THE UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

AN EVALUATION OF PRE-SERVICE AUDIO-VISUAL EXPERIENCES IN SELECTED OKLAHOMA TEACHER EDUCATION INSTITUTIONS BASED ON REACTIONS OF TEACHERS AND SUPERVISORS

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for the

degree of

DOCTOR OF EDUCATION

BY

HARRY PAUL ZIMMERMAN

Norman, Oklahoma

1958

AN EVALUATION OF PRE-SERVICE AUDIO-VISUAL EXPERIENCES IN SELECTED OKLAHOMA TEACHER EDUCATION INSTITUTIONS BASED ON REACTIONS OF TEACHERS AND SUPERVISORS

APPROVED BY

DISSERTATION COMMITTEE

ACKNOWLEDGEMENT

Acknowledgements are gratefully accorded Dr. William R. Fulton and Dr. Gail Shannon who have acted as advisors during the research for this study and the writing of the thesis. Both have given liberally of their time and their suggestions and counsel are deeply appreciated. In addition, appreciation is expressed to Dr. W. B. Ragan, Dr. Glenn R. Snider, and Dr. Claude Kelley for their counsel as members of the committee.

The writer is grateful to the members of the jury who gave unselfishly of their time; to college teachers who filled in questionnaires; and to the classroom teachers who provided data for the investigation. Without their cooperation this study would not have been possible.

TABLE OF CONTENTS

LIST OF TABLES

AN EVALUATION OF PRE-SERVICE AUDIO-VISUAL EXPERIENCES IN SELECTED OKLAHOMA TEACHER EDUCATION INSTITUTIONS BASED ON REACTIONS OF TEACHERS AND SUPERVISORS

CHAPTER I

INTRODUCTION

This study was an evaluation designed to determine the extent to which Oklahoma state supported institutions of higher learning offered opportunities enabling selected graduates to acquire audio-visual knowledges and competencies thought to be needed by beginning teachers, and to ascertain how well these graduates possessed the needed knowledges and competencies.

Background and Need for the Study

The social and economic changes of the twentieth century have had a profound impact upon school curriculum and methodology. As a result, greater professional responsibilities have been placed on the classroom teacher, one of which is the ability to integrate into a learning situation, carefully selected audio-visual materials of instruction.

Institutions of higher learning involved in teacher

education were quick to recognize their responsibilities for providing opportunities which would enable prospective teachers to become competent in the use of audio-visual materials, and as early as 1922 a few scattered courses were offered to prepare teachers to use these media of instruction.[1] The trend toward professional preparation of teachers in audio-visual education continued to develop over the next two decades. This trend was even more pronounced following World War II, as the value of audio-visual materials as a means of improving the efficiency of classroom instruction came to be more generally recognized.

The state of Oklahoma was no exception to the demands for renewed emphasis upon audio-visual education. In the spring of 1947 Senate Bill No. 121 was passed. The main provisions of the statute are listed in the preface of the bill:

> An act relating to audio-visual education; providing for a program thereof and for its administration; establishing a division of audio-visual education of the State Department; providing for a state coordinator of audio-visual education and prescribing his powers, duties and functions; providing for a state depository for motion picture films, and regional and local film libraries; making an appropriation to carry out provisions of act; and declaring an emergency.[2]

The total state audio-visual program was greatly facilitated by this act. In 1947, there were only six county

---

[1]James S. Kinder, Audio-Visual Materials and Teaching (New York: American Book Co., 1950), pp. 15-16.

[2]Oklahoma Statutes, Official Edition, Cumulative Supplement (1947), p. 633.

film libraries in the state; in 1951, there were fifty county film libraries. The regional film library inventory in 1947 consisted of 2,000 films; and in 1952, the inventory had increased to 6,483 films. The inventory of films in county and local school libraries shows an even greater rate of development. In 1948, the inventory showed 2,300 films while in 1952 it was 10,836. The rapid rate of development is further indicated in the records of film used by schools as reflected in the average booking on each film from the regional film libraries. In 1949, the average film booking was eight and four-tenths; and in 1952, the average booking was ten and nine-tenths.[1]

One facet of the program of particular interest to this study was that of teacher preparation.

> The training of teachers in the use of audio-visual materials has played a significant role in the development of the Oklahoma audio-visual program. Eleven colleges and universities now offer one or more courses in audio-visual education [1953]. The number of teachers completing audio-visual courses in pre-service and in-service education during this five-year period, [1947-1953] . . . totaled 7,103.[2]

In view of the above information it appeared that considerable time and effort was invested in the promotion and development of state-wide audio-visual activities and

---

[1]State Department of Education, Report of Division of Audio-Visual Education to State Board of Education on Regional Film Libraries (Oklahoma City, 1947-1953).

[2]William R. Fulton, "An Evaluation of Selected Aspects of the Organization and Administration of Oklahoma'a Audio-Visual Program" (unpublished Doctor's dissertation, Oklahoma Agricultural and Mechanical College, 1955), p. 28.

that teacher education was an important facet of this development. However, the related literature showed a lack of research from which to draw conclusions regarding the extent to which the full potential of audio-visual materials was being realized in the classroom. Consequently, it was felt that in the interest of improving the use of audio-visual materials in the classroom, an evaluative study of the existing Oklahoma programs designed to prepare teachers to utilize materials of instruction was needed to provide data pertinent to the following questions: What audio-visual competencies do teachers need when they enter the teaching profession? To what extent are needed experiences in audio-visual education offered in the colleges and universities of Oklahoma? How well do graduates from these colleges and universities possess audio-visual knowledge and competencies?

The Problem

The problem of this investigation was to determine the strong and weak experiences provided pre-service teacher education students, for the purpose of developing audio-visual knowledge and competency, by selected colleges and universities in Oklahoma.

The specific purposes for the study were: (1) to determine those knowledges and competencies beginning teachers needed; (2) to determine the extent to which needed experiences were offered in the pre-service curriculum of selected

colleges and universities; (3) to determine to what extent 1956 teacher education graduates possessed needed audio-visual knowledges and competencies; and (4) to provide a basis upon which the institutions could reassess their curricular offerings in audio-visual education.

Delimitation of the Problem

This study was based upon data received from responses of: (1) selected jury members; (2) representatives of Oklahoma state supported institutions of higher learning offering teacher education curricula; and (3) 1956 graduates who were engaged in classroom teaching in Oklahoma schools which were providing scheduled time for audio-visual coordinators to perform their functions, physical facilities for utilizing audio-visual materials, and funds for the purchase and rentals of materials. The schools falling in this category were chosen from the report of self-evaluation applications for school accrediting, 1955-1956.

Definition of Terms

"Audio-Visual Education" refers to the carefully planned and integrated use of a wide range of materials in teaching from kindergarten through college; materials such as: objects, graphs, filmstrips, flat pictures, sound motion pictures, and community resources.

"Experience" has reference to actual observations, demonstrations, lectures or laboratory exercises. "Experience"

is an opportunity for acquiring audio-visual knowledges and competencies.

"Jury" refers to a group of persons who are in public school administrative and supervisory positions and who meet prescribed criteria of competency in passing judgment on what pre-service audio-visual experiences are needed by beginning teachers. For example: Assistant superintendents, curriculum directors, general supervisors, specific subject matter supervisors, helping teachers, and audio-visual coordinators.

"Competency" has reference to the necessary skills for proper utilization of audio-visual materials.

"Evaluation" has reference to appraisal of teacher education programs in offering opportunities to acquire needed audio-visual knowledges and competencies in terms of strengths and weaknesses.

Method and Procedure

The normative survey method and appraisal technique were used in the study. Good, et al., write that normative survey research is "concerned with ascertaining the conditions which prevail in a group of cases chosen for study, and is essentially a method of quantitative description of the general characteristics of the group."[1] They further write that "appraisal is the procedure by which we secure

---

[1]C. V. Good, A. S. Barr, and D. E. Scates, The Methodology of Educational Research (New York: Appleton-Century-Crofts, Inc., 1941), p. 286.

and make overt characteristically variable reactions."[1] In order to make an appraisal of conditions with which this study was concerned it was necessary to employ five steps: (1) a jury was selected to assist in the formulation of criteria suitable for use in the appraisal (see Chapter III for a detailed explanation of the selection of the jurors and formulation of criteria); (2) a questionnaire consisting of possible criteria, derived from the literature, was prepared and used as an instrument to secure rated responses from members of the jury; (3) a questionnaire was prepared and used to secure information relative to the extent to which opportunities were provided by colleges and universities which enabled teacher education students to acquire the needed knowledges and competencies; (4) a questionnaire, based on the formulated criteria, was used to obtain data from selected graduates regarding the extent to which they possessed needed knowledges and competencies; and (5) an evaluative judgment was made on the knowledges and competencies thought to be needed by beginning teachers, based on an analysis of data obtained from the colleges and universities and the graduates in relation to the criteria.

Questionnaire to Colleges and Universities

The purpose of this instrument was to obtain data which would give an indication of the extent to which

---

[1] Ibid., p. 412.

Oklahoma state supported colleges and universities provided opportunities which would enable pre-service teacher education students to acquire "needed" audio-visual knowledges and competencies. The criteria established from the responses of a jury were used as a basis for constructing the questionnaire.

Items were grouped similarly to those in the jury questionnaire except some items were delineated in order to obtain more comprehensive data on the opportunities colleges and universities were providing. Each respondent had an opportunity to mark "yes" or "no" after each item presented, and in addition there was opportunity to indicate college courses which provided the planned learning opportunities for gaining the knowledge or competency.

Effort was made to increase the reliability of this questionnaire by preparing a preliminary form and submitting it to selected faculty members. They were asked to criticize the format and content, in the light of its intended use. This resulted in rewording of some statements and minor changes in organization of the questionnaire. (See Appendix C.)

Questionnaire to 1956 Teacher Education Graduates

The instrument considered here was designed to obtain data from graduates of the state supported institutions of higher learning in Oklahoma. The items included were grouped

much as they were in the questionnaire sent to the colleges and universities.

The respondents were asked to check one of three rating categories for each item: "adequate knowledge or competency"; "limited knowledge or competency"; or "no knowledge or competency." Following each main sub-group of items the respondents were requested to indicate the pre-service course or courses which they felt gave them the understanding necessary for gaining the knowledges or competencies rated as "adequate" and "limited."

The reliability of the questionnaire was increased through trial testing and through consultations and interviews with faculty members, selected student teachers, and graduates. As a result, some items were delineated in order to gain more comprehensive data, some were re-worded to help insure comprehension on the part of the respondent, and minor change was made in the format of the instrument.

The Jury Population

Questionnaires were sent to thirty-eight selected jurors; thirty-six, or 95 per cent, responded. A more detailed accounting of the jury population will be found in Chapter III.

College and University Population

This population was composed of the ten state supported colleges and universities of Oklahoma. Questionnaires

were sent to each of these institutions, and all of them, or 100 per cent, filled out and returned the questionnaire.

The Graduate Population

The process of isolating the graduate population involved three steps: (1) obtaining from institutions a list of 1956 spring and summer graduates who were granted a Bachelor's degree and certified to teach in Oklahoma; (2) determining which of these were engaged in classroom teaching in Oklahoma at the time the study was undertaken; and (3) securing their addresses. Information concerning teaching status and location was obtained through school directories, college placement bureaus, and files of the Oklahoma Teacher Retirement System.

The schools in which these graduates were teaching were then screened against the Oklahoma State Department of Education self-evaluation reports for accrediting schools to determine those in which some apparent effort was being made to provide opportunities for teachers to utilize audio-visual materials and techniques. As a result of this screening, 335 teachers were selected to serve as the population for this phase of the study. Questionnaires were sent to each of these teachers and of this number, 43 were returned unclaimed. Of the 292 remaining teachers, 216 of them returned usable forms. This represented a 74 per cent return.

Table 1 shows a breakdown of the above population according to teaching fields. The total population included

89 elementary teachers and 127 secondary teachers. More intermediate teachers responded than did primary teachers, while in the secondary group more language arts teachers responded than any other subject-matter group.

TABLE 1

NUMBER AND PERCENTAGE OF 216 GRADUATES BY TEACHING FIELDS

Teaching Field	Number	Per Cent
Elementary		
Primary	37	17
Intermediate	52	24
Secondary		
Commerce	11	5
Language Arts	29	14
Mathematics and Science	27	13
Social Studies	25	11
Physical Education	13	6
Vocational	22	10

A further indication of the representativeness of the responses is shown in Table 2. This table indicates the percentage of the total population graduated from each institution. Institution 1 was represented by 4 per cent of the total population, while Institution 9 was represented by 22 per cent of the total population, a range of 18 per cent. However, it should be noted that the majority of the institutions do not vary more than 7 per cent.

An analysis was made also in regard to the location of schools where teachers were employed in classroom work.

TABLE 2

NUMBER AND PERCENTAGE OF 216 GRADUATES FROM EACH STATE SUPPORTED INSTITUTION OF HIGHER LEARNING

Institution	Number	Per Cent
Institution 1	9	4
Institution 2	21	10
Institution 3	31	14
Institution 4	20	9
Institution 5	21	10
Institution 6	10	5
Institution 7	13	6
Institution 8	28	13
Institution 9	47	22
Institution 10	16	7

This analysis showed that 53, or 69 per cent, of the counties in Oklahoma were represented by the population. It was also apparent that those counties not represented did not cluster around any given section of the state.

Summary

This chapter has presented a description of the problem and purposes of the investigation. It included a definition of terms, a description of the process involved in the construction of questionnaires, and an analysis of the population.

The problem of the study was to determine strengths and weaknesses of pre-service audio-visual experiences available to teacher education students in Oklahoma state supported institutions of higher learning.

The study had three specific purposes: (1) to develop criteria for establishing the extent to which audio-visual experiences are offered teacher education students in the selected colleges; (2) to determine the strengths and weaknesses of the pre-service opportunities to achieve audio-visual competency in selected Oklahoma institutions of higher learning; and (3) to provide a basis upon which the colleges and universities involved could reassess their curricular offerings in audio-visual education. The questionnaire method was used in the investigation.

The remaining chapters were concerned with: (1) review of related literature; (2) development of the criteria; (3) evaluation of pre-service opportunities; and (4) summary, conclusions, and recommendations.

CHAPTER II

A REVIEW OF RELATED LITERATURE

The following studies are presented in chronological order. Purposes of the studies and pertinent conclusions are included in the review.

DeBernardis and Brown made a study of teacher skills and knowledges necessary for the use of audio-visual materials. The data indicated that teachers on the whole were interested in learning to operate the various types of equipment. However, there seemed to be a tendency on the part of teachers to rate low those types of equipment with which they were unfamiliar.

The section on utilization rated higher while the section on production received lower ratings. Evidence indicated that teachers were interested in mounting and classifying pictures, preparing maps, charts, exhibits, and dioramas. The study further indicated that teachers had an interest in knowing how to improve facilities for the use of materials.[1]

---

[1]Amo DeBernardis and James W. Brown, "Study of Teacher Skills and Knowledge Necessary for the Use of Audio-Visual Aids," Elementary School Journal, XLVI (June, 1946), p. 550.

A comprehensive survey of teacher training in audio-visual education was conducted by de Kieffer. His study involved 152 four-year institutions of higher learning in the United States.

Some of his conclusions, which seem pertinent, indicated over ninety per cent of the institutions included courses with units in utilization, selection and evaluation of materials, and operation of equipment. Eighty-seven per cent offered units on history and philosophy of audio-visual education and seventy-eight per cent offered units on administration of audio-visual programs. Other units included field trips, classroom observation, psychology of perception, cataloging of materials, and fundamentals of optics. The study concluded that teacher preparation is a responsibility of the four-year institutions of higher learning and would in all possibility remain so.[1]

Murphy conducted research designed to develop a program of teacher education based on the concept of integrating units into related topics in regular courses of the professional sequence at Stanford University. Units of instruction were built around the following knowledges and competencies: (1) an understanding of the literature in the field of audio-visual education; (2) knowledge of sources of audio-visual materials; (3) selection of materials for specific needs;

---

[1]Robert E. de Kieffer, "The Status of Teacher Training in Audio-Visual Education in the Forty-Eight States" (unpublished Doctor's dissertation, University of Iowa, 1948).

(4) utilization of material in teaching; (5) ability to use and cooperate with audio-visual service units; and (6) operation of audio-visual equipment. There was indication of a minimum development in selection, utilizing and evaluating materials as well as the ability to cooperate effectively with audio-visual service agencies. The effectiveness of using teaching units varied with the interest of the instructor and one of the greatest weaknesses, as far as activities and methods were concerned, was the lack of laboratory and preview facilities.[1]

Iverson designed a study for the purpose of establishing a preliminary definition of competencies. The competencies identified by Iverson were delineated from the California State Department reports, the literature in the field,and the Stanford general factors in teaching competency. The final statement was validated against interviews with administrators of audio-visual programs and against detailed observation of classroom teachers using audio-visual materials.

The conclusions of the study suggested that, on the whole, the competencies were provided with significant validating data. However, it was observed that a number of administrators indicated limited support of some of the stated

---

[1]Joseph B. Murphy, "A Program of Teacher Education in Audio-Visual Education" (unpublished Doctor's dissertation, Stanford University, 1949).

competencies.[1]

Hite conducted a study on teacher competency in audio-visual education. The purpose of the study was to discover how effective teacher training had been in audio-visual education in Washington State between the period 1937-1947. It was found that all organized training experiences were significant in stimulating teachers to use audio-visual materials. The course in audio-visual education, offered either in residence or by extension, seemed to be the most effective single training device. However, it was found that a combination of experiences were more effective. Further, it was pointed out that the amount of equipment did not determine the use of these materials. The grade and subject taught, and whether the teacher was trained for elementary or secondary school work were important factors. The elementary and primary grade teachers far out-ranked other groups in their use of these materials.[2]

White made an evaluation of the program of the University of Wisconsin School of Education for developing competency in the use of certain selected audio-visual methods. The study was to determine how effectively the University of

---

[1]William J. Iverson, "A Definition of Teaching Competencies with Audio-Visual Materials" (unpublished Doctor's dissertation, Stanford University, 1950).

[2]Floyd H. Hite, "An Evaluation of Teacher Training Activities in Audio-Visual Education in the State of Washington" (unpublished Doctor's dissertation, Washington State University, 1951).

Wisconsin School of Education prepared its graduates to use certain selected audio-visual media of instruction.

Some of the conclusions pertinent to this study were: (1) teachers felt that their pre-service preparation had given them the desire to use audio-visual methods of teaching but had not provided the competencies necessary to use them; (2) as a group, teachers did not use all of the audio-visual methods and materials at their disposal; (3) teachers who did use audio-visual methods did not function at the highest level of competency; and (4) supervisors believed that beginning teachers should be fully prepared to use audio-visual methods when they leave college.[1]

Gramlich conducted a status study of college audio-visual programs as they related to the pre-service preparation of teachers in the area of audio-visual education. Three sources of data were used: (1) audio-visual directors; (2) director of teacher education; and (3) college teachers. The study included Oklahoma, Texas, and Arkansas. Data were gathered by questionnaire, interview, and direct observation.

Conclusions reached in regard to the pre-service professional preparation of teachers indicated that the burden of responsibility for training teachers in audio-visual education lies with professional educators and that the pre-

---

[1]F. A. White, "An Evaluation of the Program of the University of Wisconsin School of Education for Giving Competency in the Use of Certain Selected Audio-Visual Methods" (unpublished Doctor's dissertation, University of Wisconsin, 1952).

service experiences should be broad-based. Evidence indicated that student teaching programs should provide very good opportunities for application of technique. A third contributor to pre-service preparation of teachers in the area of audio-visual education is effective use by college instructors.[1]

Fulton wrote that there is agreement on four general competencies for proper utilization of materials: (1) selection and evaluation of materials; (2) proper utilization; (3) production of simple materials; and (4) preparation and use of equipment. He further states that in addition to the above competencies, a prospective teacher should be able to: (1) participate in an economical and systematic plan for an audio-visual program; (2) have an understanding of the place of audio-visual experiences in the learning process; (3) appreciate the advantages of a wide range of instructional materials; (4) have an inclination to visualize and vitalize subject matter; and (5) be sensitive to the impact of mass media on society.[2]

Summary

The review of literature cited in this chapter shows

---

[1]Jay J. Gramlich, "The Status of Audio-Visual Programs in Selected Four-Year Institutions of Higher Learning as They Relate to the Preparation of Pre-Service Teachers" (unpublished Doctor's dissertation, University of Oklahoma, 1954).

[2]William R. Fulton, "Teacher Education; Our Best Investment," Audio-Visual Instruction, I (December, 1956), p. 210.

that a number of research inquiries and papers have been written which deal directly or indirectly with the problem of pre-service preparation of teachers in the area of audio-visual education. The studies reported in the literature were grouped under four distinct classifications: (1) status studies; (2) statements of desirable audio-visual knowledges and competencies; (3) methods of providing pre-service experiences; and (4) evaluation of specific programs of pre-service preparation.

The pertinent conclusions from these studies were: (1) there have been preliminary definitions of certain knowledges and competencies needed in order to assure proper use of audio-visual materials; (2) colleges and universities involved in professional preparation of teachers have a responsibility of providing experiences enabling all teachers to become competent in utilizing audio-visual materials; and (3) there is evidence to support the postulate that teachers fail to function at the highest instructional level for lack of knowledge and competency in the use of audio-visual materials.

The literature seems to support the thesis that more study is needed which will point up knowledges and competencies needed by beginning teachers and which will evaluate the effectiveness of pre-service programs designed to provide prospective teachers with these knowledges and competencies.

CHAPTER III

DEVELOPMENT OF CRITERIA

Selection of the Jury

The first step in the development of the criteria by which to evaluate pre-service audio-visual experiences offered teacher education students in selected colleges and universities in Oklahoma was to select a jury of professional people who were qualified to place judgment on the importance of audio-visual knowledges and competencies for beginning teachers. To obtain authoritative judgment, it seemed more desirable to use selected personnel for the jury than to attempt a representative sampling.

In order to increase the chances of getting a jury qualified to render authoritative judgments, the following criteria were set up to govern the selection of each jury member:

1. Each juror must hold a position indicative of professional responsibilities.
2. Each juror should possess an intangible quality which can be described generally as functional success.

In addition to the above general criteria, certain more specific points were considered as requisite for juror

selection. They were:

3. Advancement in the profession to a supervisory position in public school work.

4. Direct or indirect involvement with classroom teachers for the improvement of instruction.

5. Professional knowledge and understanding of audio-visual materials in education.

6. Professional recognition of outstanding contribution to improvement of classroom instruction.

The process of forming a jury for this study required listing potential members and screening their professional qualifications in terms of the standards established for jury selection. This list was composed of: (1) persons recognized in educational literature as having made noteworthy contributions to classroom instruction through wise use of audio-visual teaching materials; (2) persons recommended by educators of wide acquaintance with state, regional, and national organizations active in promotion of better teaching; and (3) persons known by the writer to be doing excellent work as instructional supervisors.

The original list of persons thought to be competent in making the type of judgment necessary for the study numbered forty-six. From this group, thirty-eight were designated to serve as a jury. The names are listed in Appendix A.

Questionnaires

The first step in constructing the questionnaire for

gathering data by which criteria could be established was to make a list of audio-visual knowledges and competencies which were assumed to be needed by teachers. This list was developed through extensive study of the literature--particularly professional organization reports, dissertations, and committee actions dealing with pre-service preparation of teachers in the area of audio-visual education. These sources are listed in the Bibliography.

No single list of knowledges and competencies was found in the literature to serve as criteria for evaluating the pre-service experiences offered teacher education students in Oklahoma. It was felt that the existing lists represented rather biased opinions of different groups, many of whom did not meet the standards set up for the selection of jurors for this study.

The knowledges and competencies found in the literature were grouped into four general categories: (1) background knowledges in audio-visual education; (2) selection and evaluation of audio-visual materials; (3) utilization of audio-visual materials; and (4) production of materials. The tentative questionnaire was submitted to impartial University faculty members, state supervisors of audio-visual instruction, and to three individuals who possessed professional status comparable to that required of jurors. Each person was asked to evaluate the format and content of the instrument. This resulted in the elimination of some items,

addition of other items, rewording of certain statements, and minor change in organization of the instrument.

The revised questionnaire consisted of sixty-seven statements grouped under two main headings: (1) knowledges and (2) competencies. There were seven sub-sections treated under these two divisions: (1) knowledge of physical characteristics of audio-visual materials and equipment, (2) knowledge of basic principles underlying use of audio-visual materials, (3) knowledge of educational value of different kinds of audio-visual teaching materials, (4) competency in operating audio-visual equipment, (5) competency in maintenance of audio-visual equipment, (6) competency in production of audio-visual materials, and (7) competency in utilization practices. In addition, there were statements under each of the seven sub-sections including an open-end item to encourage respondents to suggest other needed knowledges and competencies.

The questionnaire included significant characteristics necessary for evaluating the pre-service audio-visual opportunities offered teacher education students in the selected Oklahoma colleges and universities.

For the purpose of obtaining judgment from members of the jury, a scale was devised consisting of five units: (1) most important, (2) considerable importance, (3) average importance, (4) little importance, and (5) no importance.

Treatment of Data

In order to evaluate the jury responses to each item of the questionnaire it seemed best to use the statistical approach involving a central tendency.

Edwards points out that

> . . . if the distribution departs very much from the normal form so that scores are piled up at one end or the other of the scale, then another measure of central tendency may be used. . . . This measure of central tendency is called the median and is defined as that point in a distribution of measurement above which and below which 50 per cent of the measurements lie.[1]

A close examination of the data indicated that the majority of scores on the scale under consideration were skewed. Thus, it appeared the median was the most appropriate measure of central tendency for making apparent the combined reactions to each characteristic.

In order to derive a median score, each category in the questionnaire was assigned a value as follows:

4.5 to 5.4 - most important
3.5 to 4.4 - considerable importance
2.5 to 3.4 - average importance
1.5 to 2.4 - little importance
.5 to 1.4 - no importance

The following formula was used in calculating the median score for each item:[2]

$$Mdn = l + \left(\frac{\frac{N}{2} - \Sigma f_o}{f_w} \right) i$$

---

[1]Allen L. Edwards, Statistical Analysis (New York: Rinehart and Company, Inc., 1955), p. 41.

[2]Ibid., p. 44.

Where:

Mdn = the median
l = the lower limit of the interval containing the median
N = the total number of scores
f_o = the sum of the frequencies or numbers of scores up to the interval containing the median
$\sum f_w$ = the frequency or number of scores within the interval containing the median
i = the size or range of the interval

An example of the process for assigning value to a given characteristic would be: Suppose that 26 of the respondents checked category 1; 8 checked category 2; 2 checked category 3; and no responses fell in categories 4 and 5. Substitute in the formula:

$$Mdn = 4.5 + \left(\frac{18 - 10}{26}\right)1$$

$$Mdn = 4.8$$

Therefore, this characteristic would be considered "most important."

Instrument Reliability

Since data received from the jury questionnaire were used as a basis for ranking needed knowledges and competencies, it seemed advisable to consider validity of individual responses to specific items. If the respondents were asked to rate the same question over and over again under similar conditions, how much variation would there be in their responses? It was felt, therefore, that if a reliability coefficient could be derived for each characteristic, it would add strength to the evaluation.

Stoffer, et al., point out that an individual's response to a dichotomous question is completely unreliable if in the series of repeated trials he would give one response half the time and the other response the other half of the time. If a person does have a tendency to pick one category over the other more than half the time, he is said to have reliability greater than zero. The same concepts hold for items with more than two categories.[1]

Stoffer, et al., write also that only a single trial is needed to provide information about what would happen if the universe of trials were to be performed.

> If we let a be the arithmetic mean of the P_i for the population of individuals, then we can deduce a minimum for a on the basis of only a single trial. Accordingly, if we define p to be the arithmetic mean of the reliability coefficients, R_i, we can also state a minimum for p on the basis of a single trial. The relationship between the average reliability coefficient, p, and the average modal probability, a, is as follows:
>
> $$p = \frac{m}{m - 1}\left(a - \frac{1}{m}\right)$$
>
> Where p = the reliability coefficient
> m = the number of categories on the scale
> a = the modal probability (highest frequency of responses in the distribution converted to percentage)[2]

For example, suppose an item with four categories: If 60 per cent of the people are in one of the categories,

---

[1]Samuel A. Stoffer, et al., Measurement and Prediction (Princeton, New Jersey: Princeton University Press, 1950), pp. 302-308.

[2]Ibid., p. 304.

then this is the modal category for the population; and the average modal probability for the individual in the universe of trials is at least .60. The reliability coefficient for the group, thus, has the following lower bound:

$$p = \frac{4}{3}\left(.60 - \frac{1}{4}\right) = .47$$

The average reliability coefficient for the group, thus, is "at least" .47. It may be perfect; it may be .90 or anything else down to .47, but it is not less than .47.[1]

Table 3 shows the reliability coefficient of jury responses. These scores represent the lower bounds of reliability; it could be higher than the indicated score but would never be lower.

The range between reliability coefficients calculated for jury responses to characteristics concerned with knowledge of audio-visual materials was .66. The lowest bound was .20 and was registered on three characteristics: (1) mechanisms of audio-visual equipment, (2) fundamentals of classroom acoustics, and (3) educational value of the 3¼" by 4" handmade lantern slide. The highest coefficient was .86 and was calculated on the characteristic concerned with the place of audio-visual materials in learning.

The range of response reliability within the group of characteristics concerned with competencies was .77. As indicated in Table 3, the lowest bound was .16 and the

---

[1] Ibid., p. 305.

TABLE 3

RELIABILITY COEFFICIENT OF RESPONSE VARIABILITY FOR EACH CHARACTERISTIC INCLUDED IN THE CRITERIA QUESTIONNAIRE

Characteristic	Reliability Coefficient
Preparing a class to use audio-visual materials	.93
Developing follow-up activities	.93
Using criteria in selection of teaching materials	.90
Evaluating use of audio-visual materials	.90
Place of audio-visual materials in learning	.86
Developing effective listening habits	.83
Best materials for a specific teaching purpose	.79
Educational value of graphic materials	.79
Educational value of Three-D materials	.69
Educational value of the chalkboard	.69
Arranging classrooms for best viewing and listening	.69
Different kinds of audio-visual equipment	.65
Developing resource units	.65
Organizing field trips and excursions	.59
Operation of the 16mm motion picture projector	.55
Operation of a combination filmstrip and 2" by 2" slide projector	.55
Giving classroom demonstrations	.55
Cleaning and oiling projection equipment	.48
Educational value of flat pictures	.46
Making a community survey	.46
Historical development of audio-visual movement	.45
Operation of the opaque projector	.41
Cleaning recording and cutting heads	.38
Developing and printing still pictures	.38
Operation of public address equipment	.34
Dramatization technique	.34
Mounting, filing, and classifying flat pictures	.34
Constructing models	.34
Preparing displays	.34
Preparing 2" by 2" handmade slides	.34
Producing photographic pictures	.34
Producing filmstrips	.34
Producing radio programs	.34
Operation of micro-projector	.30
Caring for chalkboard surface	.30
Producing duplicating stencils	.30
Producing motion pictures	.30

TABLE 3--Continued

Characteristic	Reliability Coefficient
Producing television programs	.30
Projection equipment optics	.28
Cost and sources of audio-visual equipment	.28
Light control techniques	.28
Methods of ventilation	.28
Operation of tachistoscope	.28
Splicing magnetic recorder tape	.28
Preparing feltboards and feltboard materials	.28
Screening children for seeing and hearing deficiencies	.28
Types of projection screens	.24
Research and reference materials	.24
Educational value of motion picture photographic technique	.24
Educational value of types of sound motion pictures	.24
Educational value of arts and crafts materials	.24
Operation of duplicating equipment	.24
Operation of the disc recorder and playback equipment	.24
Operation of the magnetic recorder equipment	.24
Mounting, filing, and classifying specimens and objects	.24
Production of maps, charts, and posters	.24
Fundamentals of classroom acoustics	.20
Educational value of 3¼" by 4" lantern slides	.20
Operation of the 3¼" by 4" lantern slide projector	.20
Changing lamps in projection equipment	.20
Cleaning and splicing 16mm film	.20
Preparing exhibits and dioramas	.20
Making recordings	.20
Mechanisms of audio-visual equipment	.20
Transferring pictures to a chalkboard	.16
Chalkboard drawing and lettering	.16
Preparing 3¼" by 4" handmade lantern slides	.16

highest was .93. The lower scores were registered on the characteristics dealing with chalkboard drawing and lettering, and the preparing of 3¼" by 4" handmade lantern slides; while the highest bound was concerned with preparing a class to use audio-visual materials.

Although a large range was suggested in both groups, the bulk of reliability coefficients fell in the upper 30 and 40 per cent. This might be interpreted as indicative of a fairly substantial lower bound reliability for the instrument as a whole.

Formulating the Criteria

The distribution of responses, median scores, and composite jury ratings were tabulated for the seven areas relating to knowledges and competencies in audio-visual education. The median score was used as the central tendency in arriving at composite jury judgment and was derived by assigning numerical values to categories indicating extent of importance. Criterion statements were then formulated from the composite jury ratings found in each table.

Information relating to basic knowledges is presented in tabular form as follows: Table 4, Knowledge of Physical Characteristics of Audio-Visual Materials and Processes; Table 5, Background Knowledges in Audio-Visual Education; and Table 6, Knowledge of the Educational Value of Audio-Visual Materials.

TABLE 4

KNOWLEDGE OF PHYSICAL CHARACTERISTICS OF AUDIO-VISUAL MATERIALS AND PROCESSES

Characteristics	Number Responding					Median Score	Composite Jury Ratings				
	1	2	3	4	5*		1	2	3	4	5*
Different kinds of audio-visual equipment	26	8	2	0	0	4.8	X				
Mechanisms of audio-visual equipment	6	13	12	5	0	4.3		X			
Projection equipment optics	4	5	8	14	5	2.4				X	
Cost and sources of audio-visual equipment	2	8	16	7	3	2.4				X	
Fundamentals of classroom acoustics	7	10	13	6	0	3.4			X		
Types of projection screens	7	11	14	4	0	2.5			X		
Light control techniques	15	9	10	2	0	4.0		X			
Method of ventilation	15	14	5	2	0	3.6		X			

*1 - Most important
2 - Considerable importance
3 - Some importance
4 - Little importance
5 - No importance

TABLE 5

BACKGROUND KNOWLEDGES IN AUDIO-VISUAL EDUCATION

Characteristics	Number Responding					Median Score	Composite Jury Ratings				
	1	2	3	4	5*		1	2	3	4	5*
Place of audio-visual materials in learning	32	4	0	0	0	4.9	X				
Best materials for a specific purpose	30	6	0	0	0	4.9	X				
Research and reference materials in audio-visual education	12	14	8	2	0	4.0		X			
Historical development of the audio-visual movement	0	5	20	8	3	2.9			X		

*1 - Most important
2 - Considerable importance
3 - Some importance
4 - Little importance
5 - No importance

TABLE 6

KNOWLEDGES CONCERNED WITH THE EDUCATIONAL VALUE OF AUDIO-VISUAL MATERIALS

Characteristics	Number Responding					Median Score	Composite Jury Ratings				
	1	2	3	4	5*		1	2	3	4	5*
Educational value of:											
three-D materials	27	6	3	0	0	4.7	X				
graphic materials	30	4	2	0	0	4.9	X				
3¼" by 4" lantern slides	10	13	7	5	1	3.9		X			
motion picture photographic technique	5	8	14	7	2	3.1			X		
types of sound motion pictures	14	11	9	2	0	4.1		X			
chalkboard	27	7	2	0	0	4.8		X			
flat pictures	20	13	3	0	0	4.6	X				
arts and crafts	10	7	14	4	1	3.4			X		

*1 - Most important
2 - Considerable importance
3 - Some importance
4 - Little importance
5 - No importance

Responses pertaining to competencies are presented in: Table 7, Competency in Operation of Audio-Visual Equipment; Table 8, Competency in Maintenance of Audio-Visual Equipment; Table 9, Competency in Utilization of Audio-Visual Materials; and Table 10, Competency in Production of Audio-Visual Materials.

As stated early in Chapter III, an open-end item was included under each main aspect to give the members of the jury a chance to add additional characteristics. Very few suggestions were made, and in no case was the same suggestion made by more than one juror.

A close examination of the stated suggestions indicated that each added suggestion was related to one or more of the characteristics already listed on the questionnaire. In every case the comment was simply a clarification of a characteristic already stated and, therefore, did not constitute additional items that should be included.

Statement of Criteria

The statements of criteria, found immediately following Table 10, are based on responses from the jury of experts to the audio-visual experience characteristics as shown in the last section. These are listed by sub-groups within the two major categories of knowledges and competencies. Each sub-group is ranked in order as determined by the judgment of the jury.

TABLE 7

CHARACTERISTICS CONCERNED WITH COMPETENCY IN OPERATION OF AUDIO-VISUAL EQUIPMENT

Characteristics	Number Responding					Median Score	Composite Jury Ratings				
	1	2	3	4	5*		1	2	3	4	5*
Operation of:											
16mm motion picture projector	23	10	3	0	0	4.7	X				
3¼" by 4" lantern slide projector	13	11	6	6	0	4.0		X			
combination 2" by 2" slide projector	23	10	3	0	0	4.7	X				
opaque projector	19	12	5	0	0	5.0	X				
duplicating equipment	14	10	8	1	3	4.1		X			
disc recorder and playback equipment	14	10	7	5	0	4.1		X			
magnetic recording equipment	20	9	6	1	0	4.6	X				
public address equipment	2	12	17	3	2	3.3			X		
micro projector	5	6	16	7	2	3.1			X		
tachistoscope	8	9	15	4	0	3.4			X		

*1 - Most important
2 - Considerable importance
3 - Some importance
4 - Little importance
5 - No importance

TABLE 8

CHARACTERISTICS CONCERNED WITH MAINTENANCE
OF AUDIO-VISUAL EQUIPMENT

Characteristics	Number Responding					Median Score	Composite Jury Ratings				
	1	2	3	4	5*		1	2	3	4	5*
Changing lamps in projection equipment	8	13	14	1	0	3.6		X			
Cleaning and oiling projection equipment	3	7	21	2	3	3.1			X		
Cleaning recording and cutting heads	1	3	18	8	6	2.7			X		
Cleaning and splicing 16mm film	2	6	13	10	5	2.7			X		
Splicing magnetic recorder tape	8	8	15	4	1	3.4			X		
Care of chalkboard surface	16	5	11	3	1	4.1		X			

*1 - Most important
2 - Considerable importance
3 - Some importance
4 - Little importance
5 - No importance

TABLE 9

CHARACTERISTICS CONCERNED WITH UTILIZATION OF AUDIO-VISUAL MATERIALS

Characteristics	Number Responding					Median Score	Composite Jury Ratings				
	1	2	3	4	5*		1	2	3	4	5*
Making a community survey	7	5	20	3	1	3.2			X		
Arranging classrooms for best viewing and listening	27	7	2	0	0	4.8	X				
Using criteria in selection of materials	33	2	1	0	0	5.1	X				
Preparing a class to use audio-visual materials	34	2	0	0	0	5.0	X				
Developing follow-up activity	34	2	0	0	0	5.0	X				
Evaluating use of materials	33	2	1	0	0	5.0	X				
Developing listening habits	31	5	0	0	0	4.9	X				
Developing resource units	26	8	2	0	0	4.8	X				
Organizing field trips	25	8	3	0	0	4.8	X				

TABLE 9--Continued

Characteristics	Number Responding					Median Score	Composite Jury Ratings				
	1	2	3	4	5*		1	2	3	4	5*
Transferring pictures to a chalkboard	12	8	12	3	1	3.8		X			
Chalkboard drawing	12	12	10	2	0	3.9		X			
Screening for seeing and hearing deficiencies	15	8	11	2	0	4.1		X			
Classroom demonstrations	24	7	3	1	1	4.8	X				
Dramatization	17	12	7	0	0	4.3		X			

*1 - Most important
2 - Considerable importance
3 - Some importance
4 - Little importance
5 - No importance

TABLE 10

CHARACTERISTICS CONCERNED WITH PRODUCTION OF AUDIO