THE DEVELOPMENT OF AN INSTRUCTIONAL MATERIALS CENTER
FOR THE WEST DES MOINES COMMUNITY SCHOOLS

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by
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Approved by Committee:

[Signatures]

Dean of the Graduate Division

216325
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CHAPTER I

INTRODUCTION

A vast array of instructional materials and audiovisual equipment has been developed within the past few years to aid in the teaching of children. The need for these instructional tools has become more readily apparent in these days of compulsory education laws, chronological promotion, and an ever widening range of pupil ability and interest. It seems reasonable to think that teachers would take every opportunity to utilize these instructional aids, using them whenever possible as an integral part of their teaching process. De Bernardis said, "Effective teaching requires not only a good teacher but also the proper facilities and a rich supply of equipment and materials to do the job."1 Kinney and Dresden also stated:

It is a military axiom that materials not available at the scene of action are to be considered nonexistent. Basically, this idea is equally sound in education. Stated positively, it implies that efficiency in planning and handling materials--by bringing what is needed into action when it is needed--increases the value of those materials amazingly. With fluid resources like current materials this multiplication of value can be manifold.2

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I. THE PROBLEM

Statement of the problem. The purpose of this study was to give an overview of the educational materials and the audio-visual equipment available to the various schools in the West Des Moines School District, to determine how the materials and equipment have been provided and currently used in the schools, to determine the additional materials and equipment needed for an instructional materials center, and to offer a plan for developing an instructional materials center.

Importance of the study. One of the more recent developments in audio-visual education has been the establishment of curriculum materials centers for the school districts large enough to finance and support such a center. With new methods of teaching being initiated yearly, these procedures call for a cross-media approach to learning. The instructional materials center serves as a depository for all types of teaching materials, resources, and equipment, and also serves as a work area for teachers. The pooling of resources in one area reduces cost and increases efficiency.\(^1\) A school district must not only provide instructional

\(^1\)Irene Sigler, "Instructional Materials Center in Portland, Oregon," *ALA Bulletin*, LV (February, 1961), 133.
materials for its individual schools, but must see that they are utilized to their maximum capacity.

II. PURPOSE OF THE STUDY

This study has attempted to provide information concerning the present kinds and amounts of audio-visual materials and equipment in the West Des Moines School District, information collected from faculty and administrators concerning what materials are used and how often, and a plan to develop an instructional materials center for the school district.

III. PROCEDURE

Literature related to the use of instructional and audio-visual materials was reviewed to gain insight into the past development of curriculum materials centers and into the materials and equipment needed to maintain a center. The literature was drawn from books, pamphlets, magazines, and unpublished theses.

A survey was made of the classroom teachers in the West Des Moines Community School District by the use of a questionnaire. A preliminary questionnaire was given to twelve teachers in the school system, the teachers being chosen to represent each of the separate schools in the district.
The preliminary questionnaire was designed to obtain information concerning the audio-visual equipment and materials used by the classroom teacher, the amount of training the teachers had received in the use of audio-visual equipment, and their opinions as to the need of a central depository of audio-visual materials and equipment for the school district.

After examining the results of the preliminary questionnaire, and referring to literature concerning the use of audio-visual materials, a revised questionnaire was developed. The revised questionnaire was sent to the remaining one hundred sixty-three classroom teachers. A letter of introduction explaining the reason for obtaining the information was enclosed with each questionnaire. The questionnaires were returned to the building principal, who in turn returned them to the writer.

The one hundred sixty-three questionnaires were given out on May 10, 1965, and one hundred forty-five were returned by May 14, 1965. A telephone call was made to those who had not yet returned the questionnaire. Four additional questionnaires were returned as a result of the telephone calls.

The six school principals of the district were also surveyed by the use of a questionnaire. A preliminary questionnaire was prepared and approved. For validation, a copy of the questionnaire was given to the senior high
school principal. The preliminary questionnaire was designed to obtain information concerning the amount of audio-visual equipment located in each building, how much money was used for audio-visual materials and equipment in the past three years, and their opinion as to the need of a central depository for audio-visual materials and equipment in the school district. The results of the preliminary questionnaire were examined and found to be adequate. Thus, no revision was made before the questionnaire was given to the remaining principals in the system.

A letter of introduction explaining the reason for obtaining the information, along with a stamped, self-addressed envelope in which to return the completed questionnaire, was enclosed with each questionnaire. The letter, questionnaire, and self-addressed, stamped envelope were given to the principals through the administration mail boxes on May 24, 1965. All questionnaires were returned from the principals by May 28, 1965.

A summary of the information obtained from the questionnaires is presented in tabular and narrative form in Chapter III. An analysis of the information received is given in Chapter IV. The conclusions reached, and the recommendations made to the West Des Moines Board of Directors, are presented in Chapter V.
IV. LIMITATIONS OF THE STUDY

There have been many plans followed for the development of instructional materials centers, yet each has to be unique for the individual school system. This study will be concerned with a plan that can be adapted to fit the needs, finances, and growth of the West Des Moines Community Schools.

V. DEFINITION OF TERMS

Instructional materials center. For the purpose of this study, "instructional materials center" is interpreted as a central depository of teaching tools, materials, and ideas that will serve the personnel of a school district.

Instructional materials. The term "instructional materials" is used in this study to include all materials, equipment, and teaching aids needed for the teaching of children. Audio-visual equipment is included in the term.

Co-ordinator. The term "co-ordinator" is used to designate the person in a school system who is responsible for the curriculum program.
CHAPTER II

A REVIEW OF RELATED LITERATURE

One of the more recent developments in audio-visual education has been the establishment of instructional materials centers for school districts large enough to finance and support such a center. The Department of Audio-Visual Instruction of the National Education Association described the instructional materials center as follows:

The center is more than just space, materials, and equipment. It is a well-planned, flexible space housing carefully chosen materials and equipment, and serviced by effective professional people dedicated to a program of the best possible education for the young people and adults of the community.¹

The main functions of an instructional materials center include the selection of materials and equipment, providing services to teachers in the use of instructional materials, and the actual organization and administration of the materials center itself.

I. LOCATION OF THE CENTER

The instructional materials center is the hub or nucleus around which much of the teaching and learning

activity of a school is built. Its location within the school system should provide for ease in receiving and distributing equipment and materials. One author stated:

The depository, library, or teaching aids center should be located centrally, if possible. The location will be controlled by many such factors as transportation, school board officers, and space already available. Every effort should be made to locate it where it is readily accessible to the majority of the teachers. Its use will depend to a large degree on the ease with which teachers may reach it. A place frequented by teachers is the most logical location—a school library, a public library, or a municipal building.¹

If the materials center is located in an established school building of the system, it should be located so that traffic to and from it would not disturb classes that are in session in the building. Thus, an outside entrance would be advisable.

II. CONTENTS OF THE MATERIALS CENTER

The instructional materials center should contain a variety of carefully chosen materials and equipment. These materials and equipment should not replace the teaching aids normally used day-to-day by the classroom teacher, but should be a supplement to them. It would be a disadvantage to the teacher if all his instructional materials were apart from the classroom. Brown substantiated this point by

Many of the instructional materials needed for effective teaching are used often enough to warrant their being a part of the basic classroom equipment. Some, on the other hand, are services or materials, rather expensive or needed only for a short period of time, which can serve the entire school system. In between are items which obviously can be shared advantageously from time to time by several teachers at the same teaching level.

Most authors seemed to agree that if an instructional device could benefit a teacher, either daily or occasionally, it should be contained in the inventory of the materials center. One author suggested the following list as an inventory guide:

1. **Printed materials** such as books, reference materials, pamphlets, magazines, instructional guides, mimeographed materials, and charts.

2. **Audio-visual materials** such as films, filmstrips, recordings, slides, maps, globes, pictures, and models.

3. **Audio-visual equipment** such as 16 mm. projectors, filmstrip projectors, tape recorders, record players, opaque projectors, overhead projectors, screens, televisions, and microprojectors.

4. **Other useful materials** such as collections (rocks,

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stamps, seashells), exhibits, relics, field trip guides, files of resource units, and files of resource personnel.\(^1\)

Most of the audio-visual equipment mentioned in item three above is used by the classroom teacher on a part-time basis. However, some of these machines may be kept in the classroom on a permanent basis if used often enough, and others will be stored in the instructional materials center until needed.

There is some equipment not mentioned above that is necessary to the operation and function of the materials center. These machines are used to duplicate and produce teaching materials for the teacher. A general, but not exhaustive, list of these machines and furniture follows:

1. **Copying machines**, used to reproduce pictures or printed matter from books, periodicals, or newspapers.

