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The development of audio-visual education in Chicopee, Massachusetts 1952-1957.

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THE DEVELOPMENT OF AUDIO-VISUAL EDUCATION
IN CHICOPEE, MASSACHUSETTS
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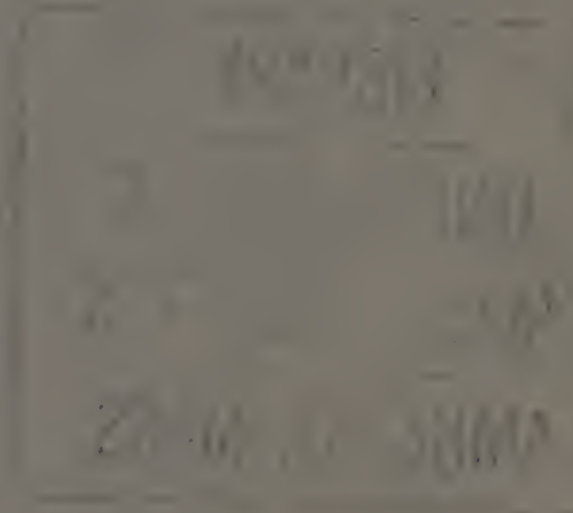
By

Daniel John Szelag

A Problem Presented in Partial Fulfilment of
the Requirement for the Master of
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University of Massachusetts
1957

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PHILOSOPHY OF AUDIO-VISUAL EDUCATION

CHAPTER I

PHILOSOPHY OF AUDIO-VISUAL EDUCATION

All teachers should know what they wish to accomplish
with their pupils. Their objectives may be defined in terms
of desirable changes in thinking and behavior so that these
changes become part of the pupil's daily living. A teacher
who does not know what his objectives are can hardly be
expected to produce these desirable changes in the behavior
of the students.

Setting up these objectives is the first step in the
teacher's plan of instruction. The second step is to devise
ways and means of attaining these goals. One of the methods
resorted to by teachers is communication by way of the verbal
symbol. While verbal symbols do play a part in the teaching-
learning situation, good teachers should not rely on this
method as the only one possible. When teaching remains on
this abstract level, the result is verbalism. Verbalism may
be defined as, "the use of words without appreciation of the
meaningful content of the words or of the meaningful content
of the context in which they are used."[1] It is the duty of
the teacher to eliminate verbalism in the classroom. This
can be accomplished by providing the children with many

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[1] C. F. Hoban, C. F. Hoban, Jr., and S. B. Zisman,
Visualizing the Curriculum (New York: The Cordon Company,
1937), p. 3.

concrete experiences and then slowly exposing them to abstractions.

The introduction of audio-visual materials and methods in school instruction is an effective way of curbing verbalism. However, audio-visual materials do not guarantee that desirable changes will take place in the behavior of the pupils. To produce these changes there must be a high degree of retention and understanding of material presented in the classroom. Therefore audio-visual methods and materials must be used effectively. It is the responsibility of the teacher by effective use of audio-visual methods to "remove the confusion from learning which comes from a lack of rich experimental background and from inadequate concepts."[2]

Audio-visual materials, being tools of learning, exist for only one purpose, effective learning. Used properly, they "offer great opportunities for improved learning."[3] Improved learning takes place when more than one sense is brought to bear upon a subject. By using the different audio-visual materials properly, children use more than the one sense employed in the purely verbal approach to learning. This does not mean that the verbal symbol should or can be

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[2]James S. Kinder, _Audio-Visual Materials and Techniques_ (New York: American Book Company, 1950), p. 59.

[3]Edgar Dale, _Audio-Visual Methods in Teaching_, Revised Edition (New York: Dryden Press, 1954), p. 3.

eliminated from the instructional process. While no educator advocates replacing teachers with audio-visual equipment and materials, most of them do agree that these audio-visual materials do make the teaching-learning process more effective. These audio-visual materials should be used to develop proper skills, useful habits, desirable attitudes, appreciation and the ability to think critically.

One may ask the question, just how will audio-visual materials influence the behavior of children in the classroom? If properly used they can accomplish the following:[4]

1. They supply a concrete basis for conceptual thinking and hence reduce meaningless word responses of students.

2. They have a high degree of interest for students.

3. They make learning more permanent.

4. They offer a reality of experience which stimulates self-activity on the part of pupils.

5. They develop a continuity of thought; this is especially true of motion pictures.

6. They contribute to growth of meaning and hence to vocabulary development.

7. They provide experiences not easily obtained through other materials and contribute to the efficiency, depth, and variety of learning.

Audio-visual methods are not new in the educational process. "For years teachers have recognized the value of audio-visual aids, and at least some teachers have utilized

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[4]Dale, op. cit., p. 65.

the available materials."[5] It was not until the publicity
given to the Armed Forces method of training Army and Navy
personnel during World War II that many educators became
aware of audio-visual methods and materials. Educators must
not only be aware of the potentialities of supplementing
instruction with audio-visual materials, they must make pro-
visions for the increased use of these materials in the
classroom. They must make their choice between the ineffec-
tiveness of verbalism and the fruitful learning accomplished
by concrete and purposeful experiences.

The responsibility of the teacher toward his children
is so broad and complex that he must use every tested method
in the teaching process. Only in this way will the school
help children acquire the proper and necessary habits and
skills. The school must not only provide the children with
the proper background for adult life but also give satis-
faction in their present everyday life. Audio-visual edu-
cation is one means by which this goal may be achieved.

"Audio-visual aids are effective to the extent to
which they are real."[6] Some audio-visual materials have more
educational significance than others. Therefore, it is the
responsibility of the teacher not only to guide the activities

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[5]Kinder, op. cit., p. 13.

[6]Robert E. Schreiber and Leonard Calvert, Building an
Audio-Visual Program (Chicago: Science Research Associates,
1946), p. 11.

of the children but to select those audio-visual materials
that have the greatest worth in a particular learning
situation.   These various audio-visual materials may be
arranged in an order leading from concrete experiences to
abstractions.   None of these materials are an end in
themselves, rather they are a means to an end.   That end
is the effective learning on the part of the children.
Many people divide these materials in a variety of ways.
Edgar Dale divides these various types of audio-visual
materials into a "Cone of Experience."[7]   The cone shows
the inter-relationships of the different types of audio-
visual materials and their position in the learning process.
The bands on this cone are not divided into rigid and
inflexible areas.   Instead, the various methods often
overlap or blend into one another.   James Kinder divides
the various materials into a "Pyramid."[8]

Dale's Cone and Kinder's Pyramid are quite similar.
Both place the most concrete experiences at the base of
their figures and work upward to the abstract.   The major
difference between the two is the placement of dramatics
and field trips.   Dale places dramatized experiences closer
to the base of his cone and field trips closer to the top
than does Kinder in his Pyramid.

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[7]Dale, op. cit., p. 43.

[8]Kinder, op. cit., p. 11.

The proper use of audio-visual materials requires skill. Perhaps proper use requires greater skill than the conventional and traditional methods of teaching. However, if used properly, these audio-visual materials will enable the children to learn more fully.

Certainly there is a danger of over-emphasizing audio-visual education, but the danger of allowing verbalism to become dominant in the classroom is a greater one. As was mentioned previously, sound judgment must be exercised in supplementing the teaching-learning situation with any audio-visual material. Great care must be taken in the selection, utilization, and evaluation of audio-visual materials. As Edgar Dale puts it, "If a specific audio-visual device is better than any other material for our specific purpose, we use it; if it is not better, its use is not justified."[9] If a teacher keeps this in mind, the teaching-learning process will most certainly benefit.

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[9]Dale, op. cit., p. 73.

CHAPTER II

IMPORTANCE OF AUDIO-VISUAL MATERIALS AND EQUIPMENT

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IMPORTANCE OF AUDIO-VISUAL MATERIALS AND EQUIPMENT

It was stated in the preceding chapter, that audio-visual materials and equipment, properly used, make the teaching-learning process more effective. In this chapter the author will list some of the practical values of audio-visual materials and the specific advantages of the different types of audio-visual equipment.[10]

Audio-Visual materials surmount the restrictions of limited experiences of some of the students. Some pupils may have had the benefits of travel, books, and a rich home life while others may have had none of these experiences. Audio-visual materials tend to equalize the difference between these backgrounds.

Audio-visual materials surmount the restrictions of the classroom walls. There is no doubt that the traditional way of teaching does not free the children from these restrictions. Many audio-visual materials furnish experiences that cannot be obtained from books or lectures. Experiences may be hard to obtain in the classroom because of the following reasons: they may be too big; or too small; they may be too fast; or too slow; they may be too complicated; or geographically limited.

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[10]Kinder, op. cit., p. 60-63.

Audio-visual materials furnish a contact by the pupils with their social and physical environment. By using these materials, the students learn about their community in many more ways than simply by talking or reading about it. How much better it is for children to visit a zoo and see and hear animals than just read about them.

Audio-visual materials provide all the children with the same perceptual experience. Children have different perceptions of an object if some hear about it and others see and handle it. Thus a teacher can overcome this difference by using audio-visual materials to expose the pupils to the same stimulus.

Audio-visual materials furnish beginning concepts which are real and complete. They not only assist in explaining a process or phenomenon but do it in such a way that the learning is correct.

Audio-visual materials arouse new interests and new desires.

Audio-visual materials furnish motivations and stimulation for learning of all types.

Audio-visual materials make for economical learning. Seeing an object, in many instances, will eliminate the need for an explanation. Films on some complex subject can save hours of time. By helping the children to learn correctly at the beginning, they do not waste the time that is some-

times wasted when initial concepts are learned incorrectly and then have to be re-taught.

