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AN AUDIO-VISUAL EDUCATIONAL PROGRAM ADAPTED TO  
THE SPECIFIC NEEDS OF THE SEVENTH, EIGHTH,  
AND NINTH GRADES OF THE HIGH POINT  
JUNIOR HIGH SCHOOL

by

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TABLE OF CONTENTS

CHAPTER	PAGE
I. INTRODUCTION. . . . .	1
Justification of the Problem. . . . .	1
Statement of the Problem. . . . .	5
Delimitation of the Problem . . . . .	6
Definition of Terms . . . . .	7
Method. . . . .	8
Survey of Literature. . . . .	9
II. AUDIO-VISUAL AIDS ESSENTIAL FOR THE SEVENTH, EIGHTH, AND NINTH GRADES. . . . .	11
Introduction. . . . .	11
Types of Audio-Visual Aids. . . . .	11
Advantages and Limitations. . . . .	12
Summary . . . . .	24
Use of Aids in High Point . . . . .	25
Gathering Data. . . . .	25
Evaluation. . . . .	30
III. PRINCIPLES OF MANAGEMENT. . . . .	32
Introduction. . . . .	32
Management in High Point. . . . .	39
IV. NEGLECTED AREAS . . . . .	42
Introduction. . . . .	42
Other Neglected Areas . . . . .	76
V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS . . . . .	78
Summary . . . . .	78

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TABLE OF CONTENTS

CHAPTER	PAGE
Conclusions . . . . .	79
Recommendations . . . . .	80
BIBLIOGRAPHY. . . . .	82
APPENDIX. . . . .	86

LIST OF TABLES

	PAGE
TABLE I . . . . .	26
TABLE II. . . . .	27
TABLE III . . . . .	29

## CHAPTER I

### INTRODUCTION

#### Justification of the Problem

The increasing interest in the improvement of instruction in the public schools of North Carolina for the past few years focused attention on the audio-visual education program now being developed in this country. Many indictments have been hurled against the effectiveness of our instruction in language arts and other areas of the curriculum by business men, members of college faculties, and more recently by examiners of military candidates. They realize the necessity for knowing and using a wide variety of materials in securing the development of functional knowledge and understanding. As a result, teachers are realizing that audio-visual aids give to pupils insight, understanding and the ability to remember.

The Department of Elementary School Principals, in discussing the place of visual instruction in the school curriculum, reached the following conclusions:

Education is aided by three of the most potent gifts of mankind to humanity--language, the printing press and the art of photography. These methods of recording and communicating knowledge, along with experience, form the cornerstones of the learning process.

In the beginning, learning grew out of experience. This limited knowledge to the immediate environment of the peoples. With the growth of language, learning spread through the use of word symbols, both oral and written. From the time that primitive man carved picture writings in stone through the period of the hand-copied books of the middle ages, the power of the written word grew slowly. The invention of the printing press came as a great impetus to world enlightenment. With photography, in all of its various forms, has come a new method of recording facts and commu-

nicating thoughts.<sup>1</sup>

McKown and Roberts found that:

. . . the expressions such as "visual education," "visual instruction," "visual aids," and "audio-visual instruction," "audio-visual aids," and "visual sensory aids" are of recent origin, as far as professional literature is concerned, the method involved is very, very old. In fact, because it is both simple and natural, it is probably the oldest method of conveying ideas.<sup>2</sup>

In "Neglected Areas of Curriculum Implementation," F. E. Brooker asserts:

. . . school people face a new and tremendous responsibility in developing future citizens. The educational objectives which they are committed to attain are broader than educators have ever assumed. The character of these objectives is such that the traditional methods of lectures, readings and reports are unlikely to achieve them effectively . . . (Audio-visual aids) are new media of communication which have proved effective in promoting similar objectives in the culture at large. A new consideration of them and their potential educational role is suggested as a means whereby the new curricula may be implemented more effectively.<sup>3</sup>

One finds here a challenge, not only to teachers in the elementary and high school grades, but even to those in colleges.

Edgar Dale, Professor of Education at Ohio State University, an authority in audio-visual education, believes that:

. . . all teaching, from the first grade through the college level, can be greatly improved by visual and auditory materials because these teaching materials can make the learning experience far more concrete and memorable . . . a great many teaching problems may be solved, partly or wholly, by the use of the rich experience which can be gained by certain methods of teaching . . . visual and auditory techniques offer great opportunities for improving learning . . . Ten years ago advocates of "visual education" had

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1. The National Education Association, Department of Elementary School Principals, Visual Education. Washington, D. C.: The Department, 1940. p. 62.

2. Harry C. McKown and Alvin B. Roberts, Audio-visual Aids to Instruction. New York: McGraw-Hill, 1940. p. 4.

3. F. E. Brooker, "Neglected Areas of Curriculum Implementation," Educational Record, 20:225, April, 1939.

not quite passed the pioneering stage. They had to convince many people that these new methods would really produce results. Today few people publicly oppose the use of audio-visual materials in education. The change has come about not only because of successful use of audio-visual techniques in teaching the armed forces, but also because these teaching materials have accomplished remarkable results in the classrooms of the nation during the last ten years."<sup>4</sup>

Audio-visual aids proved themselves priceless to the armed services. They helped both instructors and men in the speedy learning processes so vital to victory.

Colonel M. E. Gillette, in charge of the production of visual aids for army training, made the following public statement:

These officers--whose business it is to know--assure me that training films, used intelligently in combination with normal methods, can cut the time for training up to 44 per cent in some cases.<sup>5</sup>

Newsweek published an article entitled "Army and Navy Training Sets Fast Pace for Nation's Schools," which says:

When ten minutes of audio-visual instruction was added to the regular lectures and quizzes, service teachers not only aroused interest and made the subject matter more understandable, but also rendered routine and tedious repetition unnecessary. When modern aids (films and flash cards) supplemented regular army training, class time was cut 25 to 45 per cent. The Navy announced after using its audio-visual aids materials that its personnel were retaining class matter up to 55 per cent longer. When both Army and Navy correlated phonograph records with their language courses, boys who had no particular linguistic ability learned colloquial Chinese and Japanese in three short months.<sup>6</sup>

Koon, in his study of "School Use of Visual Aids," found that audio-visual aids assist teachers in presenting materials more vividly

4. Edgar Dale, Audio-Visual Methods in Teaching. New York: The Dryden Press, 1946. p. 6.

5. The North Carolina State Department of Public Instruction, Handbook for Elementary and Secondary Schools. Raleigh: The Department, 1947. pp. 103-104.

6. "Army and Navy Training Sets Fast Pace for Nation's Schools," Newsweek, 23:101-107, June 12, 1944.

and enable students to learn faster and more efficiently. Eighty-five per cent of learning is visual and only twelve per cent auditory. Movies and slides help students simply because they are visually concrete; e.g., travel movies increase learning in geography up to 50 per cent.<sup>7</sup>

Elizabeth Laine in her book, Motion Pictures and Radio, concludes: After attending visualized lectures, school children learn 25 per cent faster and retain class material 20 per cent longer.<sup>8</sup>

Modern educational objectives require improvement in instructional materials and practices, and, in the dynamic nature of these materials--their content, organization and manner of presentation--assure that these improvements, when wisely used, will clarify concepts and make learning more significant and efficient.

Hoban, Hoban, and Zisman set forth the principle that:

. . . visual aids are effective in instruction to the degree that they approach reality of experience. Conversely, the more they are removed from reality of experience, the more ineffective they are. Reality of experience is often considered only as objective reality, i.e., the real thing can be perceived by the individual. Rather, reality is subjective. The experience must be real to the child.<sup>9</sup>

Edgar Dale draws the following conclusion in regard to the child's learning by doing:

Education must become the rich, active, personal and adventure-some thing it is when a father teaches his son how to fish, or a mother

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7. Clyde M. Koon, School Use of Visual Aids. Washington, D. C.: U. S. Department of the Interior, Department of Education, 1938. p. 51.

8. Elizabeth Laine, Motion Pictures and Radio. New York: McGraw-Hill, 1938. p. 40.

9. Charles F. Hoban and others, Visualizing the Curriculum. New York: The Dryden Press, 1937. p. 22.

teaches her daughter how to bake a cake, or a scout leader explains to youngsters how to find their way in the woods without a compass, or a dramatic teacher coaches a play. For in all these situations, learning has motivation, clarity, and use to such a degree that permanence can almost be taken for granted. It has, in addition, a train of other qualities--such as pleasureableness, emotional gratification, and a sense of personal accomplishment--which strongly reinforces the learning.<sup>10</sup>

Educators are rapidly recognizing the value of visual materials as teaching aids. Hence, increasing numbers of school systems are providing them. The fact that North Carolina educators are cognizant of the values and trends in audio-visual aids is shown in the 1947 Handbook for Elementary and Secondary Public Schools, which says:

1. What are Audio-Visual Aids?

They are those aids which enlist the sensory faculties of sight and hearing in making a more adequate interpretation of verbal communication. Audio-visual aids, therefore, supplement general instruction and are only tools for teaching. Most auditory and visual aids can be classified under the following headings:

- (1) The excursion (field trip, school journey)
- (2) Realia (objects, specimens, models, museums)
- (3) Dramatization and demonstrations
- (4) Television
- (5) Sound motion pictures
- (6) Silent motion pictures
- (7) "Stills" (photographs and other "flats," either printed or projected)
- (8) Sound reproductions (radios, phonographs, sound systems, transcriptions)
- (9) Graphic aids (maps, charts, graphs, etc.)

2. Will proper use of Audio-Visual Aids enable the teacher to "speed up" the learning process?

Yes. All audio-visual aids are helpful.<sup>11</sup>

Statement of the Problem

The purpose, therefore, of this study is to develop an audio-visual educational program adapted to the specific needs of the seventh, eighth, and ninth grades of the High Point Junior High School.

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10. Dale, op. cit., p. 18.

11. The North Carolina State Department of Public Instruction, op. cit., p. 103.

The development of this thesis necessitates adequate answers to the following questions:

- I. Can audio-visual aids improve instruction?
- II. What is the minimum list of such aids deemed adequate for the curriculum of these grades and how adequate are the selected materials and procedures of the High Point Junior High School?
- III. What principles of management are essential to insure maximum effective use?
- IV. What neglected areas emerge as the result of a survey?

#### Delimitation of the Problem

This study was limited to the High Point Junior High School, which has an enrollment of 1,366 students. Of this number, 665 are boys and 701 are girls. As the other twelve units of High Point, including two senior highs and ten elementary schools with enrollments ranging from 299 to 1,386 students, have problems different from those in the Junior High School, they were not included in this study.

This school is located in the Piedmont section of North Carolina, in the town of High Point. The population of High Point is 55,000, including outlying districts whose children are enrolled in the city schools.

High Point is a city of widely diversified industries, with some specializing in furniture and hosiery.

Reference to audio-visual materials as a part of a school's program suggests a tremendous number of aids and equipment; however, this study does not include all audio-visual aids. Such aids as crayons, blackboards, and bulletin boards are standard equipment and require no further discussion. Other aids which will not be discussed include:

silent films, the making of recordings, pianos, television, cartoons, puppets, tableaux, exhibits, and museum materials. The audio-visual aids which are discussed in this study include excursions, photographs, slides, filmstrips, diagrams, charts, maps, globes, sound pictures, radio, phonograph records, objects, models, specimens, dramatizations, and demonstrations.