2. **Transparency making machine**, used to copy pictures or printed matter on to a piece of clear acetate, the produced material being called a transparency. This transparency is then used on an overhead projector for projection in a classroom or audito-

3. **Spirit duplicator**, used to reprint handwritten or typed materials from a master ditto sheet onto paper. One ditto master will reproduce from two hundred to three hundred copies.

4. **Dry mount press**, used for framing and mounting pictures onto a stiffer backing to give them durability. This machine is also used to laminate plastic coatings on pictures, maps, posters, or school records. This covering prolongs the life of these materials if they are handled excessively.

5. **Splicing machine** - There are two kinds of this machine. One is used for splicing films and filmstrips, the other is for splicing tapes used on tape recorders.

6. **Previewers**, used to preview filmstrips or slides before the teacher uses them in his classroom.

7. **Detector indicator**, used to examine films for damage after their return from a user.

8. **Tables and cabinets** - There will be a great need for tables and cabinets in the materials center for the storage of machines, films, filmstrips, and other articles.

The variety of materials and equipment to be used necessitates plenty of space and furniture to accommodate
the teaching aids. Rooms or carrels for individual study and areas for group discussion are needed. Beggs has said:

The recognition that diverse activities will go on in the functioning instructional materials center means adequate space needs to be provided and arranged in functional ways for the center to meet its purposes. Areas must be set up where students can read without interruption, type or work on teaching machines freely, and view filmstrips or listen to recordings at any time. Careful planning of individual and group work spaces in quiet and noise zones will make this possible.

The teacher must also have work rooms in the materials center. The easy access to instructors will encourage students to seek more conferences with their teachers. Constructive supervision can be given students by having teachers work in the same area where students are studying.

III. HOW CONTENTS ARE TO BE DETERMINED

All schools have some instructional materials. However, most of these aids are centralized in the individual rooms. Almost every teacher has pictures, a clipping file, and a collection of something in his room. But only a few teachers know of these materials and recognize them as sources or aids to other teachers. Unless a school system has a means of collecting, cataloging, and distributing these various teaching tools, many valuable aids lie idle.

most of the school year.

One author believed the best way to start a teaching resource file is to take a complete inventory of the buildings. Then, using this list as a basis, one can add to it as seen by the needs of the system.\(^1\)

Within the framework of determining materials for the instructional materials center is the question of a basis for the choice-making. One group of educators, representing many instructional levels and many types of position, attempted to identify the criteria which are applicable to the selection of all types of materials and equipment. These six represent their findings:

1. Is selection cooperative with principal, teacher, pupils, and supervisors to the extent that each is interested and competent?

2. Is selection made on knowledge of the needs and interests of the pupils and of the teachers?

3. Is selection made with knowledge and understanding of materials available for selection?

4. Are the items selected related to the curriculum and suitable to the teaching methods and purposes in the schools?

5. Are the items selected to the grade and interest levels for which they are suggested?

6. Are all types of materials considered in choosing those for the materials center, to insure a variety of aids to teaching and learning, without justifiable emphasis on any one type?¹

The cooperative selection of materials for the instructional materials center is imperative; however, the classroom teacher must play the prime role. Srygley emphasized that the further the selection of materials is removed from the point of use, the more likely it becomes that the materials and equipment will be ineffective in the specific teaching situation.² It was brought out in the report of the Southern States Work Conference that the teachers and other instructional personnel are in the best position to decide the values of materials to be used in the educational process at any level.³


²Ibid.

Taylor has stated:

In the modern school where greater co-ordination is essential among departments, and where modification in student schedules, teaching assignments, class grouping and facilities for individual student research is necessary, more attention must be given to the flexibility offered by a large variety of instructional materials.

From an administrative position, it should seem that complete co-ordination of instructional materials will soon be necessary for any school. No longer can many schools afford the expense to let departments build isolated libraries of duplicate materials to be used by themselves alone. The centrally organized materials center seems to be the answer for the future school program.

The advantages of such a center are related more nearly to design and organization than to the size of the school. It is difficult to see why any school, regardless of size, should not benefit from the economy that results from centralization, more efficient utilization of staff services, and reduced duplication of instructional materials.1

A means of providing financial support and setting up a budget for the materials center is a problem which, if not handled correctly, could very easily break down the whole program. Almost all authorities place the responsibility of financial support with the board of education of the local school district. Srygley substantiated the point by saying, "The financial means for purchasing instructional aids

1Kenneth I. Taylor, "How to Plan and Equip an Instructional Materials Center," Nation's Schools, LXVII (January, 1961), 53-54.
should be allocated by the school administration from tax
supported funds." Wittich and Schuller also pointed out:

Since the board of education is basically concerned
with the fullest development of children and the maximum
effectiveness of all the staff, it is especially impor-
tant that it makes sure that sufficient funds are
provided for necessary and adequate audio-visual mate-
rials.2

The funds for a curriculum materials center must be
needed, not just allotted every year. When a need has been
established for additional materials or equipment, it should
be referred to the administration to be placed in the
budget. Wittich stated:

The only sound basis for arriving at a budget for an
audio-visual program is to find out the needs for the
program, determine the cost of these needs, and finally
submit the whole picture to the school authorities to
weigh the costs of such a planned program against all
other school services similarly expressed in dollar
needs.3

The co-ordination of funds for school materials is
also important. Evans emphasized this point in the follow-
ing statement:

1Srygley, op. cit., p. 310.

2Walter Wittich and Charles Schuller, Audio-Visual
Materials--Their Nature and Use (New York: Harper and

3W. A. Wittich, "Financial Support for the Audio-
Visual Program," The School Administrator and His Audio-
Visual Program, C. F. Schuller, editor, First Yearbook of
the Department of Audio-Visual Instruction (Washington,
It is obvious that an adequate budget in line with the instructional program of the school must be provided to procure high quality materials. Though the budget is more flexible and may be used to better advantage under the instructional materials center organization, good quality for library, audio-visual, and textbooks cannot be combined to make one good budget. It should be remembered that although there will be more sharing of materials in one instructional materials center, the cost of the materials remains the same and therefore a sound basic budget is still a necessity.\(^1\)

Initially, this budget should contain allocations for materials and equipment to be placed on the inventory of the materials center. Once the center is in operation and there is a continuing need for more teaching aids, the school board may want to utilize teacher help during the summer months to prepare and produce these aids. With the thought that the teacher plays the prime role in determining the instructional aid, certain teachers from particular subject areas could be reimbursed for their work in the production of curriculum materials for their areas.

V. ADMINISTRATION OF THE CENTER

Direction and co-ordination of an instructional materials program within a school system is increasingly coming from the system's instructional materials center, rather than from the administrators in the separate schools.

The center maintains a reservoir of materials and equipment on which the schools can draw for seasonal over-demands. In the materials center is the teacher's professional library and the collection of curriculum materials.

Shores discussed the administrative aspect of the instructional materials center by saying:

There is a noticeable trend among school systems to provide a system center or a capstone for an instructional materials program. Under the direction of a supervisor and assistants at this headquarters, a co-ordinating purpose can be given to every phase, from procurement of materials to dissemination.1

The supervisor or co-ordinator of the instructional materials center is a key figure in the school's instructional program. Wittich and Schuller described him in this manner:

He must be a combination of outstanding teacher, curriculum worker, subject supervisor, and general administrator. He must have as the center of his interest an abiding faith in the desirability of working side by side with interested teachers in furthering an understanding, improving instruction in the classroom.2

Wittich and Schuller also offered the following list of specific qualifications which the co-ordinator should possess:

1. Successful experience in classroom teaching.

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2 Wittich and Schuller, op. cit., p. 526.
2. Professional training in audio-visual methods, supervision, and administration.


4. Ability to demonstrate audio-visual theories, plans, and techniques.

5. Continual professional contact with colleagues in connection with curriculum, teaching methods, and audio-visual education.

6. Ability to work well with lay people and with teachers, fellow supervisors, and administrators.¹

The co-ordinator must see his work as contributing to the educational experiences planned for children. He is thought of as a specialist in the instructional materials of the curriculum, seeing equipment and materials as tools and as means for the achievement of the ends of education. He must understand learning theory, for example, being able to place the right materials in the hands of an able teacher.

Dale gave his views of the curriculum co-ordinator:

The co-ordinator is not a faddist for some specific method or material; at his best, he is something of an educational statesman. He has sagacity in personal relationships, and he knows that most of us do not make dependable judgments when we feel insecure . . . He must be patient and mindful of the fact that there are many acceptable routes to an educational goal . . . One of the co-ordinator's basic jobs is to help teachers try

¹Ibid., pp. 526-527.
out and get the feel of new ways of teaching.\textsuperscript{1}

Once the system's materials center is organized, and under the direction of a co-ordinator, it will provide many and varied services. De Bernardis suggested the following as a few of the services the co-ordinator and his staff can offer:

1. To catalog and inventory all types of teaching and learning materials--books, pamphlets, films, recordings, models, exhibits, art prints, slides, filmstrips, microfilms, community resources.