Audio-visual materials furnish a variety of experiences. Experiences run from the direct, concrete experience to the abstract. Each of these experiences has its place in the curriculum.

While each audio-visual material is used in a specific situation, the following principles apply to all materials.[11]

1. They should be integrated with the curriculum-be it one of experience or sub-type.

2. They should be previewed or tried out in advance of use in the classroom.

3. They should be taught, not merely shown.

4. Provision should be made for definite follow-up.

5. Records should be kept of results obtained; evaluations should be made.

6. Too many aids should not be used at one time.

7. The type of material used should enrich the experience being taught.

8. They should be used in the regular classroom or laboratory.

9. They should supplement, not supplant the teacher, textbook or other material.

10. They should be available when and where needed.

11. They should be factually and technically correct.

12. No one material is best for all learning situations; each has a specific role in order to provide maximum effectiveness.

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[11]Ibid, p. 65.

Turning to the different types of audio-visual equipment, the author will list some of the advantages of this equipment as determined by James S. Kinder.[12]

The standard lantern slide projector is one of the most useful pieces of audio-visual equipment for the teacher. It is simple to operate, inexpensive, and can be used in many situations. The machine produces a brightly illuminated image and can be used in a room that is not completely dark. Another big advantage is that slides can be studied for as long as necessary.

The 2 x 2 filmstrip projector is being used more and more by classroom teachers. The filmstrip projector is economical and compact. It is easy to operate, in fact sixth grade children can be taught to operate the machine. Another advantage is that there are a great many filmstrips available at a very low cost.

The opaque projector is a valuable but little-used machine. Its biggest advantage is that it can project non-transparent materials. Materials need not be purchased but are readily available in books and magazines. After the original cost, there is little expense. This machine is also easy to operate once it has been set up.

The overhead lantern slide projector's chief advantage is that it allows the operator to stay in front of the

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[12]Ibid, p. 159-276.

room and face the class while the machine is being used.

The sound motion picture projector overcomes many of
the limitations found in distance, unreality, poor motivation,
seasonal handicaps, abstractions and limitations involving
sight, sound, color and motion.

The motion picture projector can bring into the class-
room happenings from any part of the globe. Things that are
too small to be seen by the unaided eye can be shown to the
entire class through the process of micro-photography.
Seasons no longer determine the time of year a teacher must
teach certain concepts. Slow motion processes slow down
that which is too fast, and time-lapse photography speeds
up that which is too slow. Animation presents that which is
abstract and theoretical. Of all the audio-visual equip-
ment and materials, the motion picture projector and film
can claim more potentialities than any other medium. It
is the first type of equipment that people think of when
someone mentions audio-visual education.

To use audio-visual materials and equipment wisely,
a teacher must first realize their importance and then, like
all learning materials, they should be utilized by the
teacher to help solve the problems faced by the students.

CHAPTER III

THE PROBLEM AND OUTLINE OF PROCEDURE

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THE PROBLEM AND OUTLINE OF PROCEDURE

Statement of the problem.   The purpose of this
problem is to determine the status and progress of Chicopee,
Massachusetts, in applying the philosophy of audio-visual
education as described in Chapter I to the regular classroom
situation in grades kindergarten through eight.

Outline of procedure.   To determine the status and
progress in Chicopee, Massachusetts, it was necessary to
conduct two surveys.   One survey was made in 1953 and the
second in 1955.   The first survey was made two months prior
to the establishment of a Department of Audio-Visual Educa-
tion and the appointment of a director.

The first step in these surveys was to determine what
constitutes a good audio-visual set-up.   After this had been
accomplished, it became necessary to construct a question-
naire that would be used in the interviews with the different
principals throughout the school system.   The second question-
naire was essentially the same as the first.   The only differ-
ence was the placement of certain questions and the rewording
of others.   Both questionnaires will be found in the appen-
dices as Appendix A and Appendix B.

The second step was to conduct the interviews with the
various principals.   There were ten schools involved in the
first survey and eleven in the second survey.

Finally the results of the two surveys were tabulated and a comparison made to determine the progress from 1953 to 1955.

Before a questionnaire could be constructed, it was decided that a set of standards would be needed to guide the author in the construction of a questionnaire. These standards set as a goal a minimum amount of audio-visual equipment and materials for a school or a certain number of pupils. After reviewing the literature concerning audio-visual aids and consultation with the Director of Audio-Visual Department at the University of Massachusetts, the following criteria were selected as a minimum goal of audio-visual materials and equipment.[13]

    1. One table type radio for each classroom.

    2. One 2 x 2 filmstrip projector for each 200 students.*

    3. One sound motion picture projector for each 200 students.*

    4. One portable tripod screen for each projector or wall type screen for each classroom.

    5. A two or three speed record-transcription player for each 200 students.*

    6. One lantern slide ($3\frac{1}{4}$ x 4) projector for each 400 students.*

    7. One opaque projector for each school.

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[13] Helen H. Seaton, _A Measure for Audio-Visual Programs_, American Council on Education Studies, Vol. VIII, No. 8 (October, 1944), 40.

8.   One sound recorder (wire, tape or disc) for each school.

9.   A public address system for each school.

10.   One set of stereoscopes for each 400 students.*

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        *.......or one for each building where enrollment is less.

Most questions were worded in such a way as to have the principals answer by number or yes or no.   Other questions asked for the number of classrooms and pupils in each school.   These questions were included in order to determine whether or not the different schools met the suggested number set forth in those standards that were based on a certain number of students.

In this problem, equipment refers to the different types of projectors, recorders, record players and stereoscopes.   Materials refer to that which is used with these pieces of equipment.

CHAPTER IV

RESULTS OF THE 1953 SURVEY

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RESULTS OF THE 1953 SURVEY

Contrary to the usual results from questionnaires, the replies in this survey were 100% completed. This 100% response was possible due to the small number of schools involved and because the personal interview was used to complete the questionnaire.

Table I shows the number of teachers, classrooms and pupils in the various elementary schools throughout the city.

TABLE I

NUMBER OF TEACHERS, CLASSROOMS AND PUPILS IN EACH ELEMENTARY SCHOOL, 1953

School	Teachers	Classrooms	Pupils
Aldenville	10	10	370
Alvord	8	8	266
Belcher	19	19	700
Bowe	17	18	511
Chapin	16	16	467
Kirby	23	23	750
Memorial	20	20	742
Sheridan Street	6	6	189
Taylor	12	12	350
Valentine	9	10	267
Totals	140	142	4612

Table I serves as a basis for the standards that use the number of pupils or the number of classrooms to determine the number of the various pieces of equipment that will be needed in each school.

Table II shows the number of the various projectors in the different schools in the system. It indicates that while only three schools meet the suggested number of motion picture projectors, all schools have at least one projector. Regarding the other projectors the situation is not as bright. Three schools have the suggested number of filmstrip projectors, one school the number of lantern slide projectors and no schools owned any opaque projectors. Comparing this table with Table I, page 15, would indicate the purchase of fourteen additional filmstrip projectors, eleven lantern slide projectors and ten opaque projectors to meet the suggested number set forth in the standards.

TABLE II

NUMBER OF MOTION PICTURE, FILMSTRIP, LANTERN
SLIDE, AND OPAQUE PROJECTORS IN EACH
ELEMENTARY SCHOOL, 1953

School	Motion Picture 16 mm	Filmstrip	Lantern Slide	Opaque
Aldenville	1	1	0	0
Alvord	1	1	0	0
Belcher	1	1	1	0
Bowe	1	0	1	0
Chapin	1	1	0	0
Kirby	1	0	1	0
Memorial	1	0	0	0
Sheridan Street	1	1	0	0
Taylor	1	0	0	0
Valentine	1	1	0	0
Totals	10	6	3	0

Table III indicates the number of record players, public address systems, radios and stereoscopes owned by the various schools throughout the city. It indicates a complete lack of stereoscopes, almost the same situation concerning public address systems and a somewhat better condition regarding record players and radios. While most schools had at least one radio and record player, the totals indicate a very serious shortage and therefore point to an avenue of future improvement.

TABLE III

NUMBER OF RECORD PLAYERS, PUBLIC ADDRESS SYSTEMS,
RADIOS AND STEREOSCOPES IN EACH
ELEMENTARY SCHOOL, 1953

School	Record Players	Public Address Systems	Radios	Stereo-scopes (sets)
Aldenville	0	0	3	0
Alvord	0	0	2	0
Belcher	1	0	3	0
Bowe	3	0	1	0
Chapin	1	0	1	0
Kirby	1	0	7	0
Memorial	1	1	1	0
Sheridan Street	1	0	2	0
Taylor	1	0	2	0
Valentine	0	0	0	0
Totals	9	1	22	0

Table IV shows the number of screens, filmstrips, films and projection tables in each school. Column I shows

that there are a sufficient number of screens for the number
of sound motion picture projectors listed in Table II, page
16; the remaining three columns indicate an almost complete
dearth of materials.

TABLE IV

NUMBER OF SCREENS, FILMSTRIPS, FILMS
AND PROJECTION TABLES IN EACH
ELEMENTARY SCHOOL, 1953

School	Screens	Filmstrips	Films	Projection Tables
Aldenville	1	6	0	0
Alvord	1	8	0	0
Belcher	1	0	0	0
Bowe	1	0	0	0
Chapin	1	0	0	1
Kirby	1	0	0	0
Memorial	1	0	0	0
Sheridan Street	1	4	0	0
Taylor	1	0	0	0
Valentine	1	17	0	0
Totals	10	35	0	1

Tables I through IV give the results of items 1
through 8, 13 through 16, and 20 on the questionnaire used
in this study. The results of the remaining items on the
questionnaire can be stated briefly.