#### Definition of Terms

Visual materials have been used in the classroom since the beginning of guidance in learning, but the term, "audio-visual aids," is more easily recognized if it is defined. Charles Hoban and others give this interpretation:

A visual aid is any picture, model, object, or device which provides concrete visual experience to the learner for the purpose of (1) introducing, building up, enriching, or clarifying abstract concepts, (2) developing desirable attitudes, and (3) stimulating further activity on the part of the learner. For convenience, these various visual aids have been classified as (a) the school journey, (b) museum materials, (c) motion pictures, (d) still pictures, (e) graphic materials.<sup>12</sup>

To further classify these aids, Elizabeth Noel and Paul Leonard say:

Audio-visual education refers to the carefully planned and integrated use of a wide range of teaching materials from the kindergarten through the college. Audio-visual education includes the use of field trips or excursions, sound and silent motion pictures, television, objects, models, specimens, dioramas, slides, filmstrips, stereographs, study prints, posters, microphotographs, radio programs, recordings, maps, charts, graphs, and synthetic training devices. It also includes the use of the blackboards, the bulletin board, the ball display case, and similar facilities available in most schools.<sup>13</sup>

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12. Hoban and others, op. cit., p. 9.

13. Elizabeth Goudy Noel and J. Paul Leonard, Foundations for Teacher Education in Audio-visual Instruction. American Council on Education Studies. Washington, D. C.: The Council, 1947. p. 1.

Dorris, in her text, Visual Instruction in the Public Schools, says:

Visual instruction means the enrichment of education through the seeing experience. Broadly speaking . . . it is not of course a separate subject nor even a new procedure in the teaching process, it is merely a means to an end. Visual instruction . . . is the presentation of knowledge through the "seeing experience." The "seeing experience" has always been man's simplest and most natural means of gaining information . . . <sup>14</sup>

#### Method

The first step was a survey of the literature to find pertinent materials. The following indexes were carefully checked to avoid duplication of any previous work and to find parallel related material.

Palfrey, Thomas R. and Colman, Henry E. Guide to Bibliographies of Theses--United States and Canada. Second Edition. Chicago: American Library Association, 1940.

United States Library of Congress, Catalogue Division. List of American Doctoral Dissertations. Washington, D. C., 1913-1938.

Doctoral Dissertations Accepted by American Universities. New York: The H. W. Wilson Company, 1934-1946.

United States Office of Education, Library. Bibliography of Research Studies in Education. Washington, D. C.: Government Printing Office, 1929-1945.

Good, Carter Victor. "Doctor's Theses under Way in Education." January issue of the Journal Educational Research, (January, 1931-January, 1946).

Gray, Ruth A. Doctor's Theses in Education. Office of Edu-

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<sup>14</sup>. Anna V. Dorris, Visual Instruction in the Public Schools. New York: Ginn & Company, 1928. p. 6.

cation Pamphlet No. 60. Washington, D. C.: Government Printing Office, 1935.

Gray, Ruth A. Education for Victory. February, 1942-July, 1945.

School Life. Washington, D. C.: Superintendent of Documents, Government Printing Office, March 1935-March, 1947.

Monroe, Walter Scott and Shores, Louis. Bibliographies and Summaries in Education. New York: The H. W. Wilson Company, 1936.

Education Index. A Cumulative Author and Subject Index to a Selected List of Educational Periodicals, Books and Pamphlets. New York: The H. W. Wilson Company, 1929-1946.

The Bibliographic Index. A Cumulative Bibliography of Bibliographies. New York: The H. W. Wilson Company, 1939-1946.

The second step was to formulate a questionnaire to send to each teacher in the High Point Junior High School, asking for a report on the number of audio-visual aids used in various subjects during 1947. The answers were accepted without comment. The results were analyzed and tabulated.

The third step was a study of the audio-visual aids. The advantages and disadvantages of these aids were then selected from the various authorities which treat the problem.

#### Survey of Literature

Raymond C. Deeter from Ohio State University wrote his master's thesis in 1939 on A Handbook of Audio-Visual Aids. This study discussed the value of the administration and supervision of audio-

visual aids.<sup>15</sup> The similarity of the present study lies in the fact that within recent years a marked trend has been to integrate audio-visual materials into the curriculum and to make one person responsible for the administration and supervision of visual aids within the individual school. The study is dissimilar in that no suggestions were offered as to methods by which classroom teachers could use audio-visual aids satisfactorily without an administrator, a depository, and the necessary repairs.

Walter Allen Miller wrote his master's thesis at Texas Christian University in 1940, on the subject of The Status of Visual Instruction in East Texas.<sup>16</sup> The only similarity to the present study lies in the fact that both studies are interested in the Junior High School and include similar audio-visual aids. The study is dissimilar in that the author dealt with the advantages to be gained as a result of establishing a regional central materials bureau and attempted to show how the program would expand as a result of appropriations necessary for a larger financial budget.

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15. Raymond C. Deeter, A Handbook of Audio-Visual Aids. Ohio State University, 1939.

16. Walter Allen Miller, The Status of Visual Instruction in East Texas. Texas Christian University, 1940.

## CHAPTER II

### AUDIO-VISUAL AIDS ESSENTIAL FOR THE SEVENTH, EIGHTH, AND NINTH GRADES

#### Introduction

The purpose of this chapter is to present the advantages and limitations of the audio-visual aids as selected for this study, and to determine to what extent these aids are used in the seventh, eighth, and ninth grades of the High Point Junior High School. In an effort to determine the values and extent of use, the following points were studied:

1. Survey of the literature
2. Use of aids

#### Types of Audio-Visual Aids

Five types of audio-visual aids have been selected, for the following reasons:

1. The majority of the authorities recognize these aids.
2. The North Carolina Handbook for Elementary and Secondary Schools lists these.
3. The list is available to the High Point Junior High School teachers.

The five types of audio-visual aids selected were: (1) excursions, (2) realia, (3) sound productions, (4) still pictures, and (5) graphic aids.

### Advantages and Limitations

Fortunately for the purpose of this study, there were authoritative criteria for the work. Accordingly, the advantages and limitations have been drawn from the works of these authorities.

#### I. The Excursion

Charles Hoban and others, in their thoughtful and comprehensive study of visual aids, have expressed themselves strongly in favor of the "field trip" as the first visual technique to be used in visual instruction:

1. because it brings the pupil into direct contact with a fundamental situation in which the elements being studied are perceived in their various relationships as they actually exist:
2. because it provides experience in all elements of concreteness--it is the most real and the most concrete of the visual techniques:
3. because it is the most accessible and often the least expensive of the techniques of visual instruction: the school journey literally waits in the backyard of every teacher and pupil.<sup>1</sup>

Dale emphasizes the importance of the school excursion. He says:

An excursion is a planned visit to a point outside the regular classroom. It may be to a place inside or outside the school building. Within the school itself, it may take the form of an organized trip to see and study the heating system, the school kitchen, the school store . . . The chief difference between an excursion and other educational experiences is that the students get their experiences in the field and not in the classroom . . . it is a going-out process in which students study the workaday world in operation.<sup>2</sup>

For a field trip, much preparation is necessary on the part of the pupil and the teacher. Cline M. Koon recommends:

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1. Charles F. Hoban and others, Visualizing the Curriculum. New York: The Dryden Press, 1937. p. 29.

2. Edgar Dale, Audio-Visual Methods in Teaching. New York: The Dryden Press, 1946. pp. 134-135.

Regardless of the nature of the excursion, advanced preparation, proper attitude during the trip, and carefully prepared reports are important essentials. The safety of pupils must be given consideration. The pupils should have clearly in mind the purpose of the trip, the general plan to be followed, their individual responsibilities for the success of the trip, and much preparation as is necessary to guide them in their observation. Details should be so planned that the focal point of every pupil's attention will be on the thing to be learned during the specific part of the trip where the learning should take place.<sup>3</sup>

To be of the most value to the pupils, the field trip must be followed by discussion, experimentation, or narration.

#### Advantages and Limitations

1. The journey presents subjects in their natural setting.
2. Provides concrete evidence necessary for pupil's understanding.
3. Correlates the school subjects with actual life.
4. Develops keenness of observation.
5. Abolishes the formal schoolroom atmosphere and utilizes the social-lesson attitude.
6. Encourages sequent narration and discussion.
7. Makes children more observant alone or with adults.<sup>4</sup>

The field trip, however, has several disadvantages:

1. Inclement weather.
2. Transportation difficulties.
3. Children are not always able to see the specific items visited because of large groups and explanations beyond their comprehension.<sup>5</sup>

## II. Realia

Charles Hoban and others rank the realia as the visual aid next to the school excursion in concreteness, and often above the excursion in availability.<sup>6</sup> Objects, models, specimens, and other media,

3. Cline M. Koon, School Use of Visual Aids. Washington, D. C.: U. S. Department of the Interior, Department of Education, 1938. p. 24.

4. Ellsworth C. Dent, The Audio-Visual Handbook. Chicago: Society for Visual Education, 1946. p. 31.

5. Ibid., pp. 31-33.

6. Hoban and others, op. cit., p. 64.

when properly used, are decidedly valuable; as they provide concrete experiences instead of abstract ideas.

Cline M. Koon, of the United States Office of Education, is among those who define "objects, models, and specimens." Koon says:

Objects are "the things themselves"--insects, fruit, vegetables, thermometer, tools, weapons, fire extinguishers, leaves and animals.

Specimens are "parts of objects"--pieces of glass, wood, leather, paper, crystals, asbestos, porcelain.

Models are "replicas of objects"--house, engine, boat, airplane, bridge, steamshovel, coal mine. Models of the following are seen in operation--a drawbridge, a pump, the solar system, or a water wheel.<sup>7</sup>

#### Advantages and Limitations

McKown and Roberts emphasize three distinct advantages and limitations in the using of objects, models, and specimens in class instruction. These follow:

1. An object, model, or specimen gives the pupil first-hand experience.
2. By collecting and handling these materials, children gain an understanding of their characteristics and use.
3. These aids can be very useful in helping the child to understand the elements of his environment and the relationship of these elements.

Limitations are:

1. Often they are out of their functional relationships.
2. They are larger or smaller than the original.
3. They are oversimplified.<sup>8</sup>

When it is possible to do so, students themselves should be allowed to demonstrate processes and operate models. Also, when the material is plentiful, or of such nature that it will not be easily

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7. Koon, op. cit., p. 19.

8. Harry C. McKown and Alvin B. Roberts, Audio-visual Aids to Instruction. New York: Teachers College, Columbia University, 1931. p. 56.

ruined, all students should be permitted to handle it. The sense of touch helps to make the experience realistic.

#### A. Dramatization and Demonstration

Dramatization and demonstration are probably the most widely used audio-visual aids. They have become an integral part of the curriculum.<sup>9</sup> An example of their importance can be seen in the fact that Edgar Dale has placed dramatization and demonstration on the third and fourth band on the "Cone of Experience."<sup>10</sup> He made the following statements concerning dramatization when used in class instruction:

Dramatization can mean: 1. participating in a drama, 2. watching a dramatization of any kind from a spontaneous playlet to a finished professional performance.