2. To maintain and service all of the teaching tools used in the school.

3. To inform teachers and students about new developments in materials, equipment, and teaching technology.

4. To produce materials which are unique to a specific teaching situation.

5. To provide assistance in the locating of needed teaching and learning materials.

6. To assist teachers and students in the use of teaching equipment and materials.

7. To provide space and facilities for teachers and

students to preview, audition, review, and try out various teaching media.

8. To serve as a comprehensive learning laboratory in which students can learn to use all types of learning materials and equipment.

9. To provide for continuous evaluation of the program and services.¹

The administration of an instructional materials program calls for many activities. Among them are the formation of policy, the assignment of definite responsibilities for its execution, and the selection, evaluation, and utilization of instructional materials and equipment.

The co-ordinator is responsible to some administrative authority above him, whether it be Superintendent or Principal. He, himself, is an administrator and must formulate policy for his staff. The teaching personnel of the school system will also be affected by this policy.

This policy will encompass the handling of materials and equipment, duties of his staff members, hours that the center will be open, who will have access to the center after hours, who is responsible for checking the materials in and out, when pick-up and delivery of materials and

equipment will be done, and many other duties.

The staff chosen by the co-ordinator and the administration play an important role in the center. As one author said:

The staff of the department assumes the responsibility for the procurement, preparation, distribution, storage, and maintenance of the audio-visual instructional materials and equipment owned by the school system. The internal organization necessary to smooth efficient service must be worked out and continuously evaluated by the staff. The kind of service offered to the schools depends upon the spirit of service which permeates the entire staff.¹

**In-service training.** The co-ordinator and his staff are also responsible for in-service training programs to help the faculty become acquainted with new materials and equipment as well as showing them how to use the materials center to benefit their teaching. When preparing an in-service training session, certain guidelines should be followed. One writer suggested the following:

1. The program must grow out of problems that are significant to teachers, librarians, supervisors, and principals.

2. The concerned persons must be involved in planning

the in-service activities.

3. Clear and specific goals must be set up and kept in focus.

4. There must be opportunities for all concerned to share effective techniques that are learned and materials that are located.

5. Necessary resources, materials, and consultants must be made available.

6. Any program must start where the group is and go as far as possible.

7. Each person must have a vital part in making the program successful.

8. There must be evaluation of progress and re-examination of needs at regular intervals.¹

The in-service training sessions should not occur just at the start of school or the end of school, but should be held whenever the need arises. The co-ordinator may find that neither he nor his staff can supply the necessary information needed concerning some problem; then it is appropriate to call in a consultant to handle the program.

This consultative assistance will help strengthen the teaching program by the sharing of new ideas and approaches to classroom techniques.

Thus, the effectiveness of the entire program of the instructional materials center can be measured in terms of its ability to present an interesting, vivid, and realistic series of socially important learning experiences to the pupil. It is fast becoming a necessary part of the educational program for all schools.

VI. SUMMARY

Research findings for use in developing a plan for an instructional materials center have been presented in this chapter. Five main areas of this development have been discussed and the objectives of each are considered below.

Location of the center. The materials center should be located as centrally as possible with respect to the schools in the district. Its location should allow teachers and others who use it to come and go without disturbing others who may be using the same building.

Contents of the materials center. All instructional materials and equipment that can help in the teaching of children should be contained in the inventory of the instructional materials center. Teaching aids that are of daily
use to the classroom teacher should remain in the classroom, but duplicates of these materials and extra equipment should be contained in the center itself. The center will also house the machines necessary for the duplication and production of audio-visual materials.

The materials center must be spacious, having a service area where students and faculty may work, either individually or in groups.

**How contents are to be determined.** The initial materials for an instructional materials center will be those already owned by the school. Then as the need arises for additional materials or equipment, these may be added.

The decision as to what materials and equipment should be added to the center should be a cooperative effort with the classroom teacher playing the prime role. The materials must be chosen with specific objectives in mind, based on the needs and philosophy of the school.

**Financing the center.** The finances for the materials center should come from school district funds. A budget, which shows the items needed and the cost of these items, should be prepared. This budget is then presented to the administration for its approval.

The funds for the materials center should not only be used for materials and equipment, but also for the remunera-
tion of consultants for in-service work and teachers for their production of curriculum materials during the summer months.

**Administration of the center.** The center should be under the direction of a supervisor or co-ordinator. He should be carefully chosen, having the qualifications and characteristics necessary for the position. The co-ordinator and his staff are recognized as the hub of the instructional program, rendering many services to the faculty and students.
CHAPTER III

REPORT OF THE STUDY

A total of one hundred eighty-one faculty members and principals were asked to complete a questionnaire with a section for free response comments. All six of the principals questioned and one hundred sixty-one faculty members returned a completed questionnaire.

The faculty was surveyed to determine their use of audio-visual equipment and materials, the amount of audio-visual training they had received, the availability of audio-visual materials and equipment to them in the classroom, the need for a local depository of audio-visual materials and equipment, and the location of such a depository. Specific comments supporting their answers were also given on some of the questionnaires.

The six principals were surveyed as to the amount of audio-visual equipment they now have in their respective buildings, who is in charge of the equipment, the amount of expenditure for audio-visual equipment and materials, from what source they receive their materials, the need for a local depository of audio-visual equipment and materials, the location of such a depository, and what additional

1See Appendices A and B
audio-visual materials and equipment they need for their buildings and faculty.

The responses from the faculty members were separated as to high school (grades 9-12), junior high school (grades 7-8), and elementary (grades K-6).

I. RESULTS OF QUESTIONNAIRES FROM FACULTY

In the following paragraphs and tables, surveyed data are presented for the one hundred sixty-one faculty members who participated in this study. All percentages used have been computed to the nearest per cent.

The schools that participated in the study and the number of teachers in each school who returned questionnaires are shown in Table I.

| TABLE I |
| NAMES OF SCHOOLS IN THE WEST DES MOINES COMMUNITY SCHOOL DISTRICT AND THE NUMBER OF RESPONSES FROM EACH SCHOOL |

<table>
<thead>
<tr>
<th>Name of school</th>
<th>Number of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valley High School</td>
<td>37</td>
</tr>
<tr>
<td>Stilwell Junior High</td>
<td>29</td>
</tr>
<tr>
<td>Clive Elementary</td>
<td>24</td>
</tr>
<tr>
<td>Clover Hills Elementary</td>
<td>17</td>
</tr>
<tr>
<td>Phenix Elementary</td>
<td>16</td>
</tr>
<tr>
<td>Clegg Park Elementary</td>
<td>10</td>
</tr>
<tr>
<td>Crestview Elementary</td>
<td>8</td>
</tr>
<tr>
<td>Fairmeadows Elementary</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>161</td>
</tr>
</tbody>
</table>
Answers from the faculty to the question, "Which of the following audio-visual materials do you use in your classroom and about how often?" are tabulated in Table II. The responses were tabulated in terms of percentages under the headings of "Never Used," "Seldom Used," "Sometimes Used," and "Frequently Used."

**16 mm. projector.** The elementary school faculty made the most use of the movie projector with about eighty-eight per cent of them using it occasionally during the school year. Seventy-nine per cent of the junior high teachers and sixty-two per cent of the high school teachers made use of this projector during the year. Of the high school teachers who use the 16 mm. projector, only fifty-one per cent were in the category of "sometimes used" and "frequently used."

**Filmstrip projector.** Over ninety per cent of the elementary school teachers made use of the filmstrip projector during the school year, as compared to about fifty-nine per cent of the high school and junior high school teachers. Seventy-four per cent of the elementary school teachers indicated usage in the "sometimes and frequently used" areas, as compared to only twenty-four per cent of the high school teachers and thirty-one per cent of the junior high teachers.

**Opaque projector.** The opaque projector is one of the least used pieces of equipment in the West Des Moines
TABLE II
PERCENTAGE OF RESPONSES BY ONE HUNDRED SIXTY-ONE TEACHERS OF THE WEST DES MOINES COMMUNITY SCHOOLS TO THE QUESTION, "WHICH OF THE FOLLOWING AUDIO-VISUAL MATERIALS DO YOU USE IN YOUR CLASSROOM AND ABOUT HOW OFTEN?"

