio-visual aids, their value has been questioned by many. If this false impression is to be corrected the teachers must become acquainted with the correct way of using each of the aids, in order to get the maximum value. Teachers should know the correct place for each aid in the presentation of the material in the course of studies. Too many teachers accept motion pictures as the only aid and give no consideration to the older and often more valuable aids such as lantern slides, flat pictures, field trips, etc.

Possibly one of the most neglected phases in the use of audio-visual aids is the teacher and student preparation. Many teachers do not preview the material, pick out vocabulary difficulties, prepare lesson plans or prepare the students for the presentation of the material. Often the film, film strip, or lantern slide is used in the classroom without previous discussion or follow-up activities. Again, a large number of teachers, particularly the lady teachers, do not like to operate projection equipment. The above facts point out the need of a course in audio-visual aids and techniques both for the teachers in training and those teachers already in the schools.

It is an easy matter to reach the prospective teachers, as they can be required to take a course in audio-visual education during their

teacher training period. This course should include the proper usage of each aid in respect to subject matter and grade level, the production of audio-visual materials, and the techniques in the operation of equipment. A proposed course of study for audio-visual education, which could be offered to the students in the normal schools of British Columbia and the Department of Education of the University of British Columbia, is outlined in Appendix B.

The in-service teachers present more of a problem but they can be reached in a number of ways: First, by means of summer school courses at either the University of British Columbia, or at the British Columbia Department of Education summer schools, where the course of study outlined in Appendix B could be followed. Second, by extension classes, where the provincial supervisor would instruct the teachers in the various school districts. Third, by means of teacher's meetings, conferences, and demonstrations, under the direction of the audio-visual director within the school. The schools of a district could combine for this type of instruction. Fourth, bulletins could be distributed from the central office, in which suggestions would be offered as to ways and means of obtaining the maximum value from each aid. Finally, the provincial supervisor could address gatherings or prepare programs for teachers conventions. The teachers in the schools should be given the utmost assistance by the director or person in charge of the audio-visual program in their school.

The Director

McKown and Roberts<sup>64</sup> stated that, "The very nature of the audio-visual program is such that a director is needed, if the program is to operate smoothly and effectively."

The director or person in charge should be a person with the following qualifications: He should be interested in audio-visual education and should have taken a number of courses in the subject. He should have administrative ability because he will have to organize and supervise the audio-visual program in the school and prepare the budget. He should be thoroughly acquainted with methods of using each of the audio-visual aids and be familiar with the subject matter of all grades. He should be mechanically inclined. Above all he should have a pleasing personality in order that he may work harmoniously with the rest of the staff.

The director in the larger schools should devote his entire time to the audio-visual program. If the school is not large enough to have a full-time director, the person in charge should be allowed a certain amount of time each day. The director has many responsibilities; he must supervise the program in the school, select and prepare new aids, train teachers and encourage and assist them in the correct usage of audio-visual aids. The director or person in charge must prepare the budget for the school, decide what rentals are to be made, and what aids are to be purchased and produced. He should appoint a committee of teachers for each subject to assist in the selection of the audio-visual

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<sup>64</sup>McKown, Harry C. and Roberts, Alvin B. Audio-visual aids to instruction. New York, McGraw-Hill Book Company, Inc. 1940, p 325.



aids. The director should be ready at all times with suggestions and assistance for the teachers in using audio-visual aids.

A director should have taken the course in audio-visual education as outlined in Appendix B and, in addition, a course in Supervision and Administration, and a course in Photography.

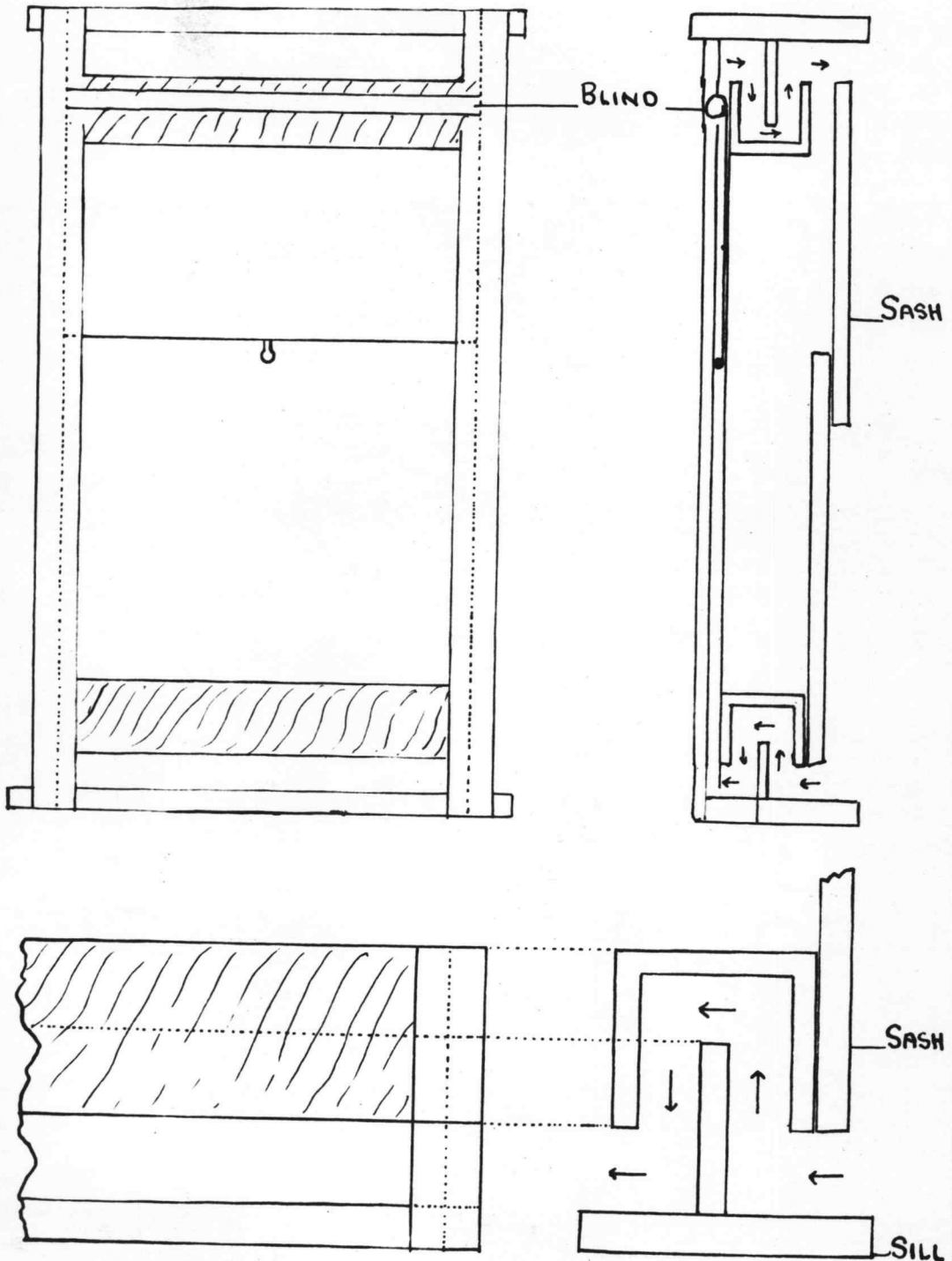
### Setting Up a Room for Audio-Visual Aids