In consideration of the two activities, the first is definitely more meaningful and it is also more immediate to the participant, for he or she actually takes part in the reconstructed experience.

Dale continues his discussion on dramatization and lists the following advantages:

1. Dramatization gives the participant an intimate understanding of the meaning of the play. One learns what it is to actually communicate, to perform these meanings, in an intimate and penetrating manner.

2. Dramatization may be a therapeutic one for the performer. It may be a general kind of therapy, by which a self-conscious child learns to take a role in which his shyness is gradually overcome. It may correct the behavior of a person who has been incomprehensible.

3. Other values are: cooperative action, voice training, facial expression, body carriage, and poise.<sup>11</sup>

Disadvantages as listed by Dale are:

1. Dramatization requires a considerable amount of the teacher's time.

2. Frequently dramatization is time wasted; children become so involved in "the doing" that they seem to forget what they were

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9. Hoban and others, *op. cit.*, p. 16.

10. Dale, *op. cit.*, p. 100.

11. *Ibid.*, p. 105.

supposed to be communicating.

3. The performance oftentimes appears "too rehearsed."<sup>12</sup>

Demonstration is defined as a "public showing emphasizing the salient merits, utility, efficiency . . . of an article or product . . . In teaching, the meaning is extended to include ideas, skills, attitudes, processes . . . to show how . . ." Three methods are involved in demonstration: the doing, the telling, the showing.<sup>13</sup>

Advantages are:

1. Demonstrations are not limited to material objects, nor to ideas immediately connected with material objects, but to abstract subjects.
2. As an audio-visual material, it is indispensable.
3. Mechanical demonstrators are often more effective than human.

Limitations are:

1. The student frequently becomes so involved in the "watching process" that he fails to concentrate on the purpose for which the demonstration is being given.
2. Frequently the groups are large; all cannot see and interest lags.<sup>14</sup>

### III. Sound Productions

#### A. Motion Picture

The motion picture is recognized as one of the most powerful teaching instruments yet invented. It is the best substitute for the real experience; and, since so many experiences are inaccessible to children, this aid is invaluable.

The chief function of the motion picture is:

1. Depiction of obvious action.
2. Depiction of less obvious action by

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12. Ibid., pp. 112-113.

13. Ibid., p. 121.

14. Ibid., pp. 128-131.

- a. slow motion photography
- b. time lapse photography
- c. microphotography
- 3. Development of attitudes.<sup>15</sup>

The chief advantages of the motion pictures, as listed by Dent, are:

1. The motion picture has the unique advantage of depicting action or behavior, with its irresistible illusion of life and reality. It is, however, an expensive visual aid and for that reason should be resorted to only when necessary (a) to show activity, which no other pictorial aid can actually portray, and (b) to provide vicarious experiences.
2. The film has value in presenting popular non-technical phases of the subject to those who have relatively little knowledge regarding it.
3. The motion picture with its animated diagrams enables one to visualize the invisible.
4. The film is unique in revealing for the first time things which are too slow or too fast to be seen by the human eye.<sup>16</sup>

Limitations are:

1. The film with its fast motion of projection may, however, be stopped, slowed up, or shown a second or third time if complete study and analysis of the content is to be achieved.
2. Some of the motion pictures have a tendency to relegate the teacher to the background.
3. Films are perishable and do not stand wear and tear.
4. The film to be effective in the classroom should be pre-viewed by the teacher and followed up by definite study.
5. The film is not always available at the right time.
6. The film is used too often as a substitute for, rather than a supplement to, other methods of presentation.<sup>17</sup>

#### B. Radio

The radio has a tremendous influence on the lives of children and adults. The present news broadcast of the day's events, or the fantastic "broadcast from Mars," easily demonstrates the power radio

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15. Ibid., pp. 97-106.

16. Dent, op. cit., pp. 108-109.

17. Ibid.

has to mould or change the thought and emotions of both child and adult.

The advantages of the radio are:

1. It is capable of enriching all classroom work due to the variety of worthwhile programs.
2. It provides opportunities for wholesome use of leisure time.
3. It offers unlimited opportunities and judgment.<sup>18</sup>

The radio is limited in its scope, owing to the following reasons:

1. Even though a teacher has advanced knowledge concerning the type of program, he may be unfamiliar with the exact treatment of the subject during the broadcast.
2. Many radio stations do not furnish manuals for broadcast, thus prohibiting advance preparation.
3. Teachers are unable to arrange their schedules so as to fit the broadcast.<sup>19</sup>

#### C. Phonograph Records

The phonograph ranks high as an audio-visual aid. Records are more extensively used by schools today than any of the other visual aids. They are used extensively in the teaching of music and music appreciation; yet records can be successfully used in many other subjects.

Outstanding advantages of the phonograph records are:

1. They can be played whenever needed.
2. They may be played as many times as the situation demands.
3. They can be correlated with a great variety of subjects, which make them extremely versatile.
4. Records are now being made in unbreakable form.

Two limitations are:

1. Most records now owned by the schools are easily broken.
2. They require adequate space for storage.<sup>20</sup>

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18. McKown and Roberts, op. cit., pp. 220-231.

19. Ibid.

20. Ibid.

#### IV. Still Pictures

The still picture has been attractively defined by Emmert in these words:

The "still" photograph represents a cross section of a visual experience at the instant it occurs. It stops motion, shows line and color, indicates spacial relationships, and portrays people, objects, and scenes in which motion is not an essential feature.<sup>21</sup>

McKown and Roberts say:

The most frequently used type of "still" picture is the so-called "flats" or unprojected pictures--photographs, prints, paintings and projected pictures, such as slides and filmstrips.<sup>22</sup>

McKown and Roberts continue their discussion and list the following advantages of the flat picture:

1. Real and vivid
2. Easily available
3. Convenient to use
4. Inexpensive
5. Can be used repeatedly<sup>23</sup>

Although many teachers employ pictures extensively in their instruction, many err in their method of using them. Dent suggests the following limitations:

1. Too many pictures at one time.
2. Frequently too poor in quality.
3. Pictures often unsuited to the mental development of the child.
4. The flat picture frequently is not adapted to the specific situation.<sup>24</sup>

However, if teachers will carefully take the time to select,

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21. W. Emmert, "Standards for Selecting and Evaluating Still Pictures." Educational Screen, 317-318, 1943.

22. McKown and Roberts, op. cit., p. 104.

23. Ibid.

24. Dent, op. cit., p. 44.

mount, and file pictures into sets on particular units of work, their efforts will be repaid by the advantages gained.

#### A. Glass Slide

The slide may be used in many situations where portability of material and equipment, and low cost are important. Slides upon which the picture is printed are projected upon a screen and can be used effectively for group study and discussion.

McKown and Roberts list substantial advantages and limitations of the glass slide:

1. It presents material which is intended to clarify or supplement subject matter, or to make instruction on units of work more meaningful.
2. The standard size glass slide ( $3\frac{1}{2}$ " x 4") gives adequate illumination on the screen.
3. Slides may be left on the screen for any desired length of time.
4. Slides may be used quite successfully in a room not entirely dark.
5. Projectors requiring glass slides are easy to operate.
6. Color slides are relatively economical.

#### Limitations:

1. The slides are breakable.
2. The slides require adequate provision for filing and storing.
3. Slides are heavy and rentals may prove expensive.
4. The initial price of slides may be prohibitive.<sup>25</sup>

#### B. The Filmstrip

The filmstrip is a continuous 35mm film, containing from ten to one hundred pictures, having some continuity, and intended to be projected as a series of still pictures by means of the filmstrip projector.<sup>26</sup>

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25. McKown and Roberts, *op. cit.*, p. 125.

26. Dale, *op. cit.*, pp. 248, 536.

Filmstrips have many qualities which make them very desirable aids in teaching. Some of their advantages are:

1. The filmstrip machine is easy to operate. Projector requires a minimum of mechanical expertness since one can learn to operate this machine in ten minutes.
2. Filmstrips are light and require a minimum of space for storage.
3. Both projector and filmstrips are comparatively inexpensive.
4. Filmstrips are easily obtainable.
5. There is no loss or breakage.
6. Because of their availability, they are valuable in reviewing, and testing.<sup>27</sup>

Limitations are:

1. The filmstrip contains more pictures than are needed for the effective presentation of the subject.
2. The pictures are in series and cannot be as easily selected as can the glass slides.
3. It is impossible to secure the necessary brilliancy in illumination.<sup>28</sup>

#### C. Opaque Projector

The opaque projector is used to project on a screen any non-transparent flat picture, whether mounted or unmounted, or printed in a book or magazine. It can also project flat specimens, such as coins, stamps, leaves, typed materials, diagrams, drawings, etc.<sup>29</sup> This is essentially a group-teaching device; therefore, it may be used in the same way and for the same purpose as glass slides and filmstrips.

Its advantages are:

1. Ability to project almost anything on a screen for group study or discussion.
2. This projector is very economical because of the abundance and availability of materials which can be used in this instrument.
3. The projector of opaque materials has a wide application

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27. Dent, op. cit., pp. 88-90.

28. Ibid.

29. Dale, op. cit., p. 237.

at all levels of learning--it is especially helpful when used in developing reasoning.<sup>30</sup>

4. Colored pictures are reproduced accurately.
5. This projector can be used to improve handwriting, to correct letter forms, to make comparisons and to recognize increased skill.<sup>31</sup>

Its limitations are:

1. The chief objection is the limited illumination secured, since the brilliancy is limited by the percentage of light reflected, which is not as great as the percentage transmitted by the usual slide.
2. Another limitation is the need of complete darkness.
3. It lends its use to certain size pictures.
4. It presents a problem of caring for materials to be used.
5. The projector is somewhat cumbersome.<sup>32</sup>

#### V. Graphic Aids

Graphic materials are the least concrete of all the visual aids.

Dale says:

Graphic aids are instructional materials conveying meaning largely through relatively highly conventionalized symbols that are nearer to reality psychologically than verbal and relatively further from reality psychologically than pictures.<sup>33</sup>

These aids frequently present quantitative data--data which are usually difficult for the child to understand. However, a simple line, circle, bar graph, diagram, or chart enables the child to comprehend. Dent makes the following comments concerning the advantages in teaching with charts, graphs and diagrams:

- a. A peculiar product of the visual sense is the wealth of plane relationships which it effects. Charts, graphs, and diagrams take advantage of this peculiarity. In miniature these aids present,

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30. The National Education Association, Department of Elementary School Principals, The Principal and Audio-Visual Aids. Washington, D. C.: The Department, 1948. p. 59.

31. Dent, op. cit., p. 49.

32. Ibid., p. 44.

33. Dale, op. cit., p. 537.

in outline form, the trend, or the figure, and they depict on a flat surface the essential properties of the real idea.

b. A few charts summarizing the most important ideas and figures to be presented in a lecture or discussion can be made at small cost.

c. Graphs are of particular value in presenting statistical information.

d. The chart or diagram gives to the teacher and to the class something in common as a focal point of attention.

e. It may be carried easily from place to place.

f. It is permanent and stands hard usage.