<table>
<thead>
<tr>
<th>Material</th>
<th>Never Used High School</th>
<th>Never Used Junior High School</th>
<th>Never Used Elementary School</th>
<th>Seldom Used High School</th>
<th>Seldom Used Junior High School</th>
<th>Seldom Used Elementary School</th>
<th>Sometimes Used High School</th>
<th>Sometimes Used Junior High School</th>
<th>Sometimes Used Elementary School</th>
<th>Frequently Used High School</th>
<th>Frequently Used Junior High School</th>
<th>Frequently Used Elementary School</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 mm. projector</td>
<td>38</td>
<td>21</td>
<td>12</td>
<td>11</td>
<td>10</td>
<td>5</td>
<td>29</td>
<td>31</td>
<td>28</td>
<td>22</td>
<td>38</td>
<td>55</td>
</tr>
<tr>
<td>Filmstrip projector</td>
<td>41</td>
<td>41</td>
<td>8</td>
<td>35</td>
<td>28</td>
<td>18</td>
<td>13</td>
<td>17</td>
<td>50</td>
<td>11</td>
<td>14</td>
<td>24</td>
</tr>
<tr>
<td>Opaque projector</td>
<td>54</td>
<td>48</td>
<td>40</td>
<td>24</td>
<td>21</td>
<td>21</td>
<td>19</td>
<td>28</td>
<td>26</td>
<td>3</td>
<td>3</td>
<td>13</td>
</tr>
<tr>
<td>Record player</td>
<td>41</td>
<td>48</td>
<td>8</td>
<td>5</td>
<td>14</td>
<td>2</td>
<td>30</td>
<td>34</td>
<td>35</td>
<td>14</td>
<td>4</td>
<td>55</td>
</tr>
<tr>
<td>Television set</td>
<td>89</td>
<td>79</td>
<td>19</td>
<td>3</td>
<td>10</td>
<td>4</td>
<td>5</td>
<td>10</td>
<td>20</td>
<td>3</td>
<td>1</td>
<td>57</td>
</tr>
<tr>
<td>Tape recorder</td>
<td>54</td>
<td>62</td>
<td>43</td>
<td>11</td>
<td>17</td>
<td>23</td>
<td>24</td>
<td>10</td>
<td>26</td>
<td>11</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>Overhead projector</td>
<td>57</td>
<td>38</td>
<td>71</td>
<td>14</td>
<td>34</td>
<td>12</td>
<td>19</td>
<td>21</td>
<td>12</td>
<td>10</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Blackboard</td>
<td>0</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>16</td>
<td>7</td>
<td>4</td>
<td>84</td>
<td>83</td>
<td>96</td>
</tr>
<tr>
<td>Maps</td>
<td>38</td>
<td>41</td>
<td>15</td>
<td>16</td>
<td>21</td>
<td>5</td>
<td>22</td>
<td>7</td>
<td>26</td>
<td>24</td>
<td>31</td>
<td>54</td>
</tr>
<tr>
<td>Models</td>
<td>41</td>
<td>38</td>
<td>25</td>
<td>16</td>
<td>21</td>
<td>12</td>
<td>24</td>
<td>14</td>
<td>41</td>
<td>19</td>
<td>27</td>
<td>22</td>
</tr>
</tbody>
</table>
Community School System. Of the forty-six per cent of the high school teachers and fifty-two per cent of the junior high teachers who use it occasionally during the year, only three per cent frequently use it. The elementary school teachers use it most with sixty per cent using it at some-time during the year.

**Record player.** The record player is a valuable tool for the elementary school teacher as ninety-two per cent indicated use of it at sometime during the year. This is further emphasized by the fact that ninety per cent of these teachers showed usage in the "sometimes and frequently used" columns. Forty-one per cent of the high school teachers and forty-eight per cent of the junior high teachers never use the record player as a teaching aid.

**T. V. set.** The least used piece of audio-visual equipment in the high school and junior high is the television set. Almost ninety per cent of the high school faculty and eighty per cent of the junior high faculty never use it in the classroom. The elementary teacher takes advantage of it as eighty-one per cent use it sometime during the year and fifty-seven per cent of them use it frequently.

**Tape recorder.** Another machine that is not used extensively is the tape recorder. Fifty-four per cent of the high school faculty, sixty-two per cent of the junior
high faculty, and forty-three per cent of the elementary teachers never use it. The high school faculty had a thirty-five per cent usage and the elementary teachers had a thirty-four per cent usage under the headings of "sometimes and frequently used" columns. Only twenty-one per cent of the junior high teachers were listed under this category of usage.

**Overhead projector.** The high school and junior high teachers make the most use of the overhead projector with sixty-two per cent of the junior high faculty and forty-three per cent of the high school faculty using it occasionally during the year. Seventy-one per cent of the elementary teachers have never adapted the use of the overhead projector to their classroom work.

**Blackboard.** By far the most used audio-visual aid in the classroom is still the blackboard. One hundred per cent of the high school and elementary school teachers reported the use of it in the "sometimes and frequently used" headings. This was not true of the junior high faculty as only ninety per cent fell into these categories.

**Maps.** The elementary school teachers use maps in their classrooms more than the high school or junior high faculties. Eighty-five per cent of the elementary teachers use maps in their teaching compared to sixty-two per cent of the junior high faculty.
Models. The visual aid classified as a model is also used more often by the elementary teacher than by the junior high or high school teacher. Seventy-five per cent of the elementary teachers use models in their teaching at sometime during the school year. Forty-one per cent of the high school teachers and thirty-eight per cent of the junior high teachers never use them.

Table III shows the responses to the question, "While in college, how many hours of audio-visual education did you receive?" The responses showed that forty per cent of the faculty members in the West Des Moines Community Schools

<table>
<thead>
<tr>
<th>Number of hours</th>
<th>High School</th>
<th>Junior High</th>
<th>Elementary</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
<td>Percent</td>
</tr>
<tr>
<td>None</td>
<td>22</td>
<td>59</td>
<td>16</td>
<td>55</td>
</tr>
<tr>
<td>One to three hours</td>
<td>12</td>
<td>33</td>
<td>13</td>
<td>45</td>
</tr>
<tr>
<td>Four to six hours</td>
<td>2</td>
<td>5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>More than six hours</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
have had no college training in the area of audio-visual education. Seventy-two per cent of the elementary school teachers have had at least one course in the area, whereas only forty-five per cent of the junior high teachers and forty-one per cent of the high school teachers have had a course in audio-visual education.

"Have you ever attended an audio-visual in-service training program?" is shown in Table IV. An average of only twenty-nine per cent of the teachers indicated a positive answer to the question. The junior high faculty had the highest per cent of attendance to such a training program with a thirty-one per cent record.

**TABLE IV**

RESPONSES BY ONE HUNDRED SIXTY-ONE TEACHERS OF THE WEST DES MOINES COMMUNITY SCHOOLS TO THE QUESTION, "HAVE YOU EVER ATTENDED AN AUDIO-VISUAL IN-SERVICE TRAINING PROGRAM?"

<table>
<thead>
<tr>
<th>Response</th>
<th>High School</th>
<th>Junior High</th>
<th>Elementary</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Per cent</td>
<td>Number</td>
<td>Per cent</td>
</tr>
<tr>
<td>Yes</td>
<td>11</td>
<td>30</td>
<td>9</td>
<td>31</td>
</tr>
<tr>
<td>No</td>
<td>26</td>
<td>70</td>
<td>20</td>
<td>69</td>
</tr>
</tbody>
</table>

These results, along with those in Table III, page 33, may help to explain why the faculty members are not making more use of audio-visual equipment. With only sixty
per cent of the faculty having had college training in audio-visual education and only twenty-nine per cent having had in-service training in the area, it indicates that they may be lacking in the skills of using this equipment and materials.

Table V shows the answers to the question, "Would you attend an audio-visual in-service training program in the West Des Moines Community School District if it were made available to you?" There is a general agreement among all the teachers to the affirmative as over eighty-six per cent indicated they would attend. (The space for undecided was added to the responses as there were five faculty members who did not put an answer for this question.)

TABLE V

RESPONSES BY ONE HUNDRED SIXTY-ONE TEACHERS OF THE WEST DES MOINES COMMUNITY SCHOOLS TO THE QUESTION, "WOULD YOU ATTEND AN AUDIO-VISUAL IN-SERVICE TRAINING PROGRAM IN THE WEST DES MOINES COMMUNITY SCHOOL DISTRICT IF IT WERE MADE AVAILABLE TO YOU?"