Every school, wherever possible, should have at least one room equipped for audio-visual education. This room should be large enough to accomodate comfortably the largest class in the school. The furniture should be such that it will be suitable for all classes using the room. The desks or seats should be large enough for the oldest class in the school. Too often the room set aside for audio-visual education is furnished with all the left-over equipment in the school. If the pupil is to pay strict attention to a film, film strip, radio program, etc., he should be comfortable; otherwise he will be restless and much of the value of the aids will be lost.

In every room where projection equipment is to be used, the primary consideration is the darkening of the room. This is particularly essential if an opaque projector is to be used. Very often the room is darkened in such a way that ventilation is neglected; where this is the case the room becomes stuffy and the pupils will become restless. A system for darkening a room which makes provision for ventilation is shown in Plate II. If this method of darkening the room cannot be followed, drapery can be made to cover all of the windows. These can



# PLANS FOR DARKENING AND VENTILATING THE AUDIO - VISUAL ROOM.



be drawn together by a cord like a stage curtain. However, this method makes no provision for ventilation.

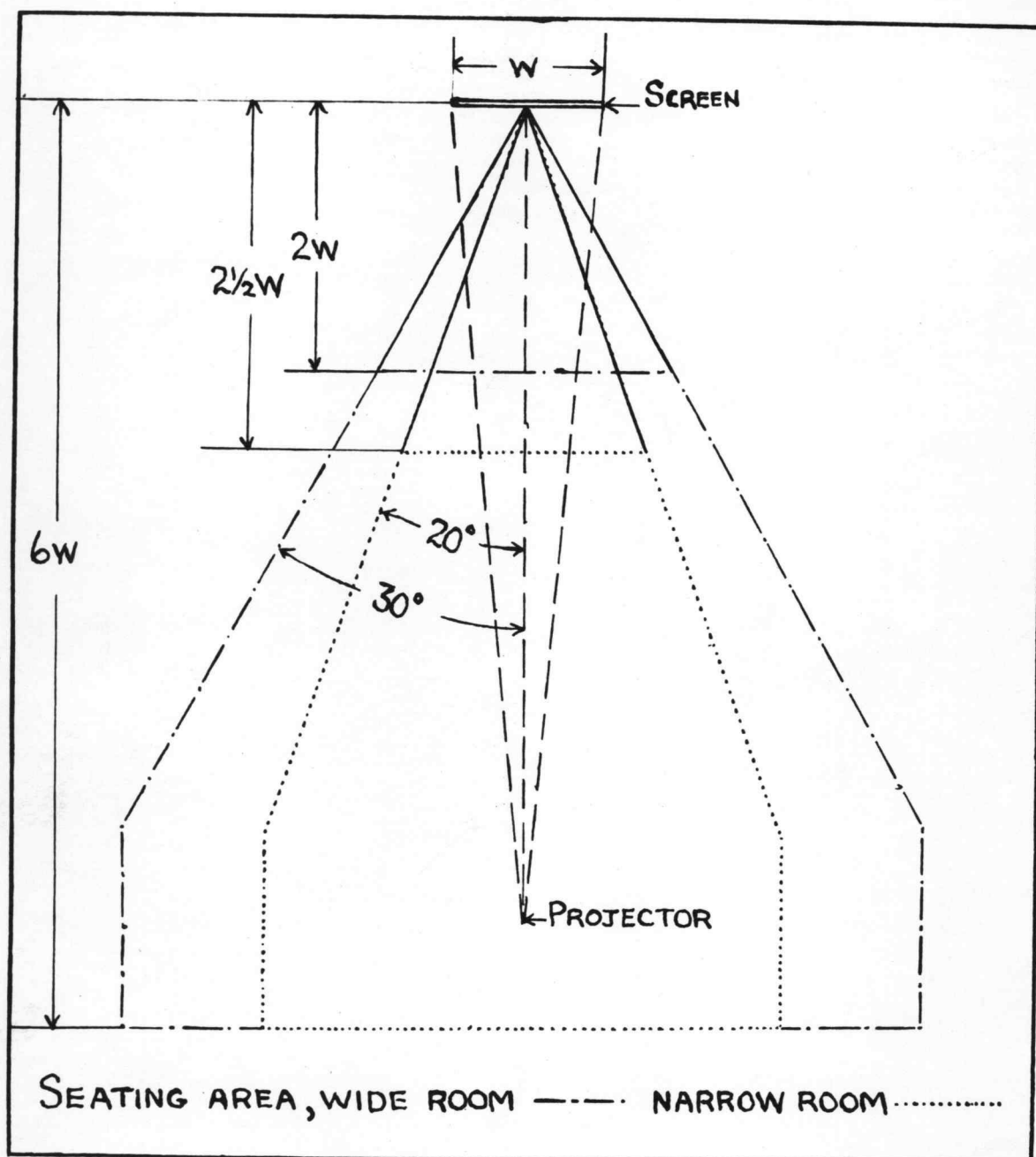
The room selected should have good acoustical properties if the best reception is to be obtained with sound films, phonograph records, and radio programs. If the room has poor acoustics, this can often be overcome with certain devices, such as drapery along one side of the room.