Dent continues his discussion and lists the following limitations:

a. It is difficult to make the chart large enough to be seen by the entire group.

b. It is limited in the scope of material which can be presented.

c. Unless the students have been trained to read charts, graphs, and tables, the instructor will have to spend much time in explanation at the expense of content.<sup>34</sup>

#### A. Maps and Globes

Since maps and globes are considered necessities in teaching, most schools have been adequately equipped. The main advantages in the use of maps are:

1. Maps enable the pupils to comprehend more readily abstract concepts of size and direction.

2. Maps reduce the scale of area and distances so that what is otherwise intangible becomes meaningful.<sup>35</sup>

The globe is a map which is more accurate than a flat one because it actually represents the earth in shape, with the water and land masses shown in proportional sizes and positions. Further advantages of the globe are:

1. To teach the movements of the earth.

2. To teach changes in time.

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<sup>34</sup>. Dent, op. cit., p. 40.

<sup>35</sup>. McKnown and Roberts, op. cit., pp. 72-73.

3. To teach the meaning of longitude and latitude.<sup>36</sup>

Limitations of both maps and globes are:

1. The symbols and terms used on maps and globes are sometimes difficult.

2. Since wall maps, unless they are very large, can be seen and studied by only a few students at a time, they are more effective for small groups.<sup>37</sup>

#### Summary

I. Field Trip. The field trip combines observation with participation, influences attitude, and imparts information. It acquaints the child with the workaday world.

II. Realia. This group presents to the child a method of imitation and interpretation of reality. It changes, simplifies, and eliminates the unnecessary details. It is a means of emphasizing the essentials.

III. Sound Productions. The experiences created by these aids enable the child to visualize the invisible. Events are so effectively dramatized that children react to their meanings.

IV. Still Pictures. This group emphasizes impressions; and provides detailed analysis, enduring observation, and prolonged experiences. The sequence is not imposed, and the experience of seeing is less ordered and formalized.

V. Graphic Materials. Graphic aids offer a variety of experiences. The child no longer deals with an abstract representation.

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36. Ibid., p. 72.

37. Ibid., pp. 72-73.

A new language, that of visual symbols, is introduced.

#### Dramatization

Participation presents possible realities that cannot be reached in any other way.

#### Demonstrations

By means of observation the pupil is given a three-fold approach: telling, showing, and doing.

#### Use of Aids in High Point

##### Gathering Data

To secure the information upon which this report was based, the following methods of collecting the data were employed: The first step in the collection of information for this study was the preparation of a questionnaire,<sup>37</sup> which listed the subjects taught in the school. The second step was to send this questionnaire to each High Point Junior High School teacher, requesting the number of audio-visual aids used in the various subject fields during 1947-48. The third step was to make an inventory of the audio-visual aids owned by the High Point Junior High School. Of the forty-five questionnaires sent, forty were returned. It was found that teachers used more diagrams and charts than any other aid.<sup>38</sup> The questionnaire also revealed that aids requiring mechanical equipment were not as extensively used as others.<sup>39</sup> The study failed, however, to show how often the aids were

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<sup>37</sup>. A copy of the questionnaire will be found in the Appendix.

<sup>38</sup>. See Table I.

<sup>39</sup>. See Table II.

used, and to list the subjects taught in the various fields by the individual teachers.

A summary of aids used in tabular form appears in Table I and Table II.

TABLE I  
AUDIO-VISUAL AIDS USED BY FORTY TEACHERS  
OF THE HIGH POINT JUNIOR HIGH SCHOOL

Aids	Number Used	Aids	Number Used
Diagrams	40	Maps	15
Charts	36	Specimens	14
Demonstrations	33	Filmstrips	13
Motion Pictures	31	Globes	13
Objects	27	Phonograph	10
Dramatizations	25	Industrial Visits	6
Photographs	23	Civic Visits	6
Radio	17	Slides	6
Models	16	Opaque	4

Table I lists audio-visual aids used by the High Point Junior High School during 1947-48. The table shows the aids in the order of their use by each teacher, irrespective of the subject. The number of aids used during this period ranged from four to forty.

The following aids, irrespective of type, were the most widely used by teachers: diagrams, 40; charts, 36; demonstrations, 33; motion pictures, 31; objects, 27; dramatizations, 25. This group was followed by photographs, 23; radio, 17; models, 16; maps, 15; and specimens, 14. A further examination of the table revealed that those used the least were filmstrips, 13; globes, 13; phonograph, 10; visits and slides, 6; and opaque, 4.

TABLE II

## AUDIO-VISUAL AIDS USED BY TEACHERS TEACHING

A SUBJECT ONE OR MORE PERIODS\*

	No. of teachers teaching one or more periods	Visits		Stills				Graphic				Sound			Realia				
		Ind. Plant	Civic Institution	Photograph Flat	Slide	Opaque	Filmstrip	Diagram	Chart	Map	Globe	Sound Picture	Radio	Phonograph	Object	Specimen	Model	Dramatization	Demonstration
Art	1	0	0	1	1	0	0	1	1	0	0	0	0	0	1	0	1	1	1
Bible	1	0	0	1	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0
Guidance	2	1	0	0	0	0	1	1	1	0	0	1	1	0	1	0	0	1	1
Home Economics	2	0	0	2	0	0	2	2	2	0	0	1	0	1	1	1	2	0	2
Industrial Arts	2	1	0	1	0	0	1	2	2	1	0	3	0	0	2	0	2	0	2
Language Arts	30	0	0	7	0	1	1	10	4	1	0	5	4	1	2	0	3	13	8
Library Science	1	0	0	1	0	0	0	1	1	1	0	1	0	0	1	1	0	1	1
Mathematics	14	0	1	0	0	0	0	7	6	0	1	1	0	0	6	2	2	1	4
Music	2	1	2	1	0	0	1	2	3	1	0	3	5	4	3	1	1	1	3
Phys. Edu. and Health	4	0	0	1	0	0	0	3	3	0	0	3	0	1	1	0	0	1	2
Science	4	2	0	0	2	1	2	3	2	1	3	4	0	0	3	4	2	1	4
Soc. Stud.	14	1	3	8	3	2	5	7	10	1	9	9	7	3	6	5	3	5	5
		12		46				104				58			115				

\*The chart does not differentiate between grades nor teachers, since the majority of the teachers teach a number of subjects in one or more grades.

The responses to the questionnaire supplied information relative to the subjects in which the five types of audio-visual aids were used. Table II shows the use by subjects; that is, the number of audio-visual aids used in each of the listed subjects. The table reveals that 115 realia were used as compared to 104 graphic aids, while 58 sound productions were used as compared to 46 still pictures. Only twelve visits were made.

The table indicates that teachers are familiar with aids in the realia group; hence they use some of this type in their instruction. It appears, however, that these aids are not widely used. The table also shows that the second type of aids most extensively used were graphic aids. According to Table II, 104 were used. This large number may be owing to the fact that they are familiar, easy to obtain, and indispensable in all class instruction. Since all teachers find maps available, it is incredible that these were not more extensively used.

A further examination of Table II indicates that sound productions ranked third in use. The table shows that motion pictures were used by thirty-one of the teachers. It was found that the majority of the films used were those brought in by outside agencies, such as the school, the Dairy Council, or other community agencies. Table II also reveals that the radio was used by seventeen teachers. It is significant to note the number using this aid. The Junior High School building is equipped with a central broadcasting system, but it appears that this aid was not extensively used. From the number using the phonograph, it is apparent that records are used principally by the music and the physical education teachers.

According to Table II, forty-six teachers used still pictures.

Owing to the accessibility of flat pictures and their comparatively low cost, it would seem that too few teachers utilize this aid. Since the majority of the glass slides and filmstrips owned by the school are in the science and art fields, few teachers find them applicable to their specific work. The opaque projector was used by four teachers. This projector requires darkness, and few know of its possibilities. School excursions were used the least. It seems strange that so few teachers took advantage of the many available resources found in the local community.

To further determine the use of audio-visual aids in the High Point Junior High School, an inventory was made.

TABLE III

## AIDS OWNED BY SCHOOL

Materials		Mechanical Equipment	
Photographs	40	35mm filmstrip projector	1
Slides	42	Stereoptican	1
Filmstrips	16	Opaque projector	1
Diagrams	10	Sound system (radio and phonograph)	1
Charts	15	Portable public address system	1
Maps	122	Microphones	2
Globes	4	Phonographs	2
Sound pictures	0		
Records	50		
Objects	24		
Specimens	25		
Models	12		

As shown in Table III, forty photographs are on file. Of this number, twelve are of birds, twelve are of scientists, twelve are reproductions of famous paintings, and six are of musicians. The same table shows that forty-two slides are available: thirty belong to the science department, and twelve are in the art department. The table further reveals that sixteen filmstrips are owned. Of this number, six are in the language arts field, and the remaining ten are in the general science laboratory. The ten diagrams are on the following subjects: health, science, and industrial arts. The fifteen charts comprise one set of Smith and Davis General Science Charts (maps); one set of A. J. Nystrom Health and Anatomy Charts; others are miscellaneous. Records are owned and used principally by the music and physical education classes.

Other materials are found in the office and in the science department, but are available to any teacher.

#### Evaluation

From the data appearing in Table I and III, it appears that a conservative number of audio-visual aids are owned and used by the High Point Junior High School. This is a rather inadequate list. However, considering the fact that the school personnel did not improvise or make the most of the present possibilities with the aids now owned, it is evident that additional materials should not be purchased until the dust is removed from the present ones. It is apparent, however, that the use might have been greater if a larger number of the faculty members had been acquainted with the materials, and provided with adequate space and the necessary facilities. The difficulties

involved in locating and assembling the equipment encouraged the teachers to continue in the traditional procedure rather than to encourage the new method.

Table II shows that excursions are little used, probably because of large groups, the lack of sufficient time, or the fact that the teacher is unaware of the possibilities that the community offers.

## CHAPTER III

### PRINCIPLES OF MANAGEMENT

#### Introduction

If the importance of audio-visual aids in the teaching program is accepted, and if successful results are to be obtained, a program providing for effective management is necessary. Therefore, users of audio-visual aids are demanding effective management, which means the setting-up and carrying-out of a successful program.

McKown and Roberts state:

These aids will be used in every grade level and in practically every subject field. It is evident that some one person should be assigned the responsibility for coordinating the program.<sup>1</sup>

Therefore, the purpose of this particular phase of the study will suggest principles of good management.

#### I. Criteria for the Selection of the Coordinator.

Because the Coordinator of the audio-visual program comes into contact with practically every instructor in the system, and because he is responsible for the administrative success of the program, it becomes apparent that he must possess the following qualifications:

1. The Coordinator should have a broad knowledge of the fundamental principles of modern education. He should be familiar with subject matter and teaching techniques.

2. He should possess a thorough knowledge of the curriculum,

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1. Harry C. McKown and Alvin B. Roberts, Audio-visual Aids to Instruction. New York: McGraw-Hill, 1932. p. 325.

and it is equally desirable that he should have had teaching experience in both the high school and the elementary grades.

3. The Coordinator should be trained in the laboratory use of audio-visual aids, and he should be able to assist teachers in the selection and correct utilization of all classroom materials.

4. He should also be prepared to train teacher and student projectionists, to schedule equipment and material, and to conduct previews of new materials.

5. This person is theoretically a teacher with educational background, who has shown much interest in audio-visual aids and is able to secure cooperation, eliminate friction, and handle details.

## II. Regular Budget.

It is generally known among school administrators that any type of school work worth financing should be provided for in the budget.