<table>
<thead>
<tr>
<th>Response</th>
<th>High School</th>
<th>Junior High</th>
<th>Elementary</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Number</td>
<td>Number</td>
<td>Number</td>
</tr>
<tr>
<td></td>
<td>Per cent</td>
<td>Per cent</td>
<td>Per cent</td>
<td>Per cent</td>
</tr>
<tr>
<td>Yes</td>
<td>31</td>
<td>25</td>
<td>83</td>
<td>139</td>
</tr>
<tr>
<td>No</td>
<td>5</td>
<td>3</td>
<td>9</td>
<td>17</td>
</tr>
<tr>
<td>Undecided</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
</tbody>
</table>


Table VI deals with the availability of audio-visual equipment and materials for the teachers' use. Only fifty-six per cent of the entire faculty polled could positively affirm that audio-visual materials and equipment were always available for their use. Thirty-two per cent of the entire faculty indicated that the materials and equipment were available some of the time, with the remaining twelve per cent indicating that they were not always available.

TABLE VI

RESPONSES BY ONE HUNDRED SIXTY-ONE TEACHERS OF THE WEST DES MOINES COMMUNITY SCHOOLS TO THE QUESTION, "ARE FILMS, FILMSTRIPS, MODELS, RECORDS, TAPES AND AUDIO-VISUAL EQUIPMENT ALWAYS AVAILABLE FOR YOUR USE WHEN YOU NEED THEM?"

<table>
<thead>
<tr>
<th>Response</th>
<th>High School</th>
<th>Junior High</th>
<th>Elementary</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Per cent</td>
<td>Number</td>
<td>Per cent</td>
</tr>
<tr>
<td>Yes</td>
<td>19</td>
<td>51</td>
<td>18</td>
<td>62</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>6</td>
<td>16</td>
<td>7</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sometimes</td>
<td>12</td>
<td>33</td>
<td>4</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

These results further add to the picture of why the faculty is not using audio-visual materials and equipment more often. The point that the materials are not readily available may cause teachers not to use them at all, or at least use them at a reduced rate.
According to Table VII, seventy-two per cent of the total faculty would like to see a central depository of audio-visual materials and equipment established in the West Des Moines Community School District. The high school faculty had the highest per cent of yes votes with ninety-two per cent. The junior high teachers had a seventy-nine per cent affirmative vote followed by the elementary teachers with a sixty-two per cent acknowledgement. The elementary faculty was the largest dissenter with thirty-six per cent of them voting no. From this total of negative votes, ninety-two per cent were from one elementary school.

**TABLE VII**

RESPONSES BY ONE HUNDRED SIXTY-ONE TEACHERS OF THE WEST DES MOINES COMMUNITY SCHOOLS TO THE QUESTION, "DO YOU BELIEVE THAT A CENTRAL DEPOSITORY OF AUDIO-VISUAL MATERIALS AND EQUIPMENT FOR THE WEST DES MOINES COMMUNITY SCHOOL DISTRICT WOULD HELP TO FACILITATE HAVING THESE TEACHING AIDS WHEN YOU NEED THEM?"

<table>
<thead>
<tr>
<th>Response</th>
<th>High School</th>
<th></th>
<th>Junior High</th>
<th></th>
<th>Elementary</th>
<th></th>
<th>Total</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Per cent</td>
<td>Number</td>
<td>Per cent</td>
<td>Number</td>
<td>Per cent</td>
<td>Number</td>
<td>Per cent</td>
</tr>
<tr>
<td>Yes</td>
<td>34</td>
<td>92</td>
<td>23</td>
<td>79</td>
<td>59</td>
<td>62</td>
<td>116</td>
<td>72</td>
</tr>
<tr>
<td>No</td>
<td>3</td>
<td>8</td>
<td>5</td>
<td>17</td>
<td>34</td>
<td>36</td>
<td>42</td>
<td>26</td>
</tr>
<tr>
<td>Undecided</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

The responses to the question, "If a central deposi-
tory of audio-visual materials for the school system were established, in what building do you believe it would best serve our district?" are shown in Table VIII. Of the one hundred sixteen teachers answering "yes" to the question of establishing a central depository, the largest per cent (twenty-four per cent) was undecided on a particular location. However, three buildings in the district were mentioned more than others. Stilwell Junior High School received twenty-one per cent of the votes, the Administration Office received twenty per cent, and Valley High School received eighteen per cent.

**TABLE VIII**

RESPONSES BY ONE HUNDRED SIXTEEN TEACHERS OF THE WEST DES MOINES COMMUNITY SCHOOLS FAVORING A CENTRAL DEPOSITORY TO THE QUESTION, "IF A CENTRAL DEPOSITORY OF AUDIO-VISUAL MATERIALS FOR OUR SCHOOL SYSTEM WERE ESTABLISHED, IN WHAT BUILDING DO YOU BELIEVE IT WOULD BEST SERVE OUR DISTRICT?"

<table>
<thead>
<tr>
<th>Name of school</th>
<th>Number</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valley High School</td>
<td>21</td>
<td>18</td>
</tr>
<tr>
<td>Stilwell Junior High School</td>
<td>25</td>
<td>21</td>
</tr>
<tr>
<td>Administration Office</td>
<td>23</td>
<td>20</td>
</tr>
<tr>
<td>Clegg Park Elementary School</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Clive Elementary School</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Clover Hills Elementary School</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Crestview Elementary School</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Fairmeadows Elementary School</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Phenix Elementary School</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>New High School (9th grade unit)</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Undecided</td>
<td>28</td>
<td>24</td>
</tr>
<tr>
<td>A depository for each school</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>116</td>
<td>100</td>
</tr>
</tbody>
</table>
tion Office received twenty per cent of the votes, and Valley High School accumulated eighteen per cent of the votes. These buildings are shown on the map of the school district on page 40.

II. RESULTS OF QUESTIONNAIRES FROM PRINCIPALS

In the following paragraphs, surveyed data are presented from the six school principals that participated in this study.

When asked the question, "Who is in charge of your audio-visual equipment?" the four elementary school principals indicated that they took the responsibility themselves. The high school principal and the junior high principal delegated the authority to a teacher on a part-time basis.

All six principals indicated that the money used for the purchasing of audio-visual equipment and materials came principally from the school budget. The elementary schools also receive funds from outside sources, such as P.T.A., Mother's Clubs, etc.

The average yearly funds for the last three years that were spent for audio-visual equipment and materials by the six school principals totaled $7,602.00. One thousand four hundred fifty-seven dollars and thirty-five cents was spent for audio-visual materials; the remaining $6,144.65 was spent for audio-visual equipment. With 4,600 students
enrolled in the school system, $1.60 per-student-per-year was spent on audio-visual materials and equipment during the last three years.

Four of the six principals had increased their budget for audio-visual equipment and materials for the ensuing school year.

Five of the principals indicated that their teachers receive audio-visual materials from the State Universities in Iowa and all of the principals mentioned that materials were obtained from the Polk County Board of Education Office, from free sources and that their faculties used school owned materials.

In answering the question, "Would you be interested in seeing a central depository of instructional materials provided in the school district?" all but one of the principals voted yes. One of the elementary school principals voted in the negative.

Three of the principals who voted for a central depository believed that the Administration Office would be the best location for it. One principal thought Stilwell Junior High would be the best location and the fifth principal was undecided.

The next question asked of the six school principals was to use a check sheet to check off the audio-visual equipment and materials maintained by them in their respec-
tive buildings. This list appears in Table IX.¹

The final question asked of the principals was to name the audio-visual equipment and materials that they planned to add to their inventory for the next year. All six principals said they were adding at least one 16 mm. projector, one overhead projector, one record player, and one tape recorder. Three of the principals are also adding a filmstrip projector and a tri-pod screen. One principal is ordering an opaque projector.

In the area of instructional materials, four of the six principals said they were purchasing tapes and filmstrips for their teachers. Two principals were ordering record albums.

¹See Appendix C.
CHAPTER IV

ANALYSIS OF THE DATA

The information collected and presented in Chapter III reveals some significant facts about the number and use of audio-visual materials and equipment in the West Des Moines Community School District. The results of the survey revealed some satisfying aspects but, in general, showed the need for improving the practices in the use, procurement, distribution, and financing of audio-visual materials and equipment.

I. LACK OF USE OF SOME EQUIPMENT

One of the first findings revealed by the survey was that some of the audio-visual equipment in the system was not being used to a great extent. The opaque projector, the overhead projector, the tape recorder, and the television set were being used by less than fifty per cent of the teachers. The 16 mm. projector, the filmstrip projector, and the record player are used more often, but still not used by about one-fourth of the faculty.