The next factor to be considered is the type of screen for the shape of the room. In an article in the Journal of the Society of Motion Picture Engineers<sup>65</sup>, it is stated that for a narrow room a beaded screen is most suitable and for a wide room a flat white screen. In a narrow room where the pupils can be seated in area bounded by an angle of twenty degrees on either side of the line of projection a beaded screen is satisfactory, as all the pupils within this area will receive a clear image. However, if it is necessary to seat the pupils in an angle greater than twenty degrees, a flat white screen should be used, as all pupils up to an angle of thirty degrees will receive the optimum intensity of the image. The student should not be seated closer than a distance equal to twice the width of the screen and in the case of the beaded screen preferably at a distance equal to two and one-half times the width of the screen. In both cases the students should not be seated at a distance greater than six times the width of the screen. Plate III shows the recommended seating areas for a wide

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<sup>65</sup> Committee on Non-Theatrical Equipment. Recommended procedure and equipment specifications for educational 16 mm. projection. Journal of the Society of Motion Picture Engineers 37: 1-54, July 1941.

Plate III



RECOMMENDED SEATING AREAS FOR;  
WIDE ROOM AND FLAT WHITE SCREEN,  
NARROW ROOM AND BEADED SCREEN.

room with a flat white screen, and a narrow room with a beaded screen. Metallic screens should not be used as pupils seated in certain positions will observe areas where no image is reflected, due to the scattering of light rays on the metallic surface. The screen should be mounted in a fixed position, and should be rolled up when not in use to prevent it from becoming dirty.

The room should be well equipped with electrical outlets in order that more than one piece of equipment can be plugged in at one time.

A projection stand should be built to accomodate the equipment and should have shelves for storing the aids being used, spare lamps, tools, etc. Cupboards should also be provided for storing the equipment and the audio-visual materials.

In order to avoid any confusion or overlapping in the use of the audio-visual room or rooms, a schedule should be posted on the bulletin board on which the teacher can make reservations for certain periods.

### Student Operation

In all schools except perhaps the elementary schools the director or person in charge of audio-visual education should enlist the aid of the students in the audio-visual program. One of the best methods is to organize a Visual Aids Club which would meet as one of the schools extra-curricular activities. The club counsellor should be the director of the audio-visual program in the school and he should train a selected group of mechanically-minded students in the operation of the various pieces of audio-visual equipment. The students should be



given an examination which will test their knowledge of the mechanism of the machines as well as their operation. Those who show the greatest ability should be selected as operators and the remainder should be assigned as assistants. A chief operator, selected from last year's regular operators should be in charge of the operators and assistants. There could be organized in addition a Photographic Club and a Radio Club to assist in the audio-visual program. The Photographic Club should undertake the production of slides and charts and should mount flat pictures. The Radio Club should be in charge of the setting up and operating of the radios in the school. In addition a number of the commercial students should be selected for clerical duties.

A room, preferably one which is set aside for audio-visual education should be the center of the student organization. A student should be on duty at all times to look after the filing of records, scheduling of equipment within the school, and the ordering of audio-visual materials.

A well trained student organization would be of great value in the audio-visual program within a school as it would lighten the load of the audio-visual director and would encourage the teachers to use aids, as it would eliminate the necessity of their setting up, operating, and returning equipment.

#### Summary of Chapter VII

The British Columbia Department of Education should set up a Provincial Department of Audio-Visual Education. A large central

library with several branches should be established, in charge of a well trained personnel. The minimum grant for audio-visual education should be fifty cents per pupil.

The teacher training institutions should offer a compulsory course in audio-visual education for teachers. The in-service teachers should be trained by the directors in the individual schools and by conferences with the provincial supervisor.

It is important that every school should have a director or person in charge of the audio-visual program.

At least one room should be well equipped for audio-visual education.

The students should be used in the audio-visual program both in the operation of equipment and the keeping of records.