Charles Hoban and others declare:

It has become the responsibility of school administrators to make such budget provisions as will provide at least the minimum visual-sensory materials necessary for meaningful instruction.<sup>2</sup>

Edgar Dale observes:

The audio-visual chairman must see that a budget is made available for both the upkeep of the old material and equipment and the purchase of the new.<sup>3</sup>

The audio-visual program should receive regular financial support corresponding in amount with its importance. Budgetary allowances for audio-visual materials should be in proper relation to those for

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2. Charles F. Hoban and others, Visualizing the Curriculum. New York: The Dryden Press, 1937. p. 271.

3. Edgar Dale, Audio-Visual Aids in Teaching. New York: The Dryden Press, 1946. p. 472.

other teaching materials .

Ellsworth Dent makes the following suggestions:

1. Annual budgetary allowances should provide for:
  - a. An adequate staff
  - b. Purchase of materials
  - c. Purchase of equipment
  - d. Maintenance of equipment and materials
  - e. Planned program of equipping existing buildings.  
One per cent of the annual per pupil cost suggested as a minimum operating figure for the audio-visual program. In working out the allowance for "e" above, the necessity for initial large appropriations should be recognized. Allowances may be expected to decrease as the program for equipping existing buildings is completed.
2. It is recommended that state departments of education give attention to devising a plan whereby local funds for audio-visual aids will be matched on a basis similar to that used for maps and textbooks in order that the expense of such departments may be equalized.<sup>4</sup>

### III. Materials Bureau

For a school to receive maximum results from the use of audio-visual aids as supplementary materials, it is necessary to establish a central bureau. The bureau has three main functions:

1. Selection and circulation of audio-visual teaching aids,
2. Training of teachers in the use of aids,
3. Securing materials that would otherwise be unobtainable.<sup>5</sup>

A well-functioning bureau carries into action the one objective to assist those engaged in teaching to make their work more effective through the thoughtful use of audio-visual aids.<sup>6</sup>

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4. Ellsworth C. Dent, The Audio-Visual Handbook. Chicago: Society for Visual Education, 1946. pp. 196-197.

5. "Iowa State Audio-Visual Laboratory," Educational Screen, 26:472, November, 1947.

6. Ibid., p. 473.

The bureau should include all types of projection equipment, audio-visual publications, and non-projected aids, such as maps, photographs, field trips, exhibits, and a variety of stimulating school-made aids.

Any school or school system which makes considerable use of various types of audio-visual aids will find it necessary to establish a centralized bureau. Since there are several possible and direct relations of the library to the audio-visual program, it is practical that the school library should serve as the central bureau.

This plan would not only provide for the collecting, the cataloging, and the storage of materials, but would provide teachers with both new and old materials. It would further promote continuous growth to meet the needs for new activities within the school. By this method, the continued circulation of obsolete material should be eliminated. Furthermore, it is important that the materials bureau be located in the school building. Such a location enables the teacher to make a wiser choice of aids and to secure them when needed.

#### IV. Projection Room.

The visual aids which require projection must have a dark room and electrical outlets. Should the cost prohibit the outfitting of every classroom, it would be wise to equip at least one room in which the materials would be projected. It is important to keep in mind that the audio-visual aids room should not be a "little theatre." In order to insure maximum use, a room which has been acoustically treated; provided with a special ventilating system; equipped with opaque shades, electrical outlets, and other necessary equipment is needed for the

projection of audio-visual materials. This room should be a part of the materials bureau. The room serves a three-fold purpose. It will serve for the regular previews of new material, for demonstration lessons, and, if desired, will serve as a studio in which motion pictures or recordings can be made.

#### V. In-service Training.

The problem of providing adequate training for employed teachers is one of the most troublesome issues in the development of the audio-visual instructional program. As Edgar Dale acknowledges, "Teachers should be taught how to operate the equipment, even though they do not regularly need to do so."<sup>7</sup>

Arnold Perry emphasizes the importance of training teachers in the use of audio-visual aids, in the following statements:

Widespread and effective use implies a teaching personnel trained in the use of audio-visual aids. Mechanical audio-visual aids for the most part are comparatively recent additions to the equipment available for use in teaching. Some of the equipment is complicated and requires training for effective use and proper care. The majority of our teachers have not had the opportunity to obtain training in this field. Consequently, if maximum benefits are to be derived, teachers must be given an opportunity to learn to use the equipment. This opportunity may be supplied through general instruction, by an expert provided by the administration, through demonstrations, extension or summer classes, or the employment of a supervising teacher of visual instruction to work with all teachers in perfecting techniques.<sup>8</sup>

The Elementary School Principals suggest that a workshop conducted by the Coordinator of the visual instructional program will offer the teachers an opportunity to learn new materials and to get

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7. Dale, *op. cit.*, p. 476.

8. H. Arnold Perry, "Implications of Increases in Audio-Visual Equipment," *North Carolina Education*, 6:127-128, December, 1939.

much practical experience.<sup>9</sup> Such a course is very practical; it usually enrolls a small and compact group of teachers who are acquainted with each other, who represent a few subject-matter fields, who are vitally interested, and who demand materials that are immediately useful. Obviously, instruction in such an informal setting is so close to each teacher's own job that it can be immensely profitable.

Other objectives are:

1. Helping the teacher to recognize and appreciate the place of visual aids in general,
2. Acquainting her with the wide variety of available materials and their sources,
3. Teaching her to operate all devices,
4. Instructing her in the proper techniques and procedures of developing an audio-visual lesson,
5. Acquainting her with ratings and the evaluating of plans, materials, and devices.

#### VI. Pupil Assistants.

Although every teacher has been trained to operate the projectors, it would be desirable to train a corps of pupil assistants. School programs of visual education are depending more and more on the assistance of students in the mechanical aspects of the program. Not only is it good experience for the pupils, but it also offers the teacher an opportunity to devote the necessary attention to classroom teaching technique.

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9. The National Education Association, Department of Elementary School Principals, Foundations for Teacher Education in Audio-Visual Instruction. Washington, D. C.: The Department, 1947. p. 42.

The pupils are interested in learning a useful skill, and they would render efficient service. In discussing the projection of pictures in the classroom by students, Francis W. Noel makes some pertinent statements:

Experience shows that students can be trained to operate picture machines effectively and with little or no damage. Even fifth and sixth grade boys and girls have proven their ability to handle projection satisfactorily. Considering the ruggedness of modern projection equipment, there is little likelihood of their damaging the machines. From an educational standpoint there is much in favor of student operation. The use of classroom motion pictures presents an ideal situation wherein opportunity is presented to develop cooperation and responsibility on the part of class members. Procuring the equipment and films (from within the building), darkening the room, setting up the machine, threading the film, adjusting controls, and projecting the pictures are duties which any class team will take pride in performing. The selection of the team personnel and the planning of the procedure is a logical and legitimate part of the classroom procedure under modern educational philosophy. Students look upon selection for motion picture operation as a high honor. The equipment is valuable and they know it; the work is important and they feel it. Successful operation requires an understanding of the equipment and the development of certain skills, the attainment of which requires time and work. From this experiment the students gain confidence in themselves and their ability to handle complicated mechanical equipment. Boys and girls take pride in this accomplishment and ought to be given the privilege of making use of it.<sup>10</sup>

A large number of students would freely volunteer their services. The selection of pupils, however, should be based upon the following: reliability, scholastic standing, and physical ability to transport the heavy equipment involved. In a discussion of the training of student operators, Worrell suggests the following additional requirements:

All pupils of the junior and senior high schools desiring to operate projectors must be fully instructed in their care and use. Instruction will be given to the junior high school pupils during their club period by the director of visual education. He does not

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10. Francis W. Noel, "Projecting Motion Pictures in the Classroom," American Council on Education, 4:47, December, 1940.

need to give personal instruction to every member of the group. After demonstrating a number of short reels, the students will be able to work with each other in developing the necessary projection skills. They must then serve a period of apprenticeship under the supervision of a qualified operator before they may operate the machine alone. The pupils who have qualified for this work in the junior high school will, upon graduation, act as operators in the senior high school.<sup>11</sup>

Some kind of an administrative check must be set up to permit only those who have had the proper training to operate the machines. To solve this problem, a license system is helpful. Pupils, even more than adults, take great pride and pleasure in possessing an "operator's card." Such a card means much to the average boy or girl. These cards should be issued for one semester only, renewals to be dependent upon passing a performance examination.

This plan of student assistants will help to solve a number of administrative details. Also it would encourage the teachers to accept audio-visual aids more enthusiastically, to use more projected aids, and to eliminate much damage. The efficiency of this system of student assistants provides the school with the lowest possible cost of operation and leaves the teacher free to carry out, to the fullest advantage, the subject content being considered.

#### Management in High Point

There is a very limited audio-visual program in the High Point Junior High School. The following may serve to explain the existing conditions to some extent.

1. There is no person available with sufficient time to assist other teachers in the locating, the evaluating, the ordering,

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<sup>11</sup> F. Marshall Worrell, "Establishing a Program of Supervised Audio-Visual Education," The Educational Screen, 16:43-45, 1937.

the previewing, and the demonstration of the needed aids.

2. The school budget as prepared by the Board of Education provides a very limited amount for visual aids, and the establishment of an audio-visual aids program would be utterly impossible. The amount provided is rarely sufficient to finance the 16mm sound film shown to the student body each Thursday.

3. For several years the building has been equipped with a 16mm sound projector, a stereoptican, an opaque projector, a filmstrip machine, and two screens. The school also owns a large number of catalogs containing free and rental materials. Yet, in spite of this equipment and much encouragement from the principal, the use of these aids is limited to a relatively small number of teachers. However, it should be noted that this equipment and the material are not readily available, nor are they centrally located.

4. Thus it has become apparent that there is little interest on the part of teachers. The lack of interest is somewhat justified by the following circumstance: There is no place readily available for the use of these aids. There are two rooms and the auditorium which could be darkened. One of these rooms is a general-science laboratory; the other a reading room adjoining the library. None of the three locations equipped with opaque shades could be considered as desirable rooms in which to teach a course in audio-visual aids, nor a favorable location for the previewing of films, nor for a demonstration class in visual aids.

5. A few teachers have become interested and have learned to operate the projectors. Yet the majority of the teachers are not only unfamiliar with aids owned by the school, but are also unable to use

the materials requiring projection.

6. There has been no set program which would provide for student assistants in the use of these aids.

Therefore, it is apparent that efficient procedure in management of an audio-visual program consists of providing a coordinator for securing the needed materials; for making the materials easily accessible to teachers; for providing for the care, repair, and storage of each item; and for making necessary provision for the mechanical operation of each aid.

## CHAPTER IV

### NEGLECTED AREAS

#### Introduction

This chapter on neglected areas is offered as a result of the findings in Table II on Page 27. The table reveals that the use of the small number of audio-visual aids in the High Point Junior High School varied widely. There was also a variation in the number of aids used in the different subjects listed in the curriculum. The table also clearly indicates that teachers are not using extensively all audio-visual resources which are available. Therefore, it is the purpose of this chapter to suggest some audio-visual aids which are available in the community and to point out other areas which have been neglected.