Four of the schools reported having an audio-visual
program while six schools reported no program. In five of

the schools there was a teacher in charge of audio-visual
materials and equipment, while five schools reported no one
in charge. None of the schools had an audio-visual center.
All materials and equipment were kept in the office of the
principal. Six of the schools had made arrangements for
renting or borrowing materials, four schools had no arrange-
ments for this item. All schools were promoting different
activities such as field trips, dramatic participation and
demonstrations.

Concerning the item of darkening facilities, four
schools had no room that could be darkened for projection
purposes, five schools used their auditorium and one school
had one classroom that was available to teachers for
projection purposes.

The results of this survey indicate a serious short-
age in all materials and equipment except the sound motion
picture projector. While there is a shortage of sound motion
picture projectors compared to the suggested number set
forth in the criteria, there is at least one projector
available in each school.

This survey was completed just prior to the appoint-
ment of a Director of Audio-Visual Education.

CHAPTER V

RESULTS OF THE 1955 SURVEY

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RESULTS OF THE 1955 SURVEY

As in the previous survey the results from this one were also 100% complete.

Several changes occurred since the last survey which should be mentioned here. One new school was completed and occupied. Also, the school committee elected James L. Shea as Director of Audio-Visual Education just after the completion of the first survey.

Table V which is similar to Table I on page 15, shows the number of teachers, classrooms and pupils in the various elementary schools throughout the city.

TABLE V

NUMBER OF TEACHERS, CLASSROOMS AND PUPILS
IN EACH ELEMENTARY SCHOOL, 1955

School	Teachers	Classrooms	Pupils
Aldenville	10	10	325
Alvord	9	9	275
Belcher	18	18	600
Bowe	18	18	534
Chapin	20	20	577
Kirby	29	29	877
Memorial	20	20	655
Sheridan Street	7	7	192
Taylor	14	14	394
Valentine	12	12	390
Westover	24	24	850
Totals	181	181	5669

Table V, just as Table I did for the first survey, serves as a basis for those standards that use the number of pupils or the number of classrooms to determine the number of the various pieces of equipment that will be needed to meet the suggested number mentioned in the criteria used in this study.

Table VI shows the number of the various projectors in the different schools in the system. It indicates that while the number shown does not meet the suggested number, columns 1 and 2 show that there is available a projector in each school. Columns 3 and 4 indicate very little progress.

TABLE VI

NUMBER OF MOTION PICTURE, FILMSTRIP, LANTERN
SLIDE AND OPAQUE PROJECTORS IN
EACH ELEMENTARY SCHOOL, 1955

School	Motion Picture 16 mm	Filmstrip	Lantern Slide	Opaque
Aldenville	1	1	0	0
Alvord	1	1	0	0
Belcher	1	2	1	1
Bowe	1	2	1	0
Chapin	1	1	0	0
Kirby	1	1	0	0
Memorial	1	1	1	0
Sheridan Street	1	1	0	0
Taylor	1	1	0	0
Valentine	1	1	0	0
Westover	1	1	0	0
Totals	11	13	3	1

Table VII indicates the number of record players, public address systems, radios and stereoscopes owned by the various schools throughout the city. It shows a complete lack of stereoscopes. The number of radios has decreased since the first survey and no effort has been made to stop this decrease, because of the lack of educational programs in this area. There has been some improvement in public address systems but the most progress has been made in the acquisition of record players. Almost all schools meet or exceed the suggested number.

TABLE VII

NUMBER OF RECORD PLAYERS, PUBLIC ADDRESS SYSTEMS, RADIOS, AND STEREOSCOPES IN EACH ELEMENTARY SCHOOL, 1955

School	Record Players	Public Address Systems	Radios	Stereo-scopes (sets)
Aldenville	4	0	1	0
Alvord	1	0	1	0
Belcher	4	1	2	0
Bowe	2	0	0	0
Chapin	3	0	1	0
Kirby	6	1	6	0
Memorial	2	1	1	0
Sheridan Street	0	0	0	0
Taylor	3	0	2	0
Valentine	2	0	0	0
Westover	6	1	0	0
Totals	33	4	14	0

Table VIII shows the number of screens, filmstrips, films and projection tables in each school. Column 1 indicates that there are a sufficient number of screens for the number of sound motion picture projectors owned by the schools. Column 2 shows only one school owning any filmstrips but all shhools can avail themselves of the filmstrips that are kept at the Audio-Visual Center at the High School. There are over 1100 filmstrips at the Center. There are no films but the Department of Audio-Visual Education is making arrangements to acquire a film library of thirty films on the rental-buy arrangement. Column 4 indicates almost a complete lack of projection tables.

TABLE VIII

NUMBER OF SCREENS, FILMSTRIPS, FILMS AND PROJECTION TABLES IN EACH ELEMENTARY SCHOOL, 1955

School	Screens	Filmstrips	Films	Projection Tables
Aldenville	2	0	0	0
Alvord	1	0	0	0
Belcher	2	0	0	0
Bowe	2	0	0	1
Chapin	2	0	0	1
Kirby	3	0	0	0
Memorial	3	0	0	0
Sheridan Street	1	0	0	0
Taylor	2	0	0	0
Valentine	2	25	0	0
Westover	1	0	0	0
Totals	21	25	0	2

In 1955 all schools had one or two teachers in charge of audio-visual materials and equipment. Three schools had an audio-visual center and one school had an audio-visual library. All schools make arrangements for renting and borrowing materials and equipment through the Department of Audio-Visual Education. All schools were promoting different activities such as field trips, dramatic participation and demonstrations.

Six schools have no classrooms that can be darkened for projection purposes. Of these six, three used their auditorium for projection purposes, while the other three had no darkening facilities. One school has darkening facilities in all its classrooms, while the remaining four schools have one classroom that can be darkened for projection purposes.

The results of this survey indicate a shortage in almost all the items on the questionnaire. However, as Chapter VI will show, progress has been made in the first two years of the Audio-Visual Department's existence.

CHAPTER VI

COMPARISON BETWEEN THE TWO SURVEYS

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In this chapter a comparison will be given between the two surveys and how the schools compared in each year to the criteria set forth in Chapter II. Each criterion will first be stated and then the comparison made.

1. One table type radio for each classroom.

With 181 classrooms in the city in 1955 the schools would need an equal number of radios to meet this standard. With only fourteen radios in the system, the city had but 7% of the suggested number. In 1953 there were 1942 classrooms with twenty-two radios. Two years ago the city had 15% of the standard.

2. One 2 x 2 filmstrip projector for each 200 students.

In 1953 the schools had an enrollment of 4612 students, necessitating a supply of twenty-three projectors to meet standard number two. With only six projectors on hand, the city had but 26% of the standard. In 1955 the schools had acquired an additional seven projectors bringing the total to thirteen. While the schools did not yet meet the second standard, it had increased the percentage from 26% to 43%.

3. One sound motion picture projector for each 200 students.

In 1953 there was one sound motion picture projector for each school in the city, that is, ten sound motion picture

projectors. This meant the city had 43% of the standard.
In 1955 one additional projector had been purchased but this
went to the new school that had been erected since the first
survey. The heavy enrollment increase in two years resulted
in the schools having but 39% of standard number three.

> 4. One 2 or 3 speed record-transcription player
>   for each 200 students.

In 1953 there were only nine record players in the
school system. Therefore, the city had but 39% of the
standard. In 1955 there were thirty-three record players in
the schools. This meant that the city had not only attained
this standard but was 15% over it.

> 5. One portable tripod screen for each projector
>   or wall type screen for each classroom.

In 1953 there was one screen for every projector.
This fulfilled standard number five. In 1955 there were
twenty screens in the system, more than enough for the num-
ber of motion picture projectors in the schools.

> 6. One lantern slide ($3\frac{1}{4}$ x 4) for 400 students.

The number of lantern slide projectors has remained
the same in both years of the survey, namely, four. However,
with the added enrollment in 1955 over 1953, the percentage
decreased from 33% in 1953 to 28% in 1955.

> 7. One opaque projector for each school.

In 1953 the city owned no opaque projectors, there-
fore the city had 0% of the standard. In 1955 the city had

acquired one opaque projector which raised the percentage to 9% of standard number seven.

      8.   One sound recorder (wire, tape or disc) for each school.

The number of sound recorders increased from one to three from 1953 to 1955. Therefore, the percentage increased from 10% to 27%

      9.   A public address system for each school.

The number of public schools owning public address systems increased from one in 1953 to four in 1955. In 1953 the school system had 10% of the standard, while in 1955 the percentage increased to 36%.

      10.   One set of stereoscopes (35) for each 400 students.

No change in this criteria. Nothing in 1953, nothing in 1955.

Graph 1 which is on page 29 shows the comparison between the number of the various projectors owned by the schools and the suggested minimum number for each projector.

Graph 2 on page 30 shows the comparison between the different pieces of audio equipment owned by the city and the suggested minimum number for these pieces. Both Graph 1 and Graph 2 are for the year 1953.

Graph 3 shows the 1955 comparison between the different projectors and the suggested minimum number for each projector. Graph 3 is on page 31.

Graph 4 on page 32 shows the 1955 comparison bet-
ween the various pieces of audio equipment owned by the
schools and the suggested minimum number for each piece of
equipment.

Looking at all four graphs, only one column reaches
the red line. All other columns are quite distant from
it.