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## APPENDIX A

## QUESTIONNAIRE AND LETTERS

Name of School \_\_\_\_\_ Date \_\_\_\_\_ 1942

Name of Principal \_\_\_\_\_ Type of School \_\_\_\_\_

No. of Teachers (full-time equivalent) \_\_\_\_\_ No. of Rooms \_\_\_\_\_

- 
1. Do you have a director or person in charge of audio-visual education in your school? Yes \_\_\_\_\_ No \_\_\_\_\_  
Name \_\_\_\_\_ Position or Title \_\_\_\_\_  
What percentage of his time does he spend on audio-visual education? \_\_\_\_\_ %  
What special training does he have for this position? \_\_\_\_\_
  2. How many sound motion picture projectors do you have in your school? \_\_\_\_\_  
What makes? \_\_\_\_\_  
Can your sound motion picture projector be used for silent films? Yes \_\_\_\_\_ No \_\_\_\_\_
  3. How many silent motion picture projectors do you have in your school? \_\_\_\_\_  
What makes? \_\_\_\_\_
  4. Where do you obtain your sound and silent films? \_\_\_\_\_  
How many films does your school own? Sound \_\_\_\_\_ Silent \_\_\_\_\_
  5. How many of each of the following types of screens do you use in your school? Metallic surface \_\_\_\_\_ Glass-beaded \_\_\_\_\_  
Flat white \_\_\_\_\_ Translucent \_\_\_\_\_
  6. How many  $3\frac{1}{4}$ " x 4" lantern-slide projectors do you have in your school? \_\_\_\_\_  
What makes? \_\_\_\_\_  
How many  $3\frac{1}{4}$ " x 4" lantern slides do you have in your school? \_\_\_\_\_  
Do you have a film-strip (75 mm.) adapter for your  $3\frac{1}{4}$ " x 4" lantern-slide projector? Yes \_\_\_\_\_ No \_\_\_\_\_  
Where do you obtain your  $3\frac{1}{4}$ " x 4" glass slides? \_\_\_\_\_  
Do you make  $3\frac{1}{4}$ " x 4" glass slides? Photographic \_\_\_\_\_  
Hand-made \_\_\_\_\_
  7. How many 2" x 2" lantern-slide projectors do you have in your school? \_\_\_\_\_  
What makes? \_\_\_\_\_  
Do you use an adapter for 2" x 2" slides on your  $3\frac{1}{4}$ " x 4" lantern-slide projector? Yes \_\_\_\_\_ No \_\_\_\_\_

Do you use an adapter for 2" x 2" slides on your film-strip projector? Yes \_\_\_\_\_ No \_\_\_\_\_ 177  
How many 2" x 2" slides does your school own? \_\_\_\_\_  
Where do you obtain your 2" x 2" slides? \_\_\_\_\_  
Do you make 2" x 2" slides? Colored \_\_\_\_\_ Black and white \_\_\_\_\_

8. How many film-strip projectors do you have in your school? \_\_\_\_\_

What makes? \_\_\_\_\_  
How many film-strips does your school own? \_\_\_\_\_  
Where do you obtain your film-strips? \_\_\_\_\_

9. How many opaque projectors do you have in your school? \_\_\_\_\_

What makes? \_\_\_\_\_  
Can you completely darken the room in which you use your opaque projector? Yes \_\_\_\_\_ No \_\_\_\_\_  
What do you show with your opaque projector? Flat pictures \_\_\_\_\_  
Geological specimens \_\_\_\_\_ Biological specimens \_\_\_\_\_  
Other materials \_\_\_\_\_

10. How many phonographs do you have in your school? \_\_\_\_\_

What makes? \_\_\_\_\_  
How many records does your school own? \_\_\_\_\_  
Do you use records for Physical Education \_\_\_\_\_, Typing \_\_\_\_\_,  
Foreign languages \_\_\_\_\_, or other subjects (list) \_\_\_\_\_  
Do you use electrical transcriptions? Yes \_\_\_\_\_ No \_\_\_\_\_  
What types? \_\_\_\_\_  
How many transcriptions does your school own? \_\_\_\_\_  
Has your school a recording device? Yes \_\_\_\_\_ No \_\_\_\_\_  
What make? \_\_\_\_\_  
What do you record? \_\_\_\_\_

11. Does your school use the radio for instruction? Yes \_\_\_\_\_  
No \_\_\_\_\_

How many radios do you have in your school? Portable \_\_\_\_\_  
Cabinet \_\_\_\_\_

What programs are used? \_\_\_\_\_

Would you make use of the radio if the present school programs were scheduled at different times? Yes \_\_\_\_\_ No \_\_\_\_\_

What types of programs would you like for use in your classrooms? \_\_\_\_\_

How many rooms are equipped for radio? (aerial, ground, and outlet) \_\_\_\_\_

12. How many stereoscopes do you have in your school? \_\_\_\_\_

How many stereographs? \_\_\_\_\_

What uses are made of the stereoscope? \_\_\_\_\_

13. How many microprojectors do you have in your school? \_\_\_\_\_

What makes? \_\_\_\_\_

How many microscopes? \_\_\_\_\_ How many microscope slides? \_\_\_\_\_ 178

Where do you obtain your microscope slides? \_\_\_\_\_

Do you prepare any microscope slides? Yes \_\_\_\_\_ No \_\_\_\_\_

14. Has your school a flat picture library? Yes \_\_\_\_\_ No \_\_\_\_\_

How many mounted pictures? (approx.) \_\_\_\_\_

How many models: commercially made? \_\_\_\_\_ home made? \_\_\_\_\_

How many specimens: commercially made? \_\_\_\_\_ home made? \_\_\_\_\_

15. How many rooms can be used for projection of pictures? \_\_\_\_\_

Who operates the projection equipment? \_\_\_\_\_

Who books the films, film-strips, lantern slides, etc.?

Are they booked: for a year in advance? \_\_\_\_\_ for a term? \_\_\_\_\_

for a month? \_\_\_\_\_ as required? \_\_\_\_\_

Can rented or borrowed films etc., be scheduled to fit into classes at the time they are needed? Yes \_\_\_\_\_ No \_\_\_\_\_

Do they arrive on schedule? Yes \_\_\_\_\_ No \_\_\_\_\_

Are study guides available with the films etc.? Yes \_\_\_\_\_

No \_\_\_\_\_

Do the teachers use the study guides? Yes \_\_\_\_\_ No \_\_\_\_\_

16. How much money was spent on rental of audio-visual aids in 1941-42? \$ \_\_\_\_\_

How much money was spent on transportation of audio-visual aids? \$ \_\_\_\_\_

How much money was spent on repairs and maintenance? \$ \_\_\_\_\_

What new audio-visual equipment was added in 1941-42? \_\_\_\_\_

Cost \$ \_\_\_\_\_

Was this purchased on an average annual budget? \_\_\_\_\_

What was your budget for audio-visual education in 1941-42?