Table II shows that one field trip was made in each of the following subjects: guidance, industrial arts, and mathematics. Three trips were made in music, two were made in science, and four in social studies; therefore, it is concluded that the audio-visual resources in the local community have not been used. The literature stresses the importance of the field trip as a technique in the use of community resource education. Olsen reminds us that the child is daily "rubbing elbows" with a world full of sensory experiences, and it is our obligation to make these experiences meaningful.<sup>1</sup>

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1. Edward G. Olsen, "Acquainting Teachers with the Community," Utilization of Community Resources in the Social Studies. Ninth Year-book of the National Council of Social Studies. Massachusetts: The Council, 1938. pp. 36-50.

Educational Screen carried the following quotation:

Meaningful school experiences affect the child's out-of-school life and the life of the community. We teachers often talk of "educating the public" and forget that it is a fifty-fifty proposition--and what we need is a mutual education of the public and the school so that we might better understand the resources of each in this job of educating children and adults. We need a friendly understanding that the home, community, and school are mutually interested in our children--each can best contribute its part when it "fits in" with the other parts--so that each child's learning experiences will be in harmony. We can let our community reach into the school to enrich the curriculum . . . Every community can contribute to the art, music, literature, social science, and science experiences of the school . . . Safety and health habits, good manners and other social habits, a love of beauty, and an interest in wide reading will usually find some reflections in the home. Whether we wish it or not, the children interpret our schools to the public.<sup>2</sup>

Harap makes this significant comment:

It seems safe to predict that the emerging curriculum will be concerned with the improvement of living in the community. The pupil will have increasing contact with his natural and social environment. The whole community will serve as a laboratory for learning. The school will be a community of children within a larger social community, and its program will touch every phase of group experience--home life, government, industry, commerce, recreation, transportation, communication, and organized social life. The school of the future will indeed be a community school.<sup>3</sup>

Therefore, the first part of this chapter will present a brief index to some of the audio-visual resources found in the High Point community. The places listed have extended an invitation for teachers and students to visit when an appointment has been made.

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2. Helen Ellen Stenson, "Community Resources Pave the Way," Educational Screen, 22:47, February, 1943.

3. Henry Harap, "Scope of an Effective School Program for Utilizing Community Resources," The Eighteenth Yearbook. Washington, D. C.: The Department of Elementary School Principals, 1939. p. 459.

## High Point Audio-Visual Resources

Name of place: Pittsburgh Plate Glass and Paint Company

Nature of resource: Paints

Fields to which it is related: Science, Health and Physical Education,  
Art, Industrial Arts, Home Economics

Age limit for which profitable: 10 to 18

Office or agency to which application for visiting privileges should be made: Mr. William Robinette

Days open: 6

Time convenient: By appointment

Comment: The functional use of color is illustrated through the basic principle of color dynamics. This theory explains how the scientific use of color promotes efficiency in industry, offices, hospitals and schools. An explanation of the following would be helpful: diffusion, illumination, spectrum, effects which produce relaxation and cheerfulness, irritation and physical discomfort, and eye fatigue. A picture may be secured upon request.

## High Point Audio-Visual Resources

Name of place: High Point Glass and Decorative Company

Nature of resource: Art Stained Glass and Memorial Windows

Fields to which it is related: Art, Industrial Arts, Bible

Age limit for which profitable: 10 to 18

Office or agency to which application for visiting privileges should be made: Mr. A. W. Klemme

Days open: 6

Time convenient: By appointment

Comment: The student will see the different kinds and types of glass used, such as antique, obelisk, and foreign. Also emphasis will be placed upon cutting, cementing, waterproofing, blending, variety in color, symbols and emblems, glazing and packing for the area serviced. A visit to this plant carries with it a short lecture on interesting church stories.

## High Point Audio-Visual Resources

Name of place: North State Telephone Company

Nature of resource: Communication by dial

Fields to which it is related: Industrial Arts, Science, Guidance

Age limit for which profitable: 8 to 18

Office or agency to which application for visiting privileges should be made: Mr. S. Hunt

Days open: 5

Time convenient: By appointment

Comment: This trip includes guided tours through the main building, showing actual operations in process of handling long distance calls, complaints, and reports. The guided tour through the main plant includes the observation of the fall of the key as the number is dialed. Conference may be held regarding employment procedures, such as requirements, training, opportunities, hours, and salary. Frequently a movie accompanies each of these two sections. It is especially desirable to arrange a visit to the telephone office during National "Open House" Week, as many other devices in the operation of this system are then on display. Watch the local paper for the dates.

## High Point Audio-Visual Resources

Name of place: Water Plant

Nature of resource: Purification

Fields to which it is related: Mathematics, Social Studies, Science,  
Health and Physical Education, Guidance

Age limit for which profitable: 10 to 18

Office or agency to which application for visiting privileges should  
be made: Mr. Earl Kearns

Days open: 6

Time convenient: By appointment

Comment: A tour to this plant will give a realistic view of the precautions taken in the purification of water. Some knowledge of the following should be helpful: vats of filtration, sedimentation, suspension, coagulation, liquified chlorine gas, slaked lime, alum, and water softeners. Suggestions for thought: Amount of water consumed in gallons? Cost to municipality? Qualifications for a laboratory technician?

## High Point Audio-Visual Resources

Name of place: Fire Station No. 1

Nature of resource: Extinguishing of fires

Fields to which it is related: Language Arts, Social Studies, Mathematics, Science, Health and Physical Education

Age limit for which profitable: 6 to 18

Office or agency to which application for visiting privileges should be made: Chief Ingram's office

Days open: 5

Time convenient: By appointment

Comment: This tour will give the students a better appreciation of the services rendered by the fire department. Also the tour will illustrate methods by which a fire signal is received and relayed. The use of equipment on each truck will be named and explained. Other items of interest include the length of hose, the amount of water pumped per minute, the speed of travel, and the number of men required on each truck. A short lecture will be given on two subjects, "Safety in a Fire" and "How the Public May Prevent Accidents in Time of Fire."

## High Point Audio-Visual Resources

Name of place: Wachovia Bank and Trust Company

Nature of resource: Banking and Loans

Fields to which it is related: Mathematics, Social Studies, Industrial Arts, Guidance

Age limit for which profitable: 12 to 18

Office or agency to which application for visiting privileges should be made: Mr. Vernon Idol

Days open: 6

Time convenient: By appointment

Comment: The students will see behind the scenes in the bank and find out much about the various kinds of office workers, the clearing system, transit items, commercial department, real estate, inventory, and mortgages (from 30-60-90 days). Also the tour will include the consumer loan department. The types, kinds, and conditions of loans will be explained; for example, automobile, household appliance, home improvement, interest, and discount. Also the various machines used in I. N. B. will be demonstrated and the students will have the opportunity to learn of the training offered by the American Institute of Banking to those interested in this work. The qualifications for the beginning worker, and the advancement that is possible, will be discussed.

## High Point Audio-Visual Resources

Name of place: Hall Printing Company

Nature of resource: Commercial Printing

Field to which it is related: Art, Industrial Arts

Age limit for which profitable: 10 to 18

Office or agency to which application for visiting privileges should be made: Mr. W. B. Hall

Days open: 6

Time convenient: By appointment

Comment: Some knowledge necessary for the identification of machines and instruments and of such terms as the "designer," the "cutter," the "compositor," the "pressman," and the "assemblers" would be helpful. Spacing, lettering, and picturing will be illustrated.

## High Point Audio-Visual Resources

Name of place: High Point Airport

Nature of resource: Aviation (Eastern Airways)

Fields to which it is related: Mathematics, Science, Health and Physical Education, Industrial Arts, Social Studies

Age limit for which profitable: 7 to 18

Office or agency to which application for visiting privileges should be made: Mr. Brown (Eastern Air Lines)

Days open: 7

Time convenient: By appointment

Comment: Pupils will visit the depot, the offices, and the hangar at the airport. They will learn about the workers, such as mechanics, radio operators, dispatchers, ground crew, weather bureau operators, and the plane crew. Upon request, if the group is not over twelve in number, students may inspect the plane after it lands.

## High Point Audio-Visual Resources

Name of place: Colonial Foods Locker

Nature of resource: Preparation of Frozen Foods

Fields to which it is related: Science, Health and Physical Education,  
Home Economics, Social Studies

Age limit for which profitable: 12 to 18

Office or agency to which application for visiting privileges should  
be made: Mr. Proctor

Days open: 6

Time convenient: By appointment

Comment: During this tour, the students will see many kinds of foods prepared, packaged, frozen, and stored. A knowledge of the following terms would be helpful: chilled, aging room (beef), curing room (pork), temperature, box storage, fre-on gas, vapor-o-sealed wrapper, and cellophane bags.

## High Point Audio-Visual Resources

Name of place: High Point Post Office

Nature of resource: Handling of all mail

Fields to which it is related: Language Arts, Mathematics, Social  
Studies, Guidance

Age limit for which profitable: 8 to 18

Office or agency to which application for visiting privileges should  
be made: Superintendent of Mails

Days open: 5

Time convenient: By appointment

Comment: This tour will enable students to know how many different activities, both connected with mail and not connected with mail, are carried on in the building. In the post office proper, the tour will cover the outgoing and incoming mails, the street distribution of mail by carriers, safety devices, and stamp dispersal.

## High Point Audio-Visual Resources

Name of place: Tomlinson's of High Point

Nature of resource: Making and Selling of Furniture

Fields to which it is related: Home Economics, Art, Industrial Arts

Age limit for which profitable: 12 to 18

Office or agency to which application for visiting privileges should be made: Mr. A. W. Dunbar

Days open: 5

Time convenient: By appointment

Comment: A tour through this plant will show the entire process of making a piece of furniture, also the number of people needed to carry on the office work.

Students in art and home economics would be especially interested in seasonal displays put on by this company. Among these displays will be the arranging of furniture, rugs, and draperies; hanging of mirrors and pictures; displaying of the different periods of furniture; and combining of furniture of different periods.

## High Point Audio-Visual Resources

Name of place: Catholic Church

Nature of resource: Religion

Field to which it is related: Bible

Age limit for which profitable: 10 to 18

Office or agency to which application for visiting privileges should be made: Father McMillan

Days open: 5

Time convenient: By appointment

Comment: Some knowledge of the following would be helpful: The number of candles used for high mass, and the number used for low. Number of robes worn by priest, and the significance of each. Signs of cross, holy water receptacle, statue of Mother Mary, kinds of music used and when, form of service, days of special worship, and their significance. Also note the significance determined by the name the church carries.

## High Point Audio-Visual Resources

Name of place: Pittsburgh Plate Glass and Mirror Company

Nature of resource: Glass and Mirrors

Fields to which it is related: Science, Art, Industrial Arts

Age limit for which profitable: 10 to 18

Office or agency to which application for visiting privileges should be made: Mr. F. H. Barrett

Days open: 6

Time convenient: By appointment

Comment: This excursion will show how glass and mirrors are decorated, polished, and finished. It would be helpful if the student possessed some general knowledge of how glass is made and the different kinds of glass. Also some knowledge of how mirrors are made. Vocabulary words such as "plane" or "spherical," "principal focus," "concave," "convex," and "mercury" will be explained. Slides are available upon request; also a very interesting, illustrative lecture.