There is no comparison between the number of radios
owned and the suggested minimum number because the differ-
ence is so great that a graph could not be constructed
that would be consistent with the numbers used in the
other graphs.
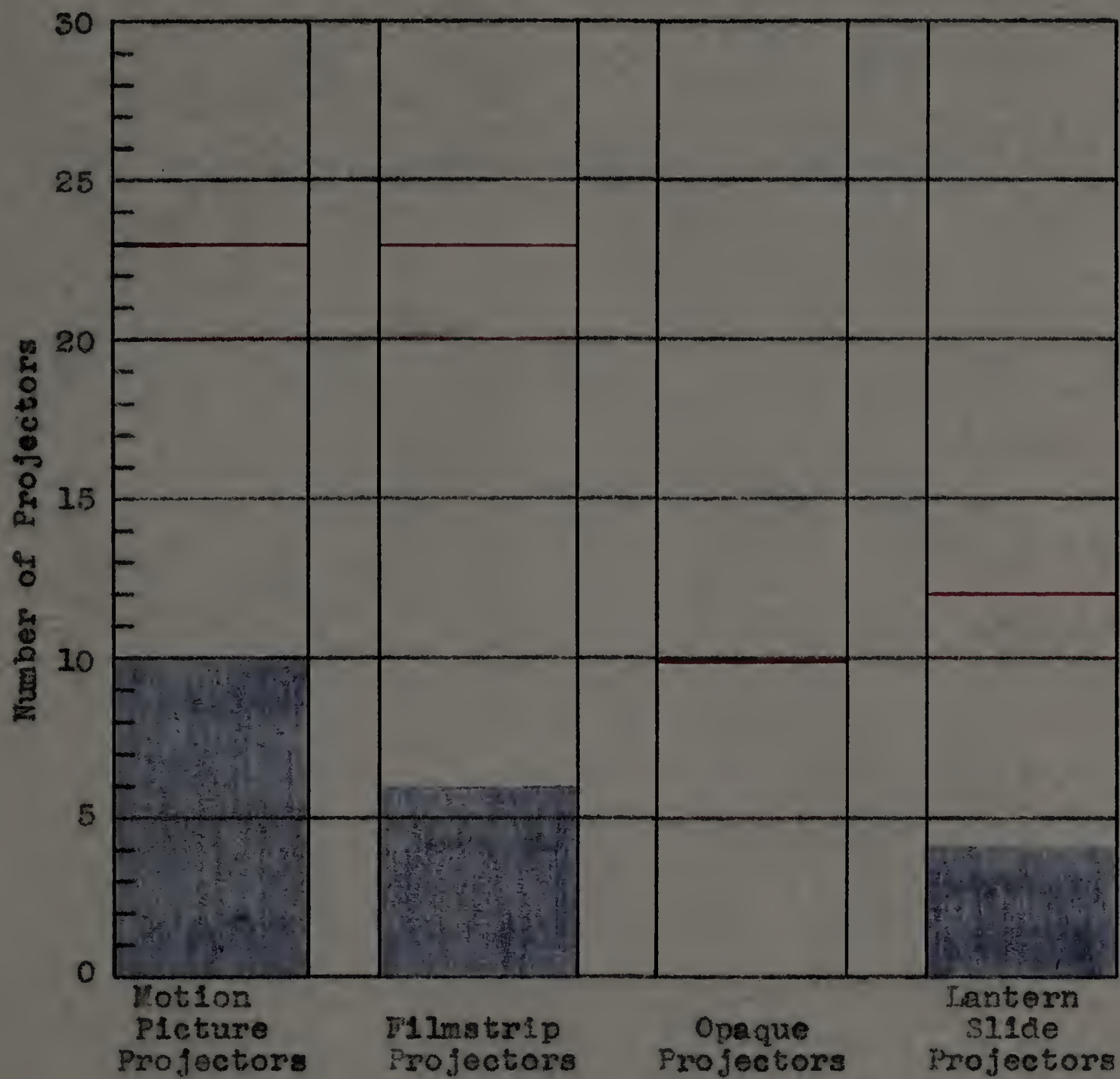
Graph 1

Comparison between number of projectors
owned (columns) and suggested minimum
number for each projector (red line), 1953
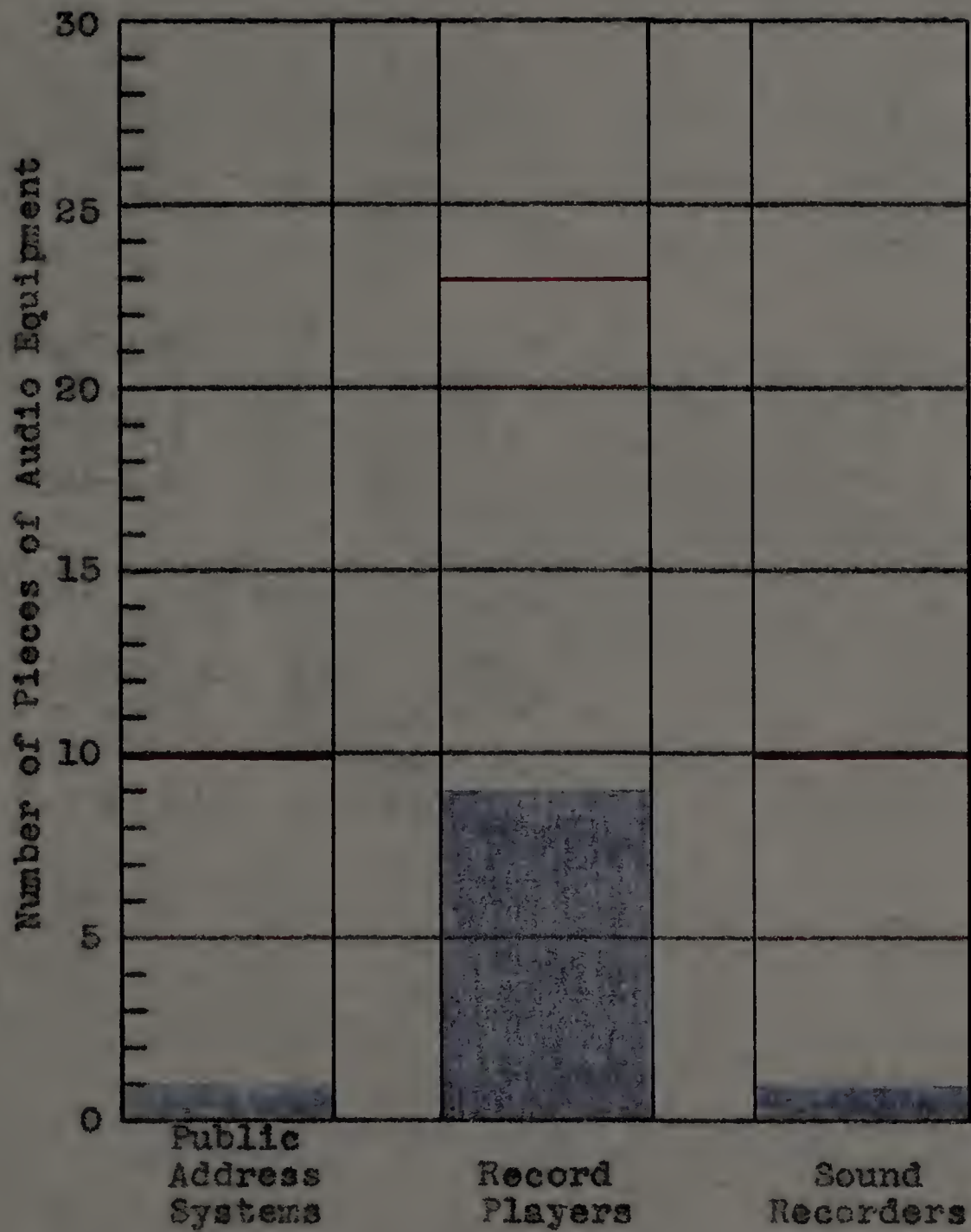
Graph 2

Comparison between audio equipment
owned (columns) and suggested minimum
number for each piece (red line), 1953
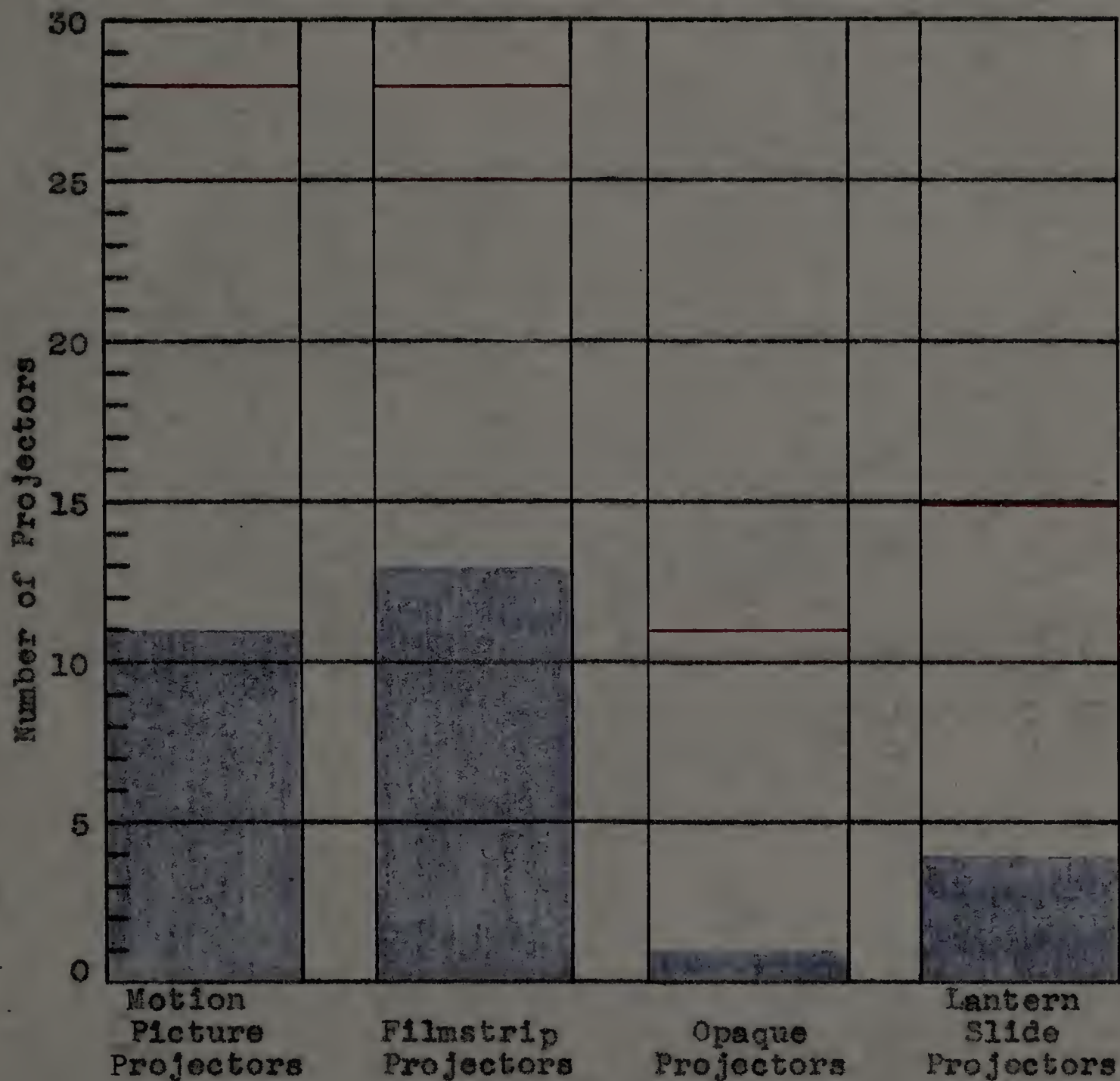
Graph 3