This lack of use may have various causes but the findings seem to indicate the following: (1) lack of ability and skill on the part of some teachers in operating the machines, (2) unavailability of audio-visual materials
to use with the machines, and (3) insufficient number of
machines in proportion to number of teachers and students.
These reasons are substantiated by the fact that only sixty
per cent of the faculty members have had any college train-
ing in the area of audio-visual education and only twenty-
nine per cent have had in-service training in this area.
Concerning the availability of audio-visual materials, only
fifty-six per cent of the teachers could positively affirm
that these materials were available when needed. The
statements above imply that the faculty members are defi-
cient in the use of audio-visual equipment and that the
availability and distribution of audio-visual materials in
the system are not satisfactory.

It is satisfying to note that the faculty members are
interested in rectifying this deficiency as over eighty-six
per cent indicated an interest in attending in-service
training in the use of audio-visual materials and equipment.
The lack of some pieces of audio-visual equipment in
the school district also seems to be a reason for the little
use that this equipment receives. One fact revealed by the
study was that one elementary school had no overhead projec-
tor and another had no tape recorder. Looking at the entire
system, the ratio of pieces of equipment to the number of
students is somewhat lower than recommended by the Depart-
ment of Audio-Visual Instruction of the National Education
The following list shows the ratio in the West Des Moines Community School District, based on the 1964-65 A.D.A. enrollment of 4,600 students:

1. 16 mm. projectors 1 to 240 students
2. Overhead projectors 1 to 330 students
3. Opaque projectors 1 to 350 students
4. Tape recorders 1 to 420 students
5. Record players 1 to 85 students
6. Filmstrip projectors 1 to 240 students
7. Television sets 1 to 180 students

It is important to note that three of the four machines used only fifty per cent of the time by the teachers have the lowest per student ratio. This suggests that the school system is in need of more overhead projectors, opaque projectors, and tape recorders.

One fact brought out in the survey was that all six principals in the school system were ordering at least one overhead projector and one tape recorder for each of their respective schools. However, only one principal was adding an opaque projector to his audio-visual inventory.

II. LACK OF FUNDS FOR INSTRUCTIONAL MATERIALS

Audio-visual materials and equipment cannot be

1See Appendix D.
purchased by the school district for the teachers and students unless sufficient funds for such purchases are available. One of the findings of the survey was that the school district is currently spending $1.60 per-student-per-year for audio-visual materials and equipment. H. H. Seaton, serving with the American Council on Education Studies, recommends "one per cent of the annual per pupil cost as a minimum operating figure for the audio-visual program."\(^1\) The Department of Audio-Visual Instruction of the National Education Association also endorses this figure.\(^2\) With an annual per pupil cost of $420.00 in the West Des Moines School District, the audio-visual budget should be about $4.20 per pupil.

Four of the six principals said they were increasing their audio-visual budget for the next school year, which shows a step in the right direction.

III. FACULTY FAVORS CENTRAL DEPOSITORY

With the school system lacking in some pieces of


audio-visual equipment, the faculty deficient in the skills necessary to operate this equipment, and with the dissemination of audio-visual materials among the faculty being inefficient, it substantiates the writer's belief that there is need for a central depository of audio-visual materials and equipment in the school district. One other finding from the survey upholds this viewpoint in that seventy-two per cent of the faculty and five of the six principals voted yes to the question of establishing a central depository in the district.

Some faculty members emphasized the need for a central depository with the following comments:

I think our growing size and number of buildings indicate that a centrally located spot for A-V materials in addition to those already present in the schools would offer us a larger selection. I trust we would then continue to acquire new materials to pool each year.

This would work fine if materials were delivered from the central depository and picked up after their use.

I feel we need access to more and better films than what Polk County Office offers.

It would be wonderful if materials were available at telephone request and delivered to the building by this service. A good plan and a needed one.

We are used to using the "County Office"—but I miss being able to browse for library books and other materials on Saturday.

I think this is a good idea.

I do feel our system is getting so large we need an
audio-visual department of our own. I am anxious to see this discussed seriously.

West Des Moines could use their own film, filmstrip, and record library so that materials would be more available when needed.

A good idea, with great possibilities.

An excellent idea for non-graded materials and grades K-6. There is also the possibility of having more use because of availability of own library of films, filmstrips, etc.

The major concern of those voting against the central depository was the fear of losing the materials and equipment already in their buildings. The following comments were given in support of their answers:

We have adequate and excellent equipment and materials for audio-visual education available in our building.

It has been my experience that equipment must be right in the building itself in order to be really useful.

Think this would be fine for some materials, but believe each building needs to maintain certain teaching aids for itself.

I believe convenience is a factor, and many materials are better stored in the individual schools. As to equipment, the same idea applies.

I believe each building should have its own equipment.

Again it must be emphasized that the central depository houses the equipment that is not needed frequently in the classroom and those materials which can be shared with other teachers in the system, through duplication and reproduction.
IV. OTHER SIGNIFICANT FINDINGS

Several other findings as a result of the survey of the faculty and principals which are somewhat significant are:

1. The faculty named three locations in the West Des Moines Community School District as a suggested place for the central depository. They were the Administration Office, Stilwell Junior High, and Valley High School.

2. All schools within the system now receive their audio-visual materials from the State Universities in Iowa, the Polk County Education Office in Des Moines, and from their own supply of teaching aids.

3. The use of the blackboard as an audio-visual aid was very prominent among all the teachers. Maps and models were used by the majority of the teachers, also.

V. HOW MATERIALS CENTER IS TO FULFILL NEEDS

The instructional materials center is a service agency, being a resource center for teaching tools, materials, and ideas. It is a place to which teachers may turn, daily or occasionally, for help in discovering, obtaining,
and using instructional materials for the betterment of their teaching.

The teachers in the West Des Moines School District receive many of their instructional materials from the Polk County Office of Education in Des Moines. This office provides a valuable service to these teachers, as it does to all suburban schools in Polk County. But, because of this widespread service given by the County Office, it means that teachers must wait their turn for some teaching aids such as films, filmstrips, records, and models. If the West Des Moines School District had their own instructional materials center, these teaching aids would be available when needed, to correspond with the learning experience and thus prove effective in the learning situation. The daily pick-up and delivery that could be given in the school system would be more beneficial than the weekly service now being received from the County Office. The writer does not want to imply that the teachers in the West Des Moines system would discontinue using materials from the Polk County Office, as it would be impossible for a local district to duplicate the resources found in the County unit. The West Des Moines teachers should continue to use some of these materials that the local district could not initially, or perhaps ever, provide.

Once the instructional materials center has accumu-
lated various materials and equipment, it provides the faculty with a local place to browse and to see what other teachers at the same grade level or area are using. The sharing of ideas on teaching procedures and techniques can prove invaluable for the new teacher and the teacher in a new assignment.

The central depository of instructional materials would also contain extra audio-visual equipment to draw upon when there is an over-demand in a particular building. Having the equipment available allows the teacher to show his film, for instance, on the scheduled date rather than causing a delay because all the projectors in his building are in use. With these few extra pieces of equipment, there can be a revolving schedule whereby every piece of equipment can periodically be in the materials center to be inspected and cleaned by the co-ordinator and his staff.

Another advantage afforded by a local materials center under the direction of a co-ordinator and his staff is that in-service training may be given to aid teachers in the operation of audio-visual equipment, to acquaint them with new materials, and to help them in the preparation of new teaching aids. Being concerned with only the local school district, the co-ordinator can conduct training sessions or workshops whenever there is a definite need for such. This procedure is more advantageous as it helps to
satisfy this need at once, as compared to workshops offered by the county or state associations that are held once or twice a year.

It is obvious that the initial cost for a central depository would be high. However, with the West Des Moines School District now spending less than half of the amount recommended by authorities in the audio-visual area, this amount of expenditure could be increased to comply with the recommendations, and thus a great amount of materials could be added to the system.

In summary, it would seem in the writer's opinion that there is a need for a local depository of instructional materials. This materials center would aid the teachers and students by providing various instructional materials when they are needed, thus not causing a delay in their use and reducing their effectiveness in the learning situation.

The center will have available additional equipment that can be used when needed. This equipment will be continually serviced and thus reduce the delay that may be caused by a faulty machine in the classroom that is inspected haphazardly.

The co-ordinator of the materials center will be a valuable asset to the faculty. With his training and knowledge in the area of audio-visual materials and equipment, he can direct the teachers in their preparation and
use of instructional materials.

Finally, the central depository, although having a large initial cost, will save the district money through the co-ordination and production of instructional materials in one center. With a control over the funds needed for additional equipment and an inventory of all materials and equipment in the system, the co-ordinator can utilize funds for these expenditures much more advantageously than when handled by various personnel in the system.
CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

I. SUMMARY

The purpose of this study was (1) to give an overview of the instructional materials used in the West Des Moines Community School District, with an emphasis on what audio-visual materials were used and to what extent, (2) to determine what instructional materials have been provided and are currently maintained for use in the schools, (3) to determine what additional instructional materials are needed, and (4) to offer a plan for an instructional materials center in the school district.