## High Point Audio-Visual Resources

Name of place: Melrose Hosiery Mill

Nature of resource: Manufacturing of Hosiery

Fields to which it is related: Language Arts, Art, Music, Industrial Arts

Age limit for which profitable: 12 to 18

Office or agency to which application for visiting privileges should be made: Mr. Joe Boyd

Days open: 5

Time convenient: By appointment only

Comment: The tour will take the following order:

1. Fixer--repairs broken machines
2. Knitter--examines sock on the machine
3. Looper--sews toe of sock
4. Inspector--inspects for hole in the sock, also inspects dyed socks
5. Dyerroom--mixing of dyes, and dyeing
6. Boarder--irons socks
7. Shipping Clerk--labels, assorts, matches, packs, etc.

## High Point Audio-Visual Resources

Name of place: Thomas Body and Car Works

Nature of resource: Making of Bodies for the North Carolina School Buses

Field to which it is related: Industrial Arts

Age limit for which profitable: 12 to 18

Office or agency to which application for visiting privileges should be made: Mr. C. C. Schultheiss

Days open: 5

Time convenient: By appointment

Comment: In a tour of this plant, students will see the complete process employed in the making and assembling of bodies for the North Carolina school buses. There are a large number of machines used. Some of these are:

- Arch press or stretcher (this stretches or shrinks metal)
- Circle shears (designs)
- Beating or flagging machine
- Spot welders
- Hammer machine
- Pels punch press
- Abrasive saw
- Nibble press
- Stanchion

Other points of interest: fiber glass, plant trucks, amount of welding required, painting equipment, guard rail (this is required by law only in North Carolina).

Students will be especially interested in a machine built by the Thomas Body Company for bending rafters. This machine is operated by hand and requires a tremendous amount of man power.

## High Point Audio-Visual Resources

Name of place: Abattoir

Nature of resource: Preparation of Meat

Fields to which it is related: Science, Health and Physical Education,  
Bible, Social Studies

Age limit for which profitable: 10 to 18

Office or agency to which application for visiting privileges should  
be made: Mr. Perkins, City Hall

Days open: 6

Time convenient: By appointment

Comment: A guided tour through this plant will include the following:

1. Slaughter room (animal, age, characteristics, kinds, weight)
2. Preparation (method, sanitation, anatomy)
3. Shroud room (method of dress, purpose, hanging, temperature)
4. Inspection (requirements--food law, etc.)
5. Dealers (Who are purchasers? How delivered?)

If an appointment could be arranged on the day the Jewish Rabbi prepares meat for his people, the following would be seen: Rabbi slaughtering beef cattle according to religious beliefs--he uses his own equipment, such as knife, saw, etc., and selects only a kosher animal with the split cud.

## High Point Audio-Visual Resources

Name of place: Guilford Optical Company

Nature of resource: Grinding Lenses

Fields to which it is related: Health and Physical Education, Art,  
Industrial Arts, Social Studies

Age limit for which profitable: 14 to 18

Office or agency to which application for visiting privileges should  
be made: E. High Street

Days open: 6

Time convenient: By appointment

Comment: Boys or girls who like to do exact work with fine tools will have an opportunity to see what the men do who grind lenses according to the doctors' prescriptions, fit them into frames, and adjust them for the customer. The work of the optician in all its phases will be thoroughly explained.

## High Point Audio-Visual Resources

Name of place: City Library

Nature of resource: Magazines, Books, References

Fields to which it is related: Language Arts, Social Studies

Office or agency to which application for visiting privileges should be made: Miss Gurley

Days open: 6

Time convenient: By appointment

Comment: Many children are not familiar with the local City Library. A visit to the Library would include a knowledge of the following: location and how to use the card catalog index, Readers' Guide, reference room, high school reading section, and sections displaying special holidays. Also displays of the new and latest books.

## High Point Audio-Visual Resources

Name of place: Museum at Springfield Church

Nature of resource: Museum of Old Domestic Art

Fields to which it is related: Language Arts, Social Studies, Art

Age limit for which profitable: 6 to 18

Office or agency to which application for visiting privileges should be made: Mrs. C. C. Haworth

Days open:

Time convenient: By appointment

Comment: The following are found in the Museum: articles used for the house, for farming, for cooking, for lamps, for costumes, and for bonnets. Other items include arrowhead collection, the old Mile Post (used in High Point on the plank road), hand loom and cloth, the horn (which was blown at a distance of two miles before reaching the inn), the cowhide trunks, the shoemaker's bench, the copper boots, and the globes used in the first schools in the state.

## High Point Audio-Visual Resources

Name of place: Lindale Dairy

Nature of resource: Milk

Fields to which it is related: Science, Health and Physical Education,  
Guidance, Social Studies

Age limit for which profitable: 6 to 18

Office or agency to which application for visiting privileges should  
be made: Mr. Roland Horney

Days open: 6

Time convenient: By appointment

Comment: While the process of pasteurization, the bottling of milk, and the handling of other dairy products will be observed, pupils will have an opportunity to learn about the opportunities for employment, especially those of the route driver and route salesman. High Point has many young men, assisted by school boys, employed in this capacity.

## High Point Audio-Visual Resources

Name of place: The Enterprise

Nature of resource: Newspaper

Fields to which it is related: Language Arts, Social Studies, Science,  
Art, Music, Industrial Arts

Age limit for which profitable: 10 to 18

Office or agency to which application for visiting privileges should  
be made: General Office

Days open: 6

Time convenient: By appointment

Comment: This excursion will give a realistic view of the actual work and the workers concerned with putting out a paper. Students will see all people who are engaged in this business, from the men who operate the large presses, to the city editor. Special points of interest: the file, the telegraph division, the headline setter, the proof table, the vat, the molder, the comic sheets, and the various departments.

## High Point Audio-Visual Resources

Name of place: Merita Baking Company

Nature of resource: Baking and Making of Various Breads, Cakes, etc.

Fields to which it is related: Science, Health, Industrial Arts, Home  
Economics, Social Studies

Age limit for which profitable: 10 to 16

Office or agency to which application for visiting privileges should  
be made: General Office

Days open: 5

Time convenient: By appointment

Comment: Students will observe how bread and other bakery products are made and will see the persons who work in the various departments. They will learn about the work of the truck drivers, and will see the breads being made, cut, wrapped, and sealed. The following words will be used: dough, temperature, humidity, batter, sponge method, and fermentation. Other items of interest: machines used in mixing, remixing, cutting and sealing, oven, and methods of cutting cakes into shapes.

## High Point Audio-Visual Resources

Name of place: Martine's Interior Decorators

Nature of resource: Designs in Fabric

Fields to which it is related: Art, Home Economics, Social Studies

Age limit for which profitable: 10 to 18

Office or agency to which application for visiting privileges should be made: Mrs. Martine Barker

Days open: 6

Time convenient: By appointment

Comment: This visit will include the psychological effect of color, and the identification of material which carries designs of unity (stripes), all over (floral), and handblocked linens.

## High Point Audio-Visual Resources

Name of place: Courts

Nature of resource: Trial of Cases

Fields to which it is related: Language Arts, Social Studies

Age limit for which profitable: 10 to 18

Office or agency to which application for visiting privileges should be made: Clerk of Court

Days open: 5

Time convenient: By appointment

Comment: The student will need to be prepared in the following: Court procedure. Personnel of the court: the judge, the jury, the prosecutor, the solicitor, the various lawyers, the witnesses, and the defendant.

## High Point Audio-Visual Resources

Name of place: High Point-Greensboro Weather Bureau

Nature of resource: Various Aspects of Weather

Fields to which it is related: Mathematics, Social Studies, Science,  
Guidance

Age limit for which profitable: 13 to 18

Office or agency to which application for visiting privileges should  
be made: Mr. Dunlap

Days open: 5

Time convenient: By appointment

Comment: A guided tour through the weather bureau gives the student a clearer picture of the activities necessary in making weather predictions. This tour has four divisions. First, an out-of-door operation, which includes the sending up of a balloon carrying an observation radio. Other recording instruments are observed and discussed. Second, the teletype and broadcasting room. In this department, weather forecasts are received from every part of the country. The pilot may radio in and receive necessary weather information. Third, recording room. All the instruments which were observed on the out-of-door tour record automatically their findings in this department. Fourth, weather-map room. In this department all data is assembled and the daily weather map is made. Students are given an opportunity to secure information regarding employment, such as requirements for training, hours, and salaries paid to meteorologists.

## High Point Audio-Visual Resources

Name of place: Family Service Bureau

Nature of resource: Working with Family Problems

Fields to which it is related: Language Arts and Social Science

Age limit for which profitable: 14 to 18

Office or agency to which application for visiting privileges should be made: Miss Frances Roberts

Days open: 5

Time convenient: By appointment

Comment: A tour to this office is restricted to ten students. The visit will take the form of a discussion, which will cover services rendered by this department, as: marriage problems; assistance to unmarried mothers; children who do not learn in school; predelinquent problems; medical, mental, and physical problems; and conditions under which nursing is provided. This department, principally by appointment and investigation, also serves as a Travelers' Aid.

## High Point Audio-Visual Resources

Name of place: Keelam's Foundry

Nature of resource: Making and Assembling of Iron

Field to which it is related: Industrial Arts

Age limit for which profitable: 14 to 18

Office or agency to which application for visiting privileges should be made: Mr. T. Keelam

Days open: 6

Time convenient: By appointment

Comment: This is a foundry where boys can see steel castings being made. Processes to be observed will include molding, core-making, melting, heat-treating, and research work in steel-casting.

Note: This visit will attract boys only. There are no restrictions on a visit to this plant. It is advisable to call in the morning and to be prepared to visit in the afternoon. The molding begins at 1:30, and the pouring takes place from 2:30 to 3:30.

## High Point Audio-Visual Resources

Name of place: Health Department

Nature of resource: Public Health

Fields to which it is related: Science, Health, Home Economics, Social  
Science

Age limit for which profitable: 10 to 18

Office or agency to which application for visiting privileges should  
be made: Health Officer

Days open: 5

Time convenient: By appointment

Comment: On this tour the students will see the preparation and the counting of bacteria found as a result of tests made from samples of milk brought into the local dairies. Also they will see swab test made on all multi-uses of utensils used in restaurants and other public eating and drinking establishments. Other tests made are blood count, urinary, stool culture, dark fills on syphilis and gonorrhoea.

Clinics are held on the following cases: crippled children, babies, chest X-ray, examinations for food handlers, and venereal diseases.

## High Point Audio-Visual Resources

Name of place: Fli-Back Company

Nature of resource: Preparation of Crude Rubber for Making of Rubber Balls and the Manufacturing of Toys

Fields to which it is related: Language Arts, Industrial Arts

Age limit for which profitable: 6 to 18

Office or agency to which application for visiting privileges should be made: Mr. J. E. Gibson

Days open: 5

Time convenient: By appointment

Comment: This plant is divided into two parts. The following will be seen on a tour: First, the preparation of crude rubber. This process includes the melting, dyeing, weighing, and baking of the rubber ball. The woodshop department contains sheets of plywood, and the drawing and cutting of designs are done here. One hundred and forty paddles may be cut at one time.

The second division is the Socket-it Company. In this division, spinning tops and yo-yos are made; the assembling, threading, and winding are also done here.

There is no race discrimination in this factory. The work is very fast and easy.