\$ \_\_\_\_\_

17. Who repairs and maintains your audio-visual equipment? \_\_\_\_\_

How much equipment have you that is not being used? (list) \_\_\_\_\_

Is it in good condition? Yes \_\_\_\_\_ No \_\_\_\_\_

18. Are your teachers being trained in the use of audio-visual aids? Yes \_\_\_\_\_ No \_\_\_\_\_

Is this training compulsory? \_\_\_\_\_ voluntary? \_\_\_\_\_

Are the teachers interested in learning audio-visual aid techniques? Yes \_\_\_\_\_ No \_\_\_\_\_

How many of your teachers have specific training in the use of audio-visual aids? \_\_\_\_\_

How many of your teachers have their own audio-visual aids which they use in their classes? \_\_\_\_\_ List \_\_\_\_\_



What **audio-visual** aids do the teachers find most useful?

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1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

19. Do the teachers preview films, slides, etc. before showing them to the class? Yes \_\_\_\_\_ No \_\_\_\_\_  
Do they pick out vocabulary difficulties and explain before using audio aids? Yes \_\_\_\_\_ No \_\_\_\_\_  
Are the students given a chance to discuss and estimate value of films and slides after showing? Yes \_\_\_\_\_ No \_\_\_\_\_  
Are the visual aids used to introduce a topic \_\_\_\_\_, as the subject matter of the topic \_\_\_\_\_, or as a review of the topic \_\_\_\_\_?  
Are records kept of the use, and the relative educational value of the films and slides? Yes \_\_\_\_\_ No \_\_\_\_\_  
Are the available films and slides reasonably adequate for your needs? Yes \_\_\_\_\_ No \_\_\_\_\_  
Are the films made with a proper balance between entertainment and instruction? Yes \_\_\_\_\_ No \_\_\_\_\_  
Are most of the films obtainable: too simple \_\_\_\_\_, just right \_\_\_\_\_, or too difficult \_\_\_\_\_?

20. List in order of preference the audio-visual equipment that you would like to have in your school:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

REMARKS:

School of Education

Corvallis

September 20, 1942

Dear Principal:


The Department of Education at Victoria has given me, a former high school teacher in this province, permission to send the enclosed questionnaire to you and to each principal in the province in order to ascertain what Audio-Visual equipment and materials each school owns and how it is used. This information will be used in a survey which I am making of Audio-Visual Education in British Columbia and is a part of my Doctor's thesis at Oregon State College. I hope after making this survey to be able to make suggestions for the improvement of Audio-Visual Education in British Columbia.

While, at first, the array of questions in this report form may seem long and involved, I am sure that you will not find them so as you begin to fill in the blanks. In order to get a complete survey of Audio-Visual Education in British Columbia it is necessary that you fill in the form and return it even though you may have very little or no equipment and materials.

I know that September is a busy month for you but I hope that you will take a few minutes of your valuable time to complete this form as soon as possible, perhaps right now, and return it to me in care of the School of Education, Oregon State College, Corvallis, Oregon.

I wish to thank you in advance for your cooperation in filling in this form and for any comments and suggestions you may have to offer.

Sincerely yours

  
M. H. Ritchie

SCHOOL OF EDUCATION  
Oregon State College  
Corvallis, Oregon

November 13, 1942


Dear Principal:

Sometime ago I mailed you a questionnaire on Audio-Visual Education which I requested that you fill in and return to me. The returns so far have been very gratifying, but up until now I have received no reply from you. It may be that you have not had the time to complete the form and had intended to send it to me shortly. In case, however, you did not receive or have misplaced it, I am taking the liberty to send you another copy of the questionnaire.

It is very important that I have the information from your school on Audio-Visual Education as without it the survey would not be complete.

Your cooperation in sending me this completed form as soon as possible would be greatly appreciated. I wish to thank you in advance for giving me your time and assistance in making this survey.

Yours sincerely,



Myles H. Ritchie

SCHOOL OF EDUCATION  
Oregon State College  
Corvallis, Oregon

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November 13, 1942

Dear Teacher:

Sometime ago I mailed a questionnaire on Audio-Visual Education to the schools of British Columbia. The returns from the larger schools have been good, but the returns from the smaller schools have not been satisfactory. It is just as important to know the situation of Audio-Visual Education in the smaller schools as in the larger in order to make my survey complete and of value. I realize that the low return from the smaller schools was probably due to the fact that the questionnaire was long and that, having little or no equipment in their school, many of the teachers felt it a waste of their time to complete the form. If this was the situation in your case I would be very pleased if you would complete that part of the questionnaire which applies to your school, or at least drop me a card or note to let me know what equipment you have, if any, how it is used, and with any remarks that might be of assistance to me in making a survey of Audio-Visual Education.

Your cooperation in sending me this information as soon as possible will be greatly appreciated. I wish to thank you in advance for giving me your time and assistance in making this survey.

Yours sincerely,



Myles H. Ritchie



## APPENDIX B

## COURSE OF STUDY

## Course of Study

## Unit I Introduction

## A. Definition of terms

1. Audio-visual aids
2. Audio-visual materials
3. Audio-visual equipment

## B. Overview of the field

## C. Value of audio-visual instruction

1. Relation to the methods courses
2. Relation to the teachers-in-service

## Unit II The Field Trip or Excursion

## A. Purpose of the field trip

1. To acquaint the pupil with his environment
2. To enrich and supplement the curriculum
3. To teach the student cooperation in the conducting of a trip

## B. Types of trips

1. Local trip
2. Tour
3. Individual trip

## C. Preparation before the trip

1. Planning the trip
2. Making the arrangements
3. Classroom activities
4. Liabilities

## D. The actual trip

1. What to do during the trip
2. What safety measures to observe

## E. Activities after the trip

1. Discussion of the trip
2. Further classroom activities
3. Student activities
4. Evaluation

- Activities
1. Prepare a list of possible field trips in your particular teaching field.
  2. Prepare a plan for one of these proposed field trips.
  3. Carry out the above field trip.