Literature related to the needs and uses of instructional materials in a school system and to the development and function of an instructional materials center for a school system was reviewed. This review of literature appears in Chapter II.

The faculty and principals of the West Des Moines Community School System were surveyed by the use of a questionnaire to help determine the nature, the amount of use, and the need for instructional materials in the school system. The findings of this survey are presented in Chapter III.
The data received from the teachers and principals were analyzed in respect to what leading authorities in the field of audio-visual education recommend concerning needs and uses of instructional materials. The analysis of the data is given in Chapter IV.

II. CONCLUSIONS

Upon analyzing the data received from the faculty and principals in respect to the views of authorities in the field of audio-visual education, the following conclusions were reached:

1. The faculty of the West Des Moines Community Schools are not using to a great extent some of the audio-visual equipment in the system. The equipment least used are the overhead projector, opaque projector, tape recorder, and television set. This insufficient usage seems to be due to a lack of ability and skill on the part of some teachers in the operation of the equipment, to the unavailability of audio-visual materials for use with this equipment, and to the insufficient number of machines in proportion to the number of students needing the use of the equipment. It is important to note that the faculty is definitely interested in learning more about the uses of audio-visual
equipment and materials, as over eighty-six per cent indicated a desire to attend in-service training sessions for this purpose.

2. The majority of the instructional materials, which include all of the audio-visual equipment, in the West Des Moines School System have been purchased through budgeted school district funds. A few materials, such as records and filmstrips, have been given to the elementary schools by outside groups, such as P.T.A.'s, Mother's Clubs, etc. All of these instructional materials are kept in the separate buildings throughout the district, with most of them stored in the individual classrooms. Some of the individual schools have a room used for storage of their own audio-visual equipment, but no materials center as the one described earlier in the study. The teachers in the school system have access to a variety of instructional materials outside the school, especially from the Polk County Office of Education, located in Des Moines. However, with the great demand for these materials from all the suburban schools in Polk County, the West Des Moines teachers often find these materials are not available when they need them, or that they receive them too late to be of value in the learn-
ing situation.

3. Some of the schools in the West Des Moines School District are in need of more audio-visual equipment. One of the reasons that some pieces of audio-visual equipment are not used more often is because there are not enough machines to accommodate all the students who could benefit from them. More instructional aids are needed for the teachers in the classroom. When only fifty-six per cent can affirm that instructional aids are always available when they are needed, one can conclude there is a need for more of these materials. The school principals are cognizant of the need for more instructional materials as they have continued to increase their budget for audio-visual equipment and materials. But, even with this increase, the $1.60 currently spent per student per year for audio-visual materials is less than half the amount recommended by authorities in the field.

4. In view of the existing audio-visual program in the West Des Moines Community School District, there is a need for a central depository of instructional materials in the district. This need is substantiated by the fact that seventy-two per cent of the faculty members and five of the six principals in
the school system voted yes to the question of establishing such a center.

III. RECOMMENDATIONS

It is the belief of the writer that the findings of this study have revealed the need for an improvement in the audio-visual program in the West Des Moines Community School District. This improvement could best be facilitated by the development of a central depository of instructional materials. The following recommendations, in the form of a plan for the development of an instructional materials center, are given to the Board of Directors of the West Des Moines Community School District in hope that such a depository may be established.

**Location of the center.** The first requisite necessary for the establishment of a materials center will be a central location. Of the three locations suggested by the faculty, Stilwell Junior High, Valley High School, and the Administration Office, the writer would suggest Stilwell Junior High. It offers a central geographical location in the district as well as being located on through transportation routes of the city.

**Design of the center.** The actual design and floor plan of the materials center will vary according to what
size room or rooms in which it is placed. Cypher and Cross, in a study for the Department of Audio-Visual Instruction of the National Education Association, suggested a minimum of 300-400 square feet for storage, handling, repair and distribution of audio-visual materials in a school of 600-1200 students. This does not include an administration area which should be an additional 200 square feet.¹

As the enrollment of the West Des Moines School District is currently 4,600 students and annually increasing, it would be conceivable to allow about 1200-1600 square feet for the materials center. This undoubtedly will mean the use of at least two regular classrooms to attain this much floor space.

The floor plan shown in Appendix E is given as a suggested arrangement for the various departments within the materials center. This does not include the school's own library, but should be located adjacent to it, if possible.

Contents of the center. The center contains carefully chosen instructional materials of many types. The scope of the resources available through such a center

should be limited only by the needs of those who make use of it. There may be cataloged in this center all the pamphlets, clippings, magazine articles, films, filmstrips, slides, maps, models, globes, flat pictures, community-resource files, microfilms, museum materials, records, radio and television files, and any other resources which may assist in the instructional and learning jobs to be done. The extra audio-visual equipment is also stored in this center. These pieces of equipment are kept in good repair and are delivered to a particular building whenever they are needed.

The writer wishes to point out that the extra machines for the planned materials center do not solve the problem, as indicated from the results of the survey, of the current lack of audio-visual equipment in the system. It is recommended that these pieces of equipment be purchased for the faculty for the next school year.

A curriculum library for the faculty and principals could also be placed in the materials center. Located in a lounge area, it would give the faculty a place to rest and discuss current topics in their respective areas.

The equipment necessary for the operation and functioning of the materials center will be a part of the permanent contents of the center. This equipment includes a dry mount press, copying machines, machines for making
transparencies, duplicating machines, splicing machines for films, filmstrips, and tapes, previewers for filmstrips and slides, and numerous tables and cabinets. When one realizes all of the equipment, materials, and work area needed for a functional materials center, it further emphasizes the need for plenty of floor space.

**How contents are to be determined.** Two underlying elements exist when considering how the contents of a materials center are to be determined. First, what materials are already present in the school system, and, second, what additional materials are needed. As was pointed out earlier in the study, it is important to know what materials are presently being used so that an excess of these materials are not purchased, or reproduced. The writer recommends that, if someone else is pursuing a similar study, the faculty members be asked to list the additional materials they need in the classroom. This, perhaps, would help in better determining the needs for a central depository.

The new materials should be obtained only when there is a definite need for them. The selection should be made by a committee of teachers, supervisors, and administrators, with the teacher playing the prime role in the selection. The selection should be based upon a criteria that is in line with the function and philosophy of the school. Quan-
tity should never overshadow quality.¹

Financing the center. Probably the largest obstacle to hurdle in starting a central depository of instructional materials is the initial cost. However, when one realizes that a quality education program for the students of a school district is provided basically through the use of good instructional materials, one can see that the cost is worthwhile. The materials center is a growing investment, becoming larger and of better service to the teachers and students every year.

It is imperative that a budget be prepared in the initial stages of planning for the materials center. The items for the budget should first consist of immediate needs of equipment and materials for the school system; second, the permanent contents of the materials center; and third, the staff personnel necessary to operate the materials center. Garow and White offered the following budget breakdown for the materials center:

I. Salaries and Wages
   A. Certificated
      1. Administration
      2. Operation
      3. Production
   B. Non-Certificated
      1. Operation
      2. Production

II. Operating Expenses
A. Office
B. Cataloging
C. Transportation
   1. Distribution of material and equipment
   2. Of supervisory personnel
D. Maintenance
   1. Equipment
   2. Materials
E. Fixed Charges
   1. Utilities
   2. Insurance
F. Instructional Materials--new and replacement

III. Capital Outlay
A. Equipment (General)
   1. Office
   2. Photo laboratory
   3. Shop
   4. Transportation
   5. Storage facilities
B. Audio-Visual Equipment--new and replacement
   films, projectors, etc.1

The necessary funds to meet the needs set forth in the budget are the next requirement in establishing the instructional materials center. The writer recommends that the $1.60 per-student-per-year now being spent for audio-visual materials be increased to approximately $5.00 per student for the first year. The capital outlay for general equipment and the salary for a co-ordinator could be provided with this money. In the following years, this amount of money per student could be adjusted to meet the co-ordinator's salary and the necessary operating expenses.

1Frank Garow and Joseph White, "How Should an Audio-Visual Department be Organized and Operated," Audio-Visual Administration, X (March, 1951), 17.
Administration of the center. The nature of a materials center and the service it renders is affected by the leadership and ability of the person who directs it. The Board of Directors should hire a co-ordinator for the materials center with the qualifications set forth by Wittich and Schuller.¹ The co-ordinator and the administration should select a staff to help carry out the services rendered by the materials center.