## High Point Audio-Visual Resources

Name of place: Highland Cotton Mill

Nature of resource: Carded, Combed and Mercerized Yarn

Fields to which it is related: Language Arts, Home Economics, Industrial Arts, and Social Studies

Age limit for which profitable: 14 to 18

Office or agency to which application for visiting privileges should be made: Mr. Glenn Ward

Days open: 5

Time convenient: Appointment Only

Comment: A tour through this plant will give the students an opportunity to see the cotton as it is received and each process through which it passes until it is a finished product and is ready to be cased. It will be helpful to know the following terms: carding, roving and twisting, spinning frames, warp, combed, and conditioning.

Preparation Process:

picker  
carding  
drawing  
roving

Finishing:

spinning  
spooling  
twisting  
warp machine  
combed  
conditioning  
cased

## High Point Audio-Visual Resources

Name of place: City Hall

Nature of resource: City Administration

Fields to which it is related: Language Arts, Social Science, Mathematics, Health

Age limit for which profitable: 8 to 18

Office or agency to which application for visiting privileges should be made: City Desk

Days open: 5

Time convenient: By appointment

Comment: A trip to the City Hall will include a visit to the City Manager's office, the Clerk's office, the Treasurer's office, and the Council Chamber. The following departments will be visited: Water and Light, Public Works, Engineering, Real Estate, Police, Accounting, Juvenile Court, Recreational, and the Jail.

## High Point Audio-Visual Resources

Name of place: Radio Station

Nature of resource: Broadcasting

Fields to which it is related: Industrial Arts, Science

Age limit for which profitable: 12 to 18

Office or agency to which application for visiting privileges should be made: Mr. Lambert

Days open: 6

Time convenient: By appointment

Comment: On a tour through this station the student will observe four divisions. First is the Observation Room, Studio A (alive), Studio B (dead), A.M. on the left and F.M. on the right. There is also a large switchboard containing the switches which connect with all buildings throughout the city from which broadcasts are made (for example, the Sheraton Hotel and the First Baptist Church); and the network switch. Other divisions include the Newsroom, the Record Room, and the Tower.

### Other Neglected Areas

#### I. Still Pictures

As shown in Table II, Page 27, the majority of the Junior High School teachers know very little about some of the audio-visual aids examined in this survey. According to the results obtained, a large number of the teachers are quite unfamiliar with the use of still pictures, which include such aids as opaque projectors, glass slides, and filmstrips. Many of the teachers apparently do not know that the Junior High School has an opaque projector, how easy it is to operate, and its many possibilities; that it has a filmstrip machine and sixteen films, a lantern and forty-two slides. All of this material could be used by any teacher. These aids should be in continuous demand and use. However, according to the results of the survey, it can be seen that two stills were used in art, one was used in Bible, one was used in guidance, and one was used in health and physical education.

#### II. Graphic Aids

Table II also indicates that graphic aids were not extensively used in the school. According to the results obtained, three of these aids were used in art, three were used in Bible, two were used in guidance, and three were used in library science. The school owns a total of 122 maps, and these maps are available to all teachers. From the data found in the Table, maps and globes are not widely used in class instruction. Because of the importance and usefulness of this type of aid, the school at the earliest possible date should make provisions to supply each classroom with the necessary number of maps and at least one globe.

### III. Sound Productions

It is further seen in Table II that sound productions were not extensively used. The school provided a weekly educational sound picture for the student body. It appears that teachers did not know that upon request a film would be secured and shown to any class. The Board of Education owns a number of motion pictures which are closely related to the various subjects in the curriculum, and these films are available upon request. Each room in the building is equipped with radio reception; there are three phonographs available. In this group, there were two aids used in guidance, two in home economics, and none in art and Bible.

### IV. Realias

The data in Table II further reveals that realias were not widely used. This is shown by the following record: four in health and physical education, four in library science, four in art, three in guidance, and none in Bible. These aids are the most familiar of all the audio-visual aids and probably could be secured with little effort. Realias are invaluable as a teaching aid; and, because of their importance, teachers should be provided with an adequate number.

## CHAPTER V

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

#### Summary

This study is concerned with the formulation of criteria necessary to develop an audio-visual educational program adapted to the specific needs of the seventh, eighth, and ninth grades of the High Point Junior High School. The problems were:

I. Can audio-visual aids improve instruction?

II. What is the minimum list of such aids deemed adequate, and how adequate are the materials and procedures of the High Point Junior High School?

III. What principles of management are essential to insure maximum effective use?

IV. What are the neglected areas?

A survey of the authoritative literature was made. The first part of the survey dealt with the values of audio-visual aids, when integrated with class instruction, as to giving insight, understanding, and ability to remember at different grade levels.

The second part was criteria for selecting and evaluating the advantages and limitations of the audio-visual aids needed in the seventh, eighth, and ninth grades. There was a brief survey to determine how adequate the material and procedures were in the High Point Junior High School.

The third part was to determine what efficient procedures were

considered adequate in the administration of a successful audio-visual aids program.

The fourth part of the study was made in order to show the areas in which audio-visual aids have been neglected. The first part of this section consisted of a survey of the outstanding educational community resources, and the second part pointed out other neglected areas and made suggestions for their use.

### Conclusions

As a result of this study, the following conclusions may be drawn with some degree of confidence:

1. There is a limited amount of suitable audio-visual equipment and material for use in the seventh, eighth, and ninth grades of the High Point Junior High School.
2. The personnel has not improvised nor made the most of the present possibilities offered by the audio-visual aids owned by the school.
3. From a study of Table I and Table II in Chapter II, it is obvious that the number of audio-visual aids used are far below the number that could be utilized with profit.
4. The survey shows that a number of teachers are interested in these aids; however, it is seen that teachers are unfamiliar with the aids and materials owned, the projection equipment, the location of the materials, and the accessibility of the aids.
5. There is no Coordinator to demonstrate, to repair, and to assist in the selection and evaluation of visual materials.

### Recommendations

If the High Point Junior High School accepts audio-visual aids in its teaching program, and if attempts are made to get maximum benefits from their use, certain problems arise. Therefore, the recommendations growing out of this study are:

1. That the administrators of the school consider audio-visual aids as a definite part of the curriculum, and that sufficient provisions be made in the budget for the use of these aids.
2. That the audio-visual aids be correlated with other teaching materials.
3. That additional audio-visual materials be provided for the seventh, eighth, and ninth grades.
4. That teachers be made more conscious of the effectiveness of audio-visual aids by demonstration lessons, bulletins, and the pointing-out of the possibilities of the available materials.
5. That a workshop be established to train teachers in the operation of the projectors.
6. That a central bureau be established in connection with the library for the purpose of collecting, filing, storing, and preparing all materials for the accessibility of the teachers.
7. That a suitable room be properly equipped so that certain aids such as filmstrips, glass slides, motion pictures, and opaque materials may be satisfactorily projected.
8. That a sufficient number of students be trained to operate the equipment when needed.

Finally, to summarize the recommendations in this study, it is seen that far too few aids were used in the junior high schools

during the year 1947-1948, and that many of the reasons for the neglected use of these aids would be corrected by:

1. The providing of a coordinator with sufficient time to carry on a successful program.
2. The selecting and purchasing of a larger variety of materials.
3. The distributing of these aids from a materials library which will make the aids readily available and provide for the filing, storing, and protection of the mechanical equipment.
4. The providing of a room suitable for using projected aids.
5. The training of teachers in the value, need, and use of audio-visual aids.
6. The training of student operators to assist in carrying on a successful program.

BIBLIOGRAPHY

## BIBLIOGRAPHY

- "Army and Navy Set Fast Pace for Nation's Schools." Newsweek, XXIII (June 12, 1944), 101-105.
- Brooker, F. E. "Neglected Areas of Curriculum Implementation." Educational Record, XX (April, 1939), 241-255.
- Brown, Emmett H. and Bird, Joy. Motion Pictures and Lantern Slides for Elementary Visual Education. New York: Teachers College, 1931. 99 pp.
- Dale, Edgar. Audio-Visual Methods in Teaching. New York: Dryden Press, 1946. 546 pp.
- Dent, Ellsworth C. Audio-Visual Handbook. Chicago: Society for Visual Education, 1946. 227 pp.
- Dorris, A. V. Visual Instruction in the Public Schools. New York: Ginn and Company, 1928. 481 pp.
- Emmert, W. "Standards for Selecting and Evaluating Still Pictures." Educational Screen, XVI, 317.
- Fern, George H. and Robbins, Eldon. Teaching with Films. Milwaukee: Bruce Publishing Company, 1946. 226 pp.
- Harap, Henry. "Scope of an Effective School Program for Utilizing Community Resources." Department of Elementary School Principals. Eighteenth Yearbook. July, 1939.
- Hoban, Charles S. and others. Visualizing the Curriculum. New York: Dryden Press, 1944. 299 pp.
- "Iowa State Audio-Visual Laboratory." Educational Screen, XXVI (November, 1947), 472.
- Koon, Cline M. School Use of Visual Aids. United States Office of Education Bulletin, No. 4. Washington, D. C.: Government Printing Office, 1938. 68 pp.
- Laine, Elizabeth. Motion Pictures and Radio. New York: McGraw-Hill Book Company, 1938. 165 pp.
- McKown, Harry C. and Roberts, Alvin B. Audio-Visual Aids to Instruction. New York: McGraw-Hill Book Company, 1940. 385 pp.

#### BIBLIOGRAPHY

- Noel, Elizabeth Goudy and Leonard, J. Paul. "Foundation for Teacher Education in Audio-Visual Instruction." American Council on Educational Studies, XI (June, 1947), 60.
- Noel, Francis W. "Projecting Motion Pictures in the Classroom." American Council on Education, IV (December, 1940), 53.
- North Carolina State Superintendent of Public Instruction. Handbook for Elementary and Secondary Schools. Publication No. 254. Raleigh, North Carolina: The State Superintendent, 1947. 217 pp.
- Perry, H. Arnold. "Implications of Increases in Audio-Visual Equipment." North Carolina, VI (December, 1939), 127-128.
- The National Education Association, Department of Elementary Principals. The Principal and Audio-Visual Education. Washington, D. C.: The Department, 1948. 94 pp.
- The National Education Association, Department of Elementary Principals. Visual Education. Washington, D. C.: The Department, 1938. 94 pp.
- Worrell, F. Marshall. "Establishing a Program of Supervised Audio-Visual Education." Educational Screen, XVI (1937), 43-45.

APPENDIX

Survey of Audio-Visual Aids in Junior High School

Name \_\_\_\_\_ Subject taught \_\_\_\_\_ Homeroom No. \_\_\_\_\_

Which of the aids listed did you use in connection with the following subjects? (Please check)

	Visits	Still Pictures	Graphic Aids	Sound	Realia
	Industrial Plants	Photographs, flats, printed, projected	Diagrams	Sound Pictures	Objects
	Civic Institutions				
		Slides	Film strips	Radio	Phonograph
		Opaque			Specimen
					Models
			Charts		Dramatization
			Maps		Demonstration
			Globes		
<u>Art</u>					
<u>Bible</u>					
<u>Guidance</u>					
<u>Home Econ.</u>					
<u>Ind. Arts</u>					
<u>Lang. Arts</u>					
<u>Library Sci.</u>					
<u>Mathematics</u>					
<u>Music</u>					
<u>Phys. Edu. &amp; Health</u>					
<u>Science</u>					
<u>Social Sci.</u>					