#### References

- McKown and Roberts. Audio-Visual Aids to Instruction. pp. 181-210, 318-322.
- Hoban, Hoban, and Zisman. Visualizing the Curriculum. pp. 29-57.

#### Unit III Models, Specimens and Flat Pictures

##### A. Models

1. Value of models
2. Types of models
  - a. Commercially prepared
  - b. Home-made
3. Use of models
  - a. Individual
  - b. Class

##### B. Specimens

1. Types of specimens
  - a. Student collections
  - b. Museums
2. Preparation of specimens
  - a. Collecting
  - b. Mounting
  - c. Labelling
3. Use of specimens
  - a. Individual
  - b. Class
  - c. In connection with flat pictures

##### C. Flat Pictures

1. Value of flat pictures
  - a. Inexpensive
  - b. Ease of collection
2. Selection of flat pictures
  - a. Clearness of materials
  - b. Value in presenting a lesson
  - c. Authoritativeness of the picture
3. Mounting of flat pictures
  - a. Types of backing
  - b. Attaching of pictures
  - c. Labelling of pictures
  - d. Printing of thought questions on the reverse side

4. Use of flat pictures
  - a. Individual
  - b. Class

#### D. Stereographs

1. Advantages
2. Uses of the stereograph

#### E. Maps

1. Types
2. Uses of the various types

#### F. Blackboard

1. Uses of the blackboard

- Activities
1. Prepare a list of suitable models for your major subject.
  2. Make a model suitable for use in the classroom.
  3. Prepare a list of sources of specimens for your subject field.
  4. Start a school museum.
  5. Mount a series of pictures.
  6. Learn how to operate the opaque projector.
  7. Draw a suitable blackboard illustration.
  8. Construction of an electric map. (cf. Dent. The Audio-Visual Handbook page 32-34)

#### References

- McKown and Roberts. Audio-Visual Aids to Instruction. pp. 56-66; 72-79; 103-110; 119-121.
- Hoban, Hoban and Zisman. Visualizing the Curriculum. pp. 64-69; 87-89; 179-184.

#### Unit IV Lantern Slides

##### A. $3\frac{1}{4}$ "x4" glass slides

1. Types of slides
2. Advantages of slides
3. Disadvantages of slides
4. Production of slides

##### B. 2"x2" slides

1. Advantages of slides
2. Disadvantages of slides
3. Types of slides



#### 4. Preparation of slides

- Activities
1. Prepare a series of lantern slides illustrating the various types of slides.
  2. Prepare and mount a set of 2"x2" slides.
  3. Learn how to operate the lantern slide projector.
  4. Learn how to use the tri-purpose projector for 2"x2" slides.

#### References

- McKown and Roberts. Audio-Visual Aids to Instruction. pp. 134-38  
Dent. The Audio-Visual Handbook. pp. 51-73

#### Unit V Film Strips

- A. Advantages of film strips
- B. Production of film strips
- C. Storage and care of film strips

- Activities
1. Prepare a film strip.
  2. Select a film strip and prepare a lesson on it.
  3. Learn how to operate the film strip projector.

#### References

- Dent. The Audio-Visual Handbook. pp. 81-93.  
Hoban, Hoban and Zisman. Visualizing the Curriculum. pp. 169-175.

#### Unit VI Microprojector

- A. Value of the microprojector
- B. Uses of the microprojector

- Activities
1. Learn how to operate the microprojector.

#### References

- McKown and Roberts. Audio-Visual Aids to Instruction. pp. 316-17.

#### Unit VII Motion Pictures

- A. Silent films
  - a. Advantages
  - b. Methods of using

- B. Sound films
  - a. Advantages
  - b. Methods of using
- C. Sources of films
  - a. Sources
  - b. Evaluation
- D. Care of film
- E. Operation and care of equipment.

- Activities
1. Learn how to operate the motion picture projector.
  2. Splice a piece of film.
  3. Compile a list of films for your subject field.
  4. Evaluate a film.
  5. Prepare a lesson in which a film is used.

#### References

McKown and Roberts. Audio-Visual Aids to Instruction. pp. 146-80.

#### Unit VIII Phonograph

- A. Value of the phonograph
- B. Available materials
  1. Records
  2. Transcriptions
- C. Uses of the phonograph
  1. Music
  2. Physical education
  3. Language, etc.

- Activities
1. Prepare or secure a list of available records for your major subject.
  2. Plan a lesson using records or transcriptions.

#### References

McKown and Roberts. Audio-Visual Aids to Instruction. pp. 231-38

#### Unit IX Radio

- A. Value of the radio in the school
- B. Correct usage in the classroom

1. Before the broadcast
2. During the broadcast
3. After the broadcast

#### C. Preparation of the script for a broadcast

Activities 1. Prepare a lesson based on a school broadcast.

#### References

Harrison. Radio in the Classroom. pp. 1-156.

### Unit X Selection and Use of Audio-Visual Materials

#### A. Selection of Aids

1. Where can you find desired materials
  - a. Lending libraries
  - b. School library
2. Do they fit the curriculum
3. Do they present a lesson

#### B. Preview of Audio-Visual materials

1. Preview for suitability
2. Pick out vocabulary difficulties
3. Prepare a lesson plan
  - a. The introduction
  - b. The actual use of the aid
  - c. Activities following the use of the aid
    1. Tests
    2. Assignments
    3. Activities

#### C. Use of audio-visual materials

1. The method of use
  - a. Group
  - b. Individual
2. Student participation

#### D. Records of the aids

1. Types of records
  - a. Evaluation sheet
  - b. Lesson plan for use of the aid
  - c. Tests
2. Filing of records

Activities 1. Prepare a lesson plan for a particular aid.  
2. Pay a visit to the audio-visual lending library.