Comparison between number of projectors
owned (columns) and suggested minimum
number for each projector (red line), 1955
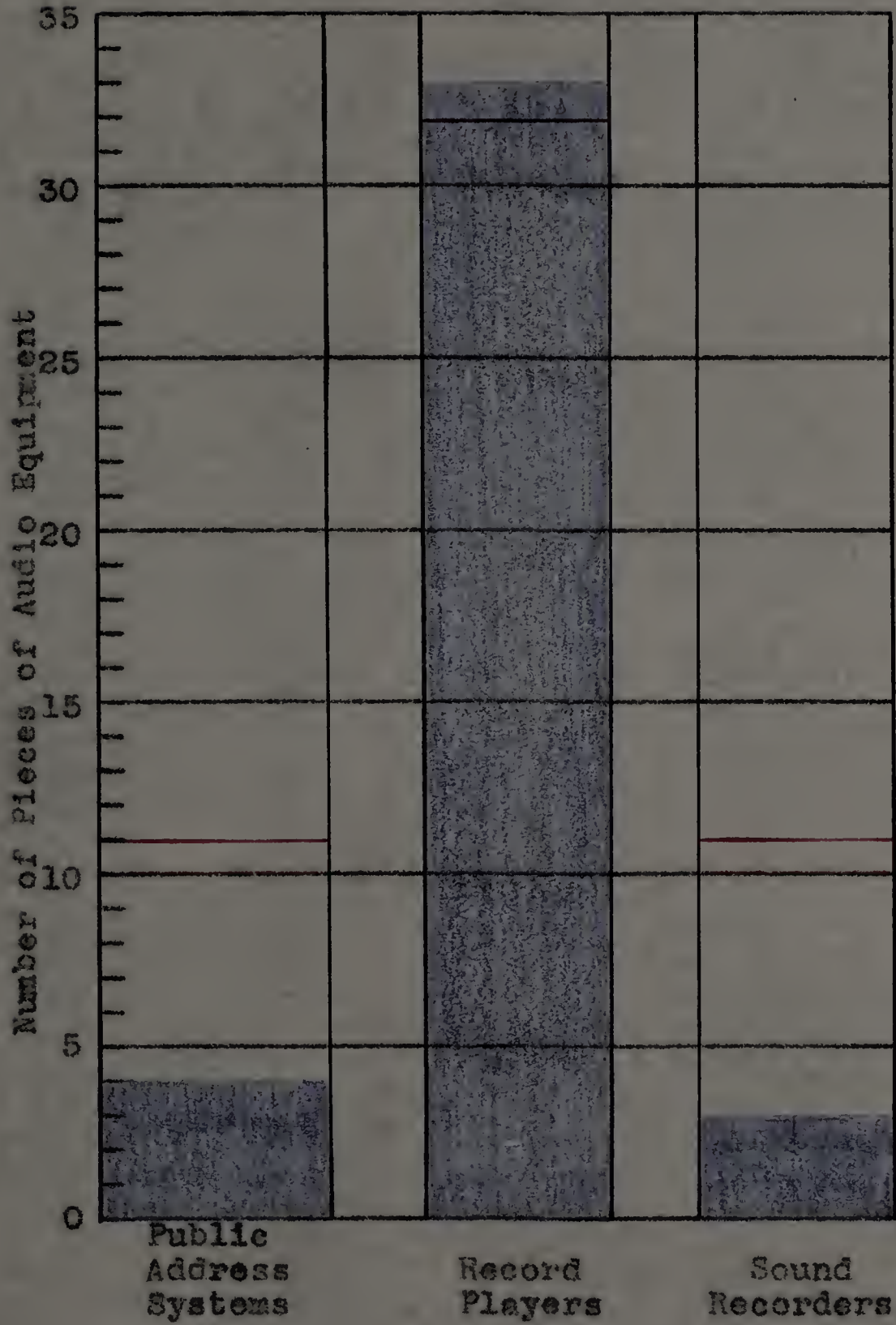
Graph 4

Comparison between audio equipment
owned (columns) and suggested minimum
number for each piece (red line), 1955

CHAPTER VII

DEPARTMENT OF AUDIO-VISUAL EDUCATION IN CHICOPEE

CHAPTER VII

DEPARTMENT OF AUDIO-VISUAL EDUCATION IN CHICOPEE

The Department of Audio-Visual Education was established in the fall of 1953 and James L. Shea was appointed Director of this department. The department office is located in the High School and serves as the Audio-Visual Center for the School System. All material and equipment not mentioned in the previous chapters is kept in the Department of Audio-Visual Education at the High School and is available to any school upon request.

There were at the Audio-Visual Department in 1955 three sound motion picture projectors, two tape recorders, and a filmstrip projector. There were no films at the Center but there were over eleven hundred filmstrips and new ones were being added continually.

Many of the administrative problems of the new Audio-Visual Department have been resolved. In each school there has been appointed one or two co-ordinators, depending upon the size of the school. At one school the principal had inaugurated a rotating plan in which two co-ordinators were originally appointed and then in succeeding years the co-ordinator is replaced by the assistant co-ordinator and a new teacher is appointed as assistant co-ordinator. This system means that eventually every teacher in the building will have had a close and intimate association with the

Department over a period of two years. This program was
scheduled to be used by all schools but the plan has not
materialized.

All requests for audio-visual equipment and
materials must pass through the Audio-Visual Department.
All requests are mailed into the Department and materials
are received through the mail. All arrangements for field
trips are made by the teacher except for transportation
which is taken care of by the Department. Bus transporta-
tion is furnished for all field trips. Yellow school buses
are used.

The distribution of materials has worked out quite
well during the past two years. However, it is the hope of
the Department to set up basic libraries of various materials
in the larger schools of the city. Considering the progress
that has been made during the past two years in the area of
filmstrips, it is reasonable to assume that within a few
years a basic library can be set up in the larger schools.

With regard to the establishment of a sound motion
picture library, the Department is getting to the stage where
because of the rapidly increasing use of films, the rental
charges are beginning to amount to such a point where the
purchase of certain basic films would be more economical.
The acquisition of a basic film library is an immediate
goal of the Department.

It must be mentioned here that there is no separate budget
for this Department and this is a serious handicap to con-
structive planning for the future.

The different co-ordinators had been meeting with the
director on an occasional basis; however, starting in
September, 1955 the meeting became more regular and more
frequent. It is also hoped that in the future there will
be issued to all teachers an audio-visual bulletin for the
purpose of informing teachers of new additions to the depart-
ment library, stimulating proper use of audio-visual materials,
and keeping all teachers up-to-date on current trends in the
audio-visual field.

Beginning in the fall of 1955 the Department of Audio-
Visual Education inaugurated a series of institutes for all
teachers. These institutes were held in various parts of
the city and teachers saw demonstrations of the three prin-
cipal types of materials that the Department was concentrating
on, namely, the filmstrip, the motion picture film and the
recording. It was the hope of the Department to familiarize
the teachers with these three materials in order to extend
the use of these materials. Succeeding institutes and other
devices will be used to inculcate proper methods of procedure
in the use of other materials. The Department is very much
concerned that teachers properly use materials so that they
get the fullest possible advantage of them.

It is the opinion of the Director that Audio-Visual
Directors and school administrators in general may be called
upon to justify to the taxpayers the expenditures of what
may seem to be fabulous amounts for materials and equipment
which unfortunately are not properly understood. Therefore
if pains are taken to establish evidence of worthwhile
spending on audio-visual equipment and materials, the De-
partment will have a solid argument that can be defended.
Also, this evidence can be used to convince others of the
need for much greater effort in the field of Audio-Visual
Education.