¹Wittich and Schuller, *op. cit.*, p. 18.
BIBLIOGRAPHY
BIBLIOGRAPHY

A. BOOKS


B. PUBLICATIONS OF THE GOVERNMENT, LEARNED SOCIETIES, AND OTHER ORGANIZATIONS


C. PERIODICALS


_______. "Media, Technology, and IMC Space Requirements," Audiovisual Instruction, X (February, 1965), 107-110.


D. UNPUBLISHED MATERIALS

APPENDIX A

LETTER TO TEACHERS CONCERNING MATERIALS SENT TO TEACHERS

WILSON BEVERLY DAVIS MEMORIAL SCHOOL DISTRICT

May 1, 19...

Dear Faculty Member,

I am conducting a study to determine the needs of the school for a central depository for teaching materials. My study is aimed at developing a plan for a central depository center for the West Des Moines School District. This central depository would contain teaching materials, such as books, maps, and other materials needed in the individual buildings. It could be used, for instance, by new teachers in the event of a teacher's illness or absence and by students who need to use the materials in other buildings.

I would appreciate it if you would take a few minutes of your time to read the questionnaire carefully and check each question, and also make any comments that you might have.

App. 1.

Thurs. 13, 1963

[Signature]

[Name]
Dear faculty member,

Enclosed is a questionnaire of a survey that I am conducting in regard to completing my thesis for a Master's Degree at Drake University. My study consists of developing a plan for a curriculum materials center for the West Des Moines School District. This central depository would contain teaching materials and equipment, but not those now needed in the individual buildings. It would contain, for instance, any extra projectors needed on occasion and duplicates of teacher-made materials that could be used in other buildings.

I would appreciate it if you would take a few minutes of your time to read the questionnaire carefully and check each question, and also make any comments that you might have.

When you have completed the questionnaire, would you please return it to your building principal, preferably by Friday, May 14.

Thank you for your cooperation.

Yours sincerely,

Bob N. Cage
Valley High School
A SURVEY OF AUDIO-VISUAL MATERIALS USED
BY THE CLASSROOM TEACHER

1. Name of your school ____________________________________________

2. Which of the following Audio-Visual materials do you use in your classroom and about how often? (Put an X in the appropriate blank below.)

<table>
<thead>
<tr>
<th>Material</th>
<th>Never</th>
<th>Seldom</th>
<th>Sometimes</th>
<th>Frequently</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 mm. projector</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filmstrip projector</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opaque projector</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Record player</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Television set</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tape recorder</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overhead projector</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blackboard</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maps</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Models</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. While in college, how many hours of audio-visual education did you receive? ________

4. Have you ever attended an audio-visual in-service training program? Yes ______ No ______

5. Would you attend an audio-visual in-service training program in the West Des Moines School District if it were made available to you? Yes ______ No ______

6. Are films, filmstrips, models, records, tapes, and audio-visual equipment always available for your use when you need them? Yes ______ No ______ Sometimes ______

7. Do you believe that a central depository of audio-visual
materials and equipment for the West Des Moines Community School District would help to facilitate having these teaching aids when you need them? Yes ___ No ___

8. If a central depository of audio-visual materials for our school system were established, in what building do you believe it would best serve our district? ____________

Comments:
Dear Principal,

For completion of my Master's Degree, I have selected for my thesis the problem of developing a plan for an instructional materials center in the West Des Moines Community School District.

The purpose of the materials center would be to provide a central depository of instructional materials for use of teachers and students in our district. It would not take equipment and materials now in daily use away from the individual schools, but would help supplement these aids with audio-visual materials that are not being used to their maximum. The materials center would be a service unit as well, producing and organizing instructional materials for the faculty.

A questionnaire and self-addressed stamped envelope are enclosed. Would you please fill out the questionnaire and return it to me.

Thank you for your cooperation.

Yours sincerely,

Bob N. Cage
Valley High School
A SURVEY OF AUDIO-VISUAL MATERIALS MAINTAINED
BY SCHOOL PRINCIPALS

1. Name of your school ____________________________

2. Number of teachers employed in your school ______

3. Who is in charge of your audio-visual equipment?
   Teacher (part-time) _____
   Principal _____
   Other _____

4. From what source do you receive your audio-visual funds?
   Budget _____
   School programs _____
   Outside groups (PTA, etc.) _____
   Other _____

5. Averaging the last three years, how much money per year did you spend in regard to:
   Audio-visual materials ______
   Audio-visual equipment ______

6. Have you increased your budget for audio-visual materials and equipment for this next school year? Yes ___ No ___

7. Check sources from which you receive your audio-visual materials:
   State Universities _____
   County Office _____
   School-owned materials _____
   Free sources _____
   Other _____

8. Would you be interested in seeing a central depository of instructional materials provided in the school district? Yes ___ No ___

9. If your answer to question eight is affirmative, in what location (building) do you believe the center should be located? __________________
10. Would you please indicate in the following list the amount of each type of equipment and materials you have in your building?

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 mm. projectors</td>
<td></td>
</tr>
<tr>
<td>Overhead projectors</td>
<td></td>
</tr>
<tr>
<td>Opaque projectors</td>
<td></td>
</tr>
<tr>
<td>Tape recorders</td>
<td></td>
</tr>
<tr>
<td>Record players</td>
<td></td>
</tr>
<tr>
<td>Filmstrip projectors</td>
<td></td>
</tr>
<tr>
<td>Television sets</td>
<td></td>
</tr>
<tr>
<td>Rear-projection units</td>
<td></td>
</tr>
<tr>
<td>Tri-pod screens</td>
<td></td>
</tr>
<tr>
<td>Filmstrips</td>
<td></td>
</tr>
<tr>
<td>Slides</td>
<td></td>
</tr>
<tr>
<td>Previewers</td>
<td></td>
</tr>
<tr>
<td>Dry mount presses</td>
<td></td>
</tr>
<tr>
<td>Microprojectors</td>
<td></td>
</tr>
<tr>
<td>Records</td>
<td></td>
</tr>
</tbody>
</table>

11. What additional materials and equipment are you adding to your audio-visual inventory for next year? (Please list and give how many.)
<table>
<thead>
<tr>
<th>TABLE IX</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUDIO-VISUAL EQUIPMENT AND MATERIALS OWNED BY WEST DES MOINES COMMUNITY SCHOOL DISTRICT</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>16 mm. projector</th>
<th>Overhead projector</th>
<th>Opaque projector</th>
<th>Tape recorder</th>
<th>Record player</th>
<th>Filmstrip projector</th>
<th>Television sets</th>
<th>Rear-projection unit</th>
<th>Filmstrips</th>
<th>Slides</th>
<th>Previewers</th>
<th>DRY mount press</th>
<th>Microprojector</th>
<th>Records</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clive Elementary</td>
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<td>Fairmeadows Elementary</td>
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## APPENDIX D

### AUDIO-VISUAL EQUIPMENT REQUIREMENTS

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 mm. sound projectors</td>
<td>1 per 300 students or major portion thereof; at least 1 per each building</td>
</tr>
<tr>
<td>Filmstrip and 2 x 2 projectors</td>
<td>1 per 200 students or major fraction; at least 1 per building</td>
</tr>
<tr>
<td>Opaque projector</td>
<td>1 per building</td>
</tr>
<tr>
<td>Record players (3-speed)</td>
<td>1 per kindergarten class; 1 per 5 other classrooms; at least 2 per building</td>
</tr>
<tr>
<td>Tape recorders</td>
<td>1 per 300 students or major fraction; at least 1 per building</td>
</tr>
<tr>
<td>Television receivers</td>
<td>1 per building</td>
</tr>
<tr>
<td>Overhead projectors (7 x 7 or larger)</td>
<td>1 per building</td>
</tr>
<tr>
<td>Screens (square - 60 x 60 or larger)</td>
<td>1 per each 2 classrooms</td>
</tr>
</tbody>
</table>
APPENDIX E

SUGGESTED FLOOR PLAN

<table>
<thead>
<tr>
<th>Lounge</th>
</tr>
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<tbody>
<tr>
<td>Curriculum Lab.</td>
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<tr>
<td></td>
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<tr>
<td>Administration</td>
</tr>
<tr>
<td>Office</td>
</tr>
<tr>
<td>Conference</td>
</tr>
<tr>
<td>Room</td>
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<tr>
<td></td>
</tr>
<tr>
<td>Teachers' Work Room</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Supplies and Reference</td>
</tr>
<tr>
<td>Books</td>
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<td></td>
</tr>
<tr>
<td>Audition Room</td>
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<td>Work Room</td>
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<tr>
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</tr>
<tr>
<td>Film Storage</td>
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