## Unit XI    Organization and Administration

### A. Place of the teacher in the audio-visual program in the school

1. Relation to the director
2. Relation to other teachers

### B. Ordering of materials

1. By director
2. By teacher

### C. Reserving the projection room

### D. Operation of equipment

1. By teacher
2. By student

### E. Special clubs

1. Visual aid club
2. Camera club
3. Radio club



## APPENDIX C

## ADDITIONAL TABLES

TABLE XXVII

AUDIO-VISUAL AIDS IN ORDER OF PREFERENCE WITH REFERENCE TO THE AIDS AT PRESENT BEING USED  
IN THE HIGH SCHOOLS

Number of Schools Replying	City-35				Municipal-18				Rural-37			
	Present Users	Preference 1	2	3	Present Users	Preference 1	2	3	Present Users	Preference 1	2	3
Sound films	21	14	5	-	6	5	-	-	4	-	-	-
Silent films	5	-	-	1	3	1	1	-	1	-	-	-
Film strips	27	6	11	2	8	3	3	1	13	4	1	1
2"x2" lantern slides	10	1	-	-	6	-	-	-	6	-	-	-
3 $\frac{1}{4}$ "x4" lantern slides	19	1	1	1	3	-	-	-	6	-	-	-
Flat pictures	*17	1	2	4	*6	2	1	1	*11	4	2	-
Records	28	-	-	4	15	2	2	3	30	-	1	-
Specimens and models	15	-	-	1	3	-	-	-	3	-	-	-
Microscope slides	28	-	-	1	14	-	-	-	23	-	-	-
Radio programs	7	-	2	2	7	-	1	2	20	1	1	1

\* Schools with flat pictures only.

TABLE XXVIII

AUDIO-VISUAL AIDS IN ORDER OF PREFERENCE WITH REFERENCE TO THE AIDS AT PRESENT BEING USED  
IN THE JUNIOR HIGH SCHOOLS

Number of Schools Replying	City-18				Municipal-13				Rural-9			
	Present Users	Preference 1	2	3	Present Users	Preference 1	2	3	Present Users	Preference 1	2	3
Sound films	14	8	1	-	3	3	-	1	1	-	-	-
Silent films	5	-	1	-	2	-	1	-	1	-	-	-
Film strips	18	8	6	1	6	2	3	1	7	3	1	1
2"x2" lantern slides	6	-	-	-	2	-	-	-	4	-	-	-
3 $\frac{1}{4}$ "x4" lantern slides	13	-	1	1	2	-	-	-	3	-	-	-
Flat pictures	*13	2	2	4	*6	4	1	-	*4	2	-	1
Records	17	-	1	1	12	2	1	3	9	-	1	-
Specimens and models	7	-	-	-	2	-	-	-	-	-	-	-
Microscope slides	14	-	-	1	9	-	-	-	4	-	-	-
Radio programs	9	-	3	2	7	-	1	2	5	-	1	-

\* Schools with flat pictures only.

TABLE XXIX

AUDIO-VISUAL AIDS IN ORDER OF PREFERENCE WITH REFERENCE TO THE AIDS AT PRESENT BEING USED  
IN THE SUPERIOR SCHOOLS

Number of Schools Replying	Municipal-3				Rural-25			
	Present Users	Preference 1	2	3	Present Users	Preference 1	2	3
Sound films	3	-	-	-	5	1	-	-
Silent films	-	-	-	-	3	-	-	-
Film strips	3	-	1	1	2	-	-	-
2"x2" lantern slides	-	-	-	-	1	-	-	-
3 $\frac{1}{4}$ "x4" lantern slides	-	-	-	-	1	-	-	-
Flat pictures	*1	1	-	1	*4	1	1	-
Records	3	-	-	-	16	3	-	-
Specimens and models	-	-	-	-	1	-	-	-
Microscope slides	1	-	-	-	9	-	1	-
Radio programs	3	1	1	-	13	3	3	1

\* Schools with flat pictures only.



TABLE XXX

AUDIO-VISUAL AIDS IN ORDER OF PREFERENCE WITH REFERENCE TO THE AIDS AT PRESENT BEING USED  
IN THE ELEMENTARY SCHOOLS

Number of Schools Replying	City-105				Municipal-85				Rural-188				Community-7			
	Present Users	Preference 1	2	3	Present Users	Preference 1	2	3	Present Users	Preference 1	2	3	Present Users	Preference 1	2	3
Sound films	64	33	11	12	7	1	2	2	9	2	3	1	-	-	-	-
Silent films	23	2	4	1	6	1	-	1	1	-	-	-	-	-	-	-
Film strips	77	29	30	9	18	10	2	2	22	10	2	1	-	-	-	-
2"x2" lantern slides	12	-	-	1	1	-	-	-	7	-	-	-	-	-	-	-
3 $\frac{1}{4}$ "x4" lantern slides	37	1	1	1	4	-	1	-	8	-	1	-	-	-	-	-
Flat pictures	*78	12	15	26	*14	6	4	7	*30	5	6	3	-	-	-	-
Records	96	-	6	13	58	4	9	9	91	2	4	2	3	-	-	-
Specimens and models	15	-	1	-	3	-	-	-	5	-	-	-	-	-	-	-
Microscope slides	9	-	-	1	4	-	-	-	10	-	-	-	-	-	-	-
Radio programs	74	8	10	7	58	13	13	1	59	6	5	5	5	-	-	-

\* Schools with flat pictures only.