The Department of Audio-Visual Education is responsi-
ble for the selection of new equipment. Some schools are
faced with grave deficiencies in terms of equipment. These
deficiencies could be remedied in time if funds were made
available to the Department. One of the problems facing
the Department is to make more rooms suitable for projection
purposes. One obvious solution would be to provide all
rooms with darkening facilities. This solution, however,
would be too expensive. Another possible solution would be
to secure a screen that did not necessitate special darken-
ing conditions. There are in the system many portable
Radiant Classroom Screens. These screens are a little in-
convenient for most teachers due to their bulkiness and
weight. Consequently, many teachers are reluctant to use

this screen except on special occasions. The Director feels that half the battle in putting across the Audio-Visual program is to make equipment easy and convenient to use so that it does not interrupt the classroom routine unduly. Recently the Director has seen and used a so-called "Lightmaster Screen" which he feels may come close to being the answer to the problem. This screen weighs less than fifteen pounds and can be hung on two hooks. This screen has been used in several schools in the school system and the teachers seem well satisfied with the results.

Other problems that are being given primary consideration are the purchase of additional motion picture projectors, filmstrip projectors, tape recorders and record players.

The biggest problem, of course, is the securing of a separate budget for the Department of Audio-Visual Education. Without this, the other problems are going to be that much more difficult to overcome.

During the first year of the Department's existence, namely, 1953-1954, three thousand dollars was spent on new equipment, eleven hundred dollars on filmstrips, sixty-two dollars for film rentals and six hundred dollars on cameras, motion picture film and flash bulbs. Concerning the six hundred for the last items, most of this money was spent on motion picture film which was used primarily for the filming of the High School football games. During the second year

of Audio-Visual Education the expenditures for these four
catagories were as follows: four hundred dollars for
motion picture film and flash bulbs.   There was no major
piece of equipment purchased by the school department.   One
combination slide-filmstrip projector was bought for one
school but this item was paid for by the Parent-Teacher-
Association.

Expenditures in the second year were reduced by
approximately sixty-three percent.   Less than nine thousand
dollars has been spent by the Department of Audio-Visual
Education in two years.

However bleak the picture may seem, neither the
Director nor the co-ordinators are discouraged about the
future of Audio-Visual Education in Chicopee.   Progress
has been made during the past two years, and it is hoped
that progress will continue.

CHAPTER VIII

SUMMARY AND CONCLUSIONS

CHAPTER VIII

SUMMARY AND CONCLUSIONS

As was stated in Chapter I, audio-visual materials
and equipment when used properly, offer great opportunities
for improved learning. Before these materials can be used
properly, they must be available to the teachers. That has
been the purpose of this survey. What materials and
equipment are available to the teachers and what progress
has been made since the establishment of the Department of
Audio-Visual in Chicopee, Massachusetts.

Summary. In 1953 there was a sound motion picture
projector in each school. In 1955 the situation did not
change, one sound motion picture projector in each school.

The 1953 survey showed that only six schools had a
filmstrip projector. Two years later, the survey indicated
that each school had at least one filmstrip projector while
two schools owned two projectors.

The two surveys obtained the same results in regard
to the lantern slide projector. Only three schools owned
a projector.

In 1953 there were no opaque projectors available to
any teacher, while in 1955 only one school had acquired one
of these machines.

The greatest progress made was in the acquisition of
record players. In 1953 seven schools owned record players

and three schools did not own any. In 1955 one school was
still without a record player, one school had only one and
the remaining nine schools owned at least two. Two schools
owned as many as six record players.

The number of public address systems increased from
one in 1953 to four in 1955.

In 1953 nine schools owned radios ranging in number
from one to seven. In 1955 the number of schools owning
radios decreased to seven.

There were no sets of stereoscopes in any of the
schools in either year.

The two surveys indicated a sufficient number of
screens in all schools.

As far as motion picture films and filmstrips are
concerned, the first survey showed four schools owning film-
strips and no school owning any films. The second survey
showed only one school still possessing its own supply of
filmstrips and the number of films remained at zero. However,
it might be mentioned here that there are over 1100 film-
strips that are owned by the Department of Audio-Visual
Education which are kept at the Audio-Visual Center at the
High School.

Conclusions. The 1953 survey showed that three
schools needed two additional sound motion picture projectors,
four schools needed one more projector while three schools
did not need any. Due to the increased enrollment, the 1955

survey indicated that two schools needed three more pro-
jectors, four schools needed two more, three schools needed
one more and only two schools had a sufficient number of
sound motion picture projectors.

The 1953 survey showed that there was a serious defi-
ciency in filmstrip projectors. Two schools needed three
machines, three schools needed two, two schools needed one
and only three schools met the standard for filmstrip pro-
jectors. In 1955 despite the increased enrollment, the
needs did not rise in proportion to the increase since the
city did purchase several projectors that kept the deficiency
from increasing. However the needs in several schools were
still serious. Two schools needed three additional projectors,
two schools needed two more machines, five needed only one
additional projector and two schools satisfied the criterion
for filmstrip projectors.

The requirements to meet the standard for lantern
slide projectors did not change much between the two surveys.
In 1953 seven schools needed one additional projector, two
schools needed two projectors each, and only one school met
the standard. In 1955 the needs were almost the same. Seven
schools needed one more projector, two schools needed two
additional projectors each and two schools met the require-
ments for the lantern slide projector. The only reason a
second school met the standard was due to a decrease in
enrollment at that school.

The 1953 survey showed that every school in the system needed an opaque projector, while in 1955 only one school had purchased an opaque projector.

The greatest increase in equipment took place in record players. In 1953 only two schools met the standard, four schools needed one additional record player and four schools needed two more machines to attain the criteria for record players. In 1955 the situation had changed considerably. Three schools could meet the standard with the acquisition of one additional record player, three schools did meet the requirement, two schools had one record player above the required number and three schools had two more record players than mentioned in the standard.

In 1953 only one school had a public address system. This meant that nine schools did not meet the requirement for this piece of equipment. In 1955 the situation was somewhat improved. Four schools met the requirement, seven schools did not.

The deficiency in the number of radios needed was very large in both years. Since each school needed a very great number and since each school needed a different number, it would be very depressing to list theneed for each school as has been the case with the other equipment. The total number needed in order to meet the suggested number was 118 in 1953. In 1955 the number needed was 167. The reason for not trying to overcome the shortage of radios is

the lack of educational programs in this area.

As for stereoscopes there were none in either year. Therefore, it would be necessary to acquire thirteen sets in 1953 and fifteen in 1955 to meet the standard for stereoscopes.

In both years there was a sufficient number of screens for the number of projectors owned by the different schools.

The conclusions arrived at in this chapter indicate a serious shortage according to the standards set forth in this problem. It must also be pointed out that these standards are thirteen years old. The Department of Audio-Visual Education in Chicopee is making a concerted effort to overcome the deficiencies in the various pieces of equipment. While shortages do exist, progress in the two years has been made.

Progress since 1955. Since this problem was completed at the end of the 1955 school year and is being submitted for approval at the end of the 1957 school year, the following paragraphs are offered to bring the reader up-to-date.

In the past two years the Department of Audio-Visual Education has purchased three additional sound motion picture projectors and has ordered two more. These two will not represent an increase since they will be used to replace two projectors now old and worn. Since 1955 eight additional filmstrip projectors and one opaque projector have been purchased.

As of 1957 seven schools had public address systems, which represented an increase of three since 1955.

During the past two years 28 record players had been added throughout the different schools. Several of the record players owned in 1955 have been replaced but the number of record players now owned is well above the suggested number as set forth in the standards.

In 1955 the Department owned three tape recorders. As of 1957 there were nine tape recorders in the various schools. Also, three additional recorders have been ordered by the Department of Audio-Visual Education.

In 1955 there were at the Audio-Visual Center at the High School over 1100 filmstrips. As of February, 1957, the number has increased to over 1200 filmstrips.

The Department has completed arrangements to acquire 140 motion picture films. These films will be obtained by a rent-to-own plan. The rental fee plus the interest charge will be approximately $2000.00 per year for the next four years. At the end of four years the 140 films will be owned by the Department of Audio-Visual Education in Chicopee.

Probably the most significant item during the past two years is that the Department has been granted a budget of its own. In fact the 1957 budget has been approved as submitted.

It was stated on page 43 that the standards used in the two surveys were thirteen years old. Since the completion

of the survey, a new set of standards have been brought to
the attention of the author.   These standards were published
by the Department of Audio-Visual Instruction of the National
Education Association.   The following are recommendations for
a minimum amount of audio-visual equipment.[14]

1.   One radio per five classroom where suitable
     programs are broadcast daily and where
     reception is good.

2.   One 2 x 2 filmstrip-slide projector per ten
     classrooms.

3.   One 16mm sound motion picture projector per
     building.*

4.   One wall type screen per projector and one
     tripod type screen per building.

5.   One record player per five classrooms. One
     transcription player per building.*

6.   One $3\frac{1}{4}$ x 4 slide projector per building.*

7.   One opaque projector per building.*

8.   One sound recorder (wire, tape or disc) per
     building.*

9.   One portable P. A. system per building.*

---

* At least available to the school from the Center.

The minimum number of the different pieces of equip-
ment listed above are not as high as the numbers listed in
the standards on page 13.   Using the above recommendations.

---

[14] Charles F. Schuller, editor, The School Administra-
tor and His Audio-Visual Program, (Department of Audio-Visual
Instruction, National Education Association, Washington, D.C.)
1954, p. 341.

instead of those on page 13, the shortages listed in this
chapter would be greatly reduced. In fact there would no
longer be any shortage as far as record players, filmstrip
and sound motion picture projectors were concerned. The
Department of Audio-Visual Education would need to purchase
the following number of pieces of equipment; nine opaque
projectors, four public address systems, seven lantern slide
projectors and two sound recorders. While these purchases
would be needed to bring certain schools up to the recom-
mended minimum number, there would be available to each
school any of this equipment from the Audio-Visual Center.