TABLE XXXI

AUDIO-VISUAL AIDS IN DESIRED ORDER OF PREFERENCE WITH REFERENCE TO PRESENT USERS IN THE HIGH SCHOOLS

Number of Schools Replying	City-35				Municipal-18				Rural-37			
	Present Users	Choice			Present Users	Choice			Present Users	Choice		
		1	2	3		1	2	3		1	2	3
Sound Projector	19	9	2	1	5	6	1	1	-	17	3	3
Silent Projector	4	1	1	-	2	-	1	-	-	-	1	-
Film Strip Projector	25	5	1	2	7	-	4	2	11	4	-	-
Opaque Projector	11	2	1	-	1	4	1	2	4	1	-	-
Lantern Slide Projector	19	-	-	-	2	-	-	1	6	1	3	-
Microprojector	5	2	2	-	1	-	1	-	-	-	-	-
Radio	36	1	2	2	20	1	-	3	30	6	2	2
Phonograph	46	-	-	-	23	-	-	-	42	-	2	-
Public Address System	*	2	1	1	*	1	2	-	*	-	-	-
Microphone	*	-	2	-	*	-	1	1	*	-	-	-
Microscope	120	1	-	-	51	1	-	-	35	-	1	2
Screen	36	-	-	-	14	2	1	-	7	-	-	-

\* Number of present users not known.

TABLE XXXII

AUDIO-VISUAL AIDS IN DESIRED ORDER OF PREFERENCE WITH REFERENCE TO PRESENT USERS IN THE JUNIOR HIGH SCHOOLS

Number of Schools Replying	City-18				Municipal-13				Rural-9			
	Present Users	Choice 1 2 3			Present Users	Choice 1 2 3			Present Users	Choice 1 2 3		
Sound Projector	10	5	-	-	3	4	2	1	-	8	-	-
Silent Projector	4	-	-	-	2	-	-	-	-	-	-	-
Film Strip Projector	15	2	1	-	6	-	3	1	7	-	-	-
Opaque Projector	7	3	2	-	1	4	2	2	2	-	-	-
Radio	22	-	1	-	9	1	-	3	6	1	-	-
Lantern Slide Projector	12	-	-	-	1	-	-	-	3	-	1	-
Microprojector	2	-	1	-	1	-	-	-	-	-	-	-
Phonograph	33	-	-	1	20	-	-	-	16	-	-	-
Public Address System	*	-	1	-	*	-	2	-	*	-	-	-
Microphone	*	-	-	-	*	-	-	1	*	-	-	-
Microscope	48	-	-	-	42	-	-	-	4	-	-	-
Screen	21	-	-	-	8	1	1	-	5	-	-	-

\* Number of present users not known.



TABLE XXXIII

AUDIO-VISUAL AIDS IN DESIRED ORDER OF PREFERENCE WITH REFERENCE TO PRESENT USERS  
IN THE SUPERIOR SCHOOLS

Number of Schools Replying	Municipal-3				Rural-25			
	Present Users	Choice 1	Choice 2	Choice 3	Present Users	Choice 1	Choice 2	Choice 3
Sound Projector	-	-	-	-	-	6	2	-
Silent Projector	-	-	-	-	1	2	1	-
Film Strip Projector	-	1	-	-	2	1	-	-
Opaque Projector	-	-	1	-	-	-	-	-
Lantern Slide Projector	-	-	-	-	1	1	2	1
Microprojector	-	-	-	-	-	-	-	-
Radio	5	-	-	-	17	2	-	-
Phonograph	3	-	-	-	16	1	3	2
Public Address System	*	-	-	1	*	-	-	-
Microphone	*	-	-	-	*	-	-	1
Microscope	1	-	-	-	10	-	1	1
Screen	3	-	-	-	2	-	-	-

\* Number of present users not known.



TABLE XXXIV

AUDIO-VISUAL AIDS IN DESIRED ORDER OF PREFERENCE WITH REFERENCE TO PRESENT USERS IN THE ELEMENTARY SCHOOLS

Number of Schools Replying	City-105				Municipal-85				Rural-188				Community-7			
	Present Users	Choice			Present Users	Choice			Present Users	Choice			Present Users	Choice		
		1	2	3		1	2	3		1	2	3		1	2	3
Sound Projector	33	31	9	2	5	25	8	8	1	27	9	7	-	1	-	-
Silent Projector	11	-	-	1	5	-	3	-	-	1	2	2	-	-	-	-
Film Strip Projector	60	10	9	-	10	4	12	2	18	8	7	4	-	-	-	-
Opaque Projector	22	5	13	7	4	3	4	4	5	1	1	-	-	-	-	-
Lantern Slide Projector	27	-	-	1	3	2	1	4	8	3	10	8	-	-	-	-
Microprojector	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Radio	141	4	2	2	70	5	9	3	97	28	12	10	5	-	-	-
Phonograph	116	-	1	2	71	7	6	-	97	15	17	3	3	-	1	-
Public Address System	*	8	3	1	*	2	2	2	*	-	-	-	*	-	-	-
Microphone	*	3	5	1	*	-	-	1	*	-	-	-	*	-	-	-
Microscope	14	-	-	-	8	-	1	-	10	-	1	1	-	-	-	-
Screen	94	1	-	-	12	-	-	-	11	-	-	-	-	-	-	-

\* Number of present users not known.

TABLE XXXV

## AUDIO-VISUAL EQUIPMENT ADDED BY THE SCHOOLS IN 1941-42

	High School			Junior H.S.			Superior		Elementary				Total
	City	Mun.	Rur.	City	Mun.	Rur.	Mun.	Rur.	City	Mun.	Rur.	Com.	
Sound Projector	2	1	-	-	-	-	-	-	-	-	-	-	3
Film Strip Projector	1	-	1	-	-	-	-	-	-	1	-	-	3
Microprojector	1	-	-	-	-	-	-	-	-	-	-	-	1
Public Address System	-	1	-	-	-	-	-	-	-	-	-	-	1
Radio	-	-	2	-	-	-	-	-	-	1	-	-	3
Combination Phonograph-Radio	-	-	1	-	-	-	-	-	-	1	-	-	2
Screen	1	-	-	-	-	-	-	-	-	-	-	-	1
Speaker	-	-	-	-	-	-	-	2	-	-	-	-	2
Phonograph	-	-	-	-	-	-	-	2	-	1	-	-	3
Phonograph Attachment for Radio	-	-	-	-	-	-	-	-	-	-	1	-	1