On pages 47 and 48 in graphic form will be found the
number of the different pieces of equipment owned as com-
pared to the recommended minimum numbers listed on page 45.

Using the newer recommendations shows that much
progress has been made in the development of Audio-Visual
Education in Chicopee, Massachusetts.
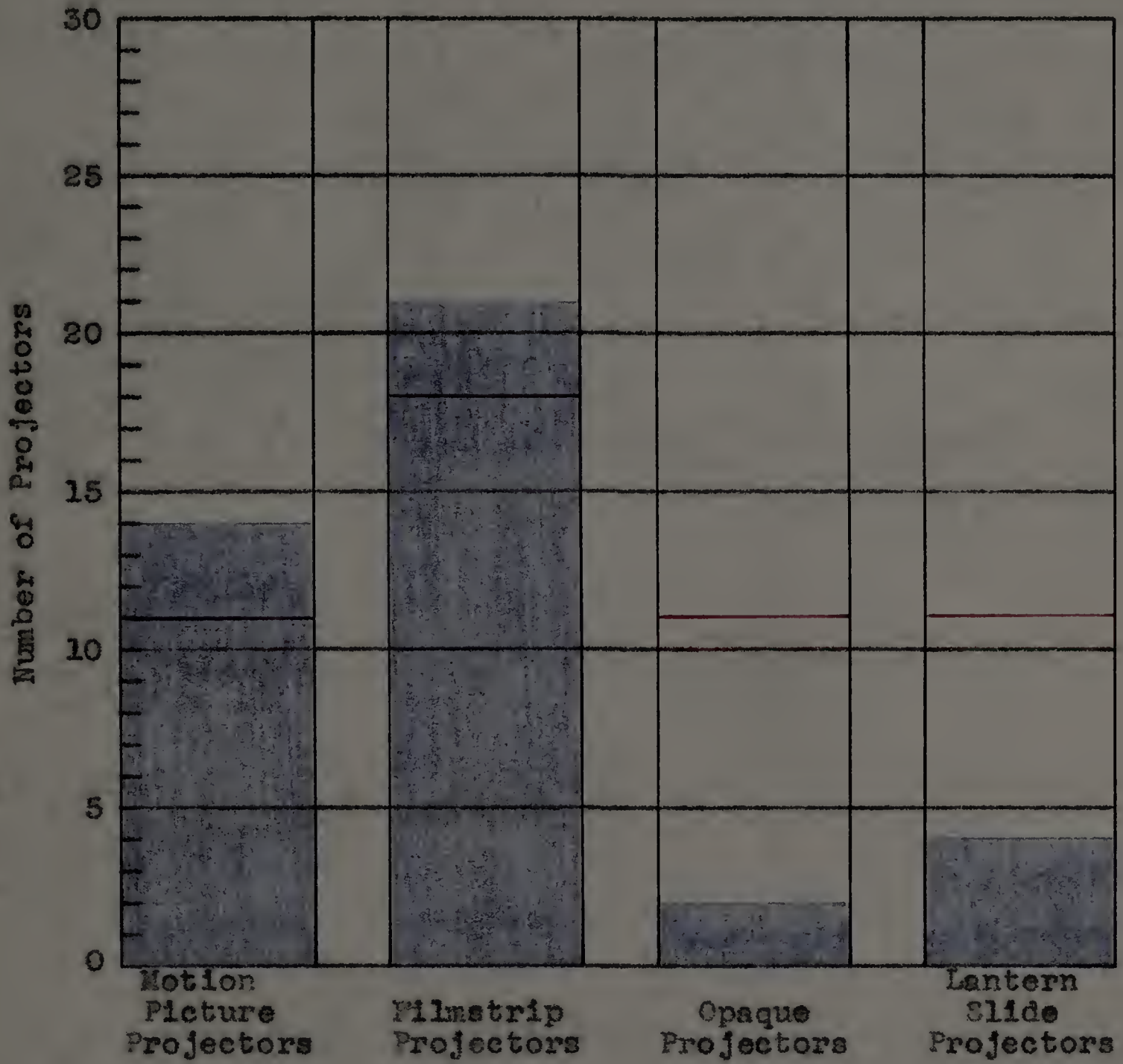
Graph 5

Comparison between number of projectors
owned (columns) and suggested minimum
number for each projector (red line), 1957
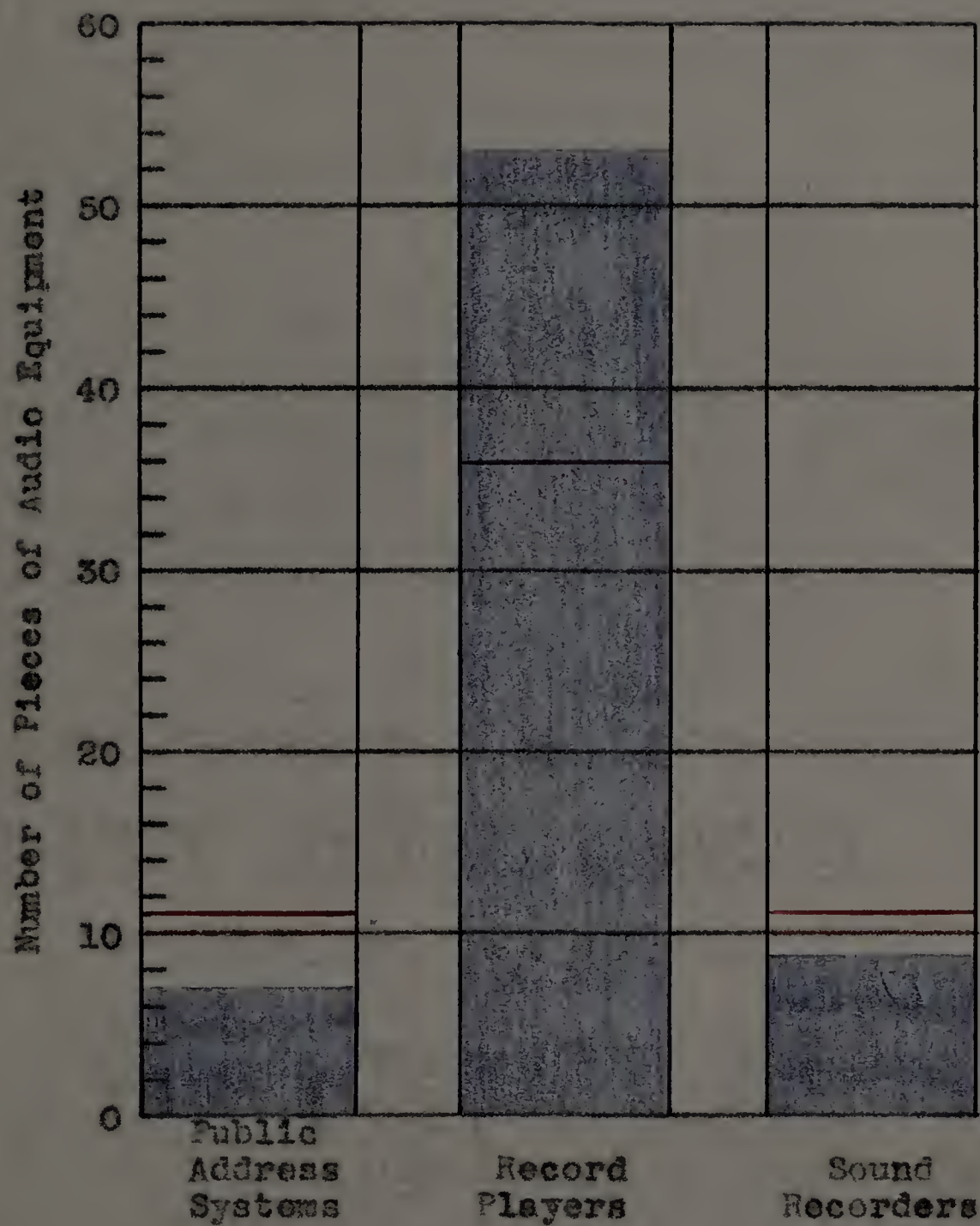
Graph 6

Comparison between audio-equipment
owned (columns) and suggested minimum
number for each piece (red line), 1957

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APPENDIX

APPENDIX A   Questionnaire Used in the 1953 Survey.

Principal's Name_____ School_____

Number of Pupils__Number of Classrooms__Number of Teachers__

Grades: 1st__ 2nd__ 3rd__ 4th__ 5th__ 6th__ 7th__ 8th__

Yes No

( ) ( ) 1. Do you have a sound motion picture projector
              in your building?

( ) ( ) 2. Do you have a tripod portable screen for each
              projector or a wall type screen in each
              classroom?

( ) ( ) 3. Do you have a two or three speed record-
              transcription player?

( ) ( ) 4. Do you have a filmstrip (2 x 2) projector?

( ) ( ) 5. Do you have a lantern slide projector?

( ) ( ) 6. Do you have an opaque projector?

( ) ( ) 7. Do you have a sound recorder (wire, tape
              or disc)?

( ) ( ) 8. Do you have a public address system?

( ) ( ) 9. Do you have an audio-visual program in your
              school?

( ) ( ) 10. Is there one person in charge? Who? Principal
                                                    Teacher
                                                    Other

( ) ( ) 11. Can each room be darkened for projection
              purposes?

( ) ( ) 12. Does each teacher have access to a room that
              can be darkened?   Where?_____

( ) ( ) 13. Do you own any filmstrips? If yes, how many?

( ) ( ) 14. Do you own any motion picture films? If yes,
              how many?

APPENDIX A (con't)

_____

Yes   No

_____   15.   How many radios in the building?

_____   16.   How many stereoscopes in the building?

( )   ( )   17.   Do you have an audio-visual center in your
                  school?

( )   ( )   18.   Do you have an audio-visual library (film-
                  strips, slide, recording, flat picture, etc.)?

( )   ( )   19.   Have you made arrangements for renting and
                  borrowing other audio-visual materials?

( )   ( )   20.   Do you have a projection table (40" to 44")?

( )   ( )   21.   Does each room have an electrical outlet?

( )   ( )   22.   Are you promoting different activities such
                  as field trips, dramatic participation,
                  pupil collections and demonstrations?

APPENDIX B   Questionnaire Used in the 1955 Survey

Principal's Name_____ School_____

Number of Pupils___Number of Classrooms___Number of teachers__

Yes No

( ) ( ) 1. Do you have a sound motion picture projector in
              your building?

( ) ( ) 2. Do you have a portable tripod screen or wall
              type screen?

( ) ( ) 3. Do you have a record player? If yes, what
              speeds will it play?

( ) ( ) 4. Do you have a filmstrip (2 x 2) projector?

( ) ( ) 5. Do you have a lantern slide projector?

( ) ( ) 6. Do you have an opaque projector?

( ) ( ) 7. Do you have a sound recorder (wire, tape or
              disc)?

( ) ( ) 8. Do you have a public address system?

( ) ( ) 9. Do you have an audio-visual program in your
              school?

( ) ( ) 10. Is there one person charged with responsibility?

( ) ( ) 11. Do you have an audio-visual center in your
              school?

( ) ( ) 12. Do you have an audio-visual library?

( ) ( ) 13. Have you made arrangements for renting and
              borrowing materials?

( ) ( ) 14. How many rooms can be darkened for projection
              purposes? If no classrooms, where?

( ) ( ) 15. Do you own any filmstrips?

( ) ( ) 16. Do you own any films?

APPENDIX B (con't)

Yes No

( ) ( ) 17.   Do you have a projection table?

( ) ( ) 18.   Do you own any radios?

( ) ( ) 19.   How many rooms have an electrical outlet?

( ) ( ) 20.   Are you promoting different activities such
                 as field trips, dramatic participation,
                 pupil collections and demonstrations?

( ) ( ) 21.   If you own any audio-visual equipment or
                 materials not mentioned, will you please
                 list it on the reverse side?

APPENDIX C   Checklist for Evaluating a School Audio-
Visual Program

University of Massachusetts
Department of Education

Essential Policies

Yes   No

( ) ( )   1. We have put someone in charge of our audio-
visual program and created an audio-visual
center.

( ) ( )   2. We are promoting all kinds of activities, such
as contrived experiences, dramatic participa-
tion, field trips, pupil constructed objects
and collections.

( ) ( )   3. Every teacher has access to a projection room
that can be darkened (preferably his own
classroom).

( ) ( )   4. We have started audio-visual libraries (scrips,
slides, diaramas, flat pictures, recordings,
etc.) and catalogues have been distributed.

( ) ( )   5. We have arranged to rent and borrow other
materials.

( ) ( )   6. Audio-visual materials are used primarily
with classroom groups.

Optimum Equipment

( ) ( )   1. We have a filmstrip (2 x 2 projector-non-tear
type) for each 200 students.*

( ) ( )   2. We have a two or three record transcription
player for each 200 students.*

( ) ( )   3. We have a radio for each classroom (FM/AM
preferred).

( ) ( )   4. We have a sound motion picture projector for
each 200 students.)

APPENDIX C (con't)

Yes   No

( )   ( )   5. We have a lantern slide ($3\frac{1}{4}$ x 4) projector for each 400 students.*

( )   ( )   6. We have an opaque projector for each building.

( )   ( )   7. We have a portable tripod screen to go with each projector or a wall type screen in each classroom.

( )   ( )   8. We have a sound recorder (wire, tape or disc) for each school.

( )   ( )   9. We have a public address system for each school (may be microphone plus 2 by 4).

( )   ( )   10. We have one set of stereoscopes for each 400 students.) (elementary schools only)

* . . . . . or one for each building where enrollment is less than the number specified.

APPENDIX D . . . . Edgar Dale's "Cone of Experience."

```
                        /\
                       /  \
                      /Verbal\
                     /Symbols \
                    /----------\
                   /   Visual   \
                  /   Symbols    \
                 /----------------\
                /    Recordings    \
               /      Radio         \
              /----------------------\
             /    Motion Pictures     \
            /- - - - - - - - - - - - - \
           /       Television          \
          /----------------------------- \
         /          Exhibits             \
        /--------------------------------- \
       /          Field Trips              \
      /------------------------------------- \
     /          Demonstrations               \
    /----------------------------------------- \
   /        Dramatized Experiences             \
  /--------------------------------------------- \
 /        Contrived  Experiences                 \
/------------------------------------------------- \
    Direct, Purposeful Experiences
```
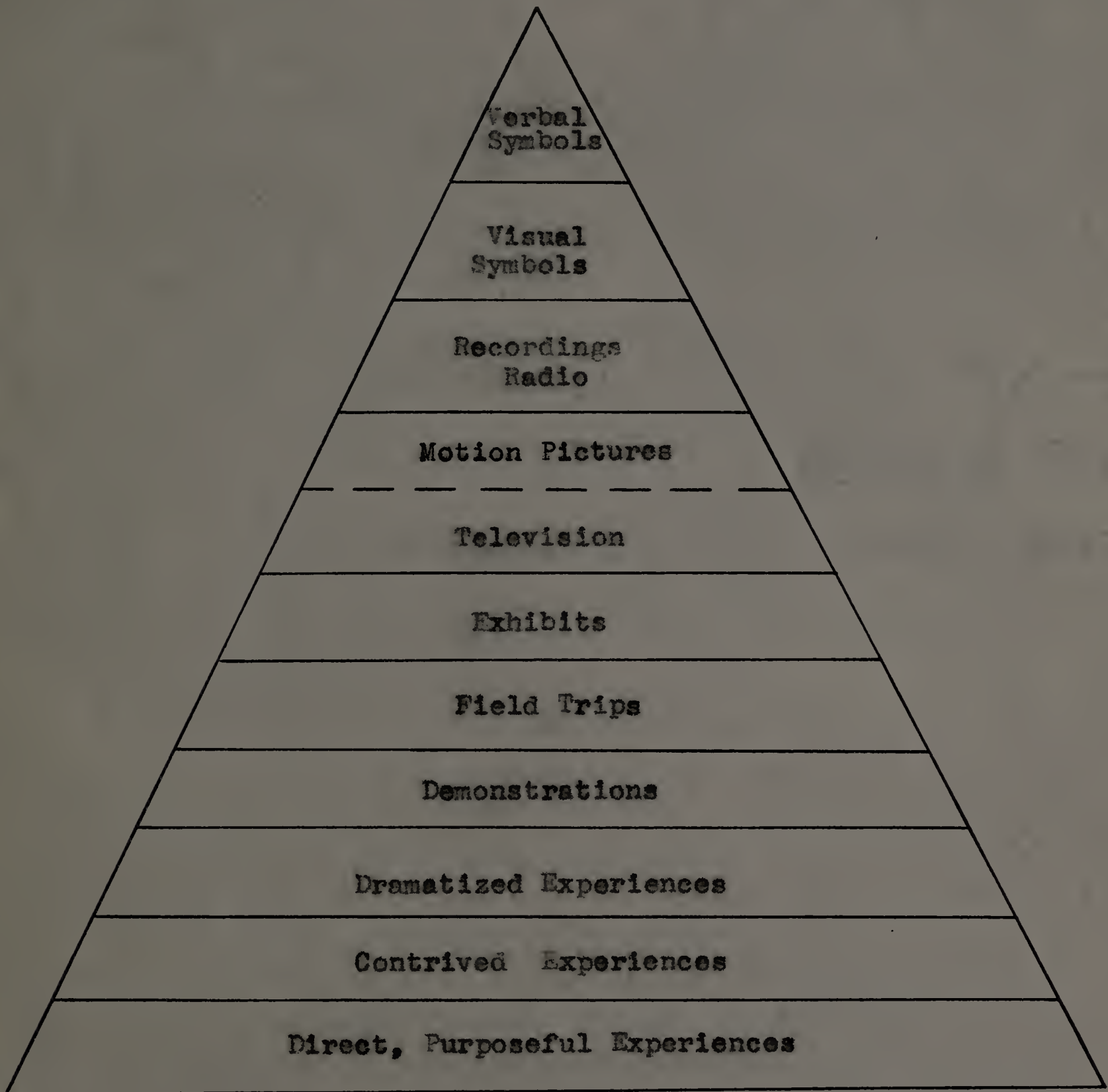
The "Cone of Experience."

APPENDIX E . . . . James S. Kinder's "Pyramid."

VICARIOUS LEARNING
Through
WORDS
(Abstract symbols of reality)

Speech - Writing - Formulae

VICARIOUS LEARNING
Through
AUDIO-VISUAL MATERIALS
(Mechanical Representations of reality)

Maps - Charts - Graphs - Objects
Specimens - Pictures - Models - Slides
Motion Pictures - Recordings
Radio - Dramatics - Television

DIRECT LEARNING
Through
FIRSTHAND EXPERIENCES
(Immediate Sensory contacts with reality)

Resource Visitors - Interviews - Field Trips
Surveys - Extended Field Trips
Camping - Service Projects - Work Experiences

The Three Layers of a Pyramid

Approved by

Raymond Wyman
Dr. Raymond Wyman
Assc. Professor of Education

Chas. F. Oliver
Mr. Charles F. Oliver
Assc. Professor of Education

Problem Committee

Date _January 15, 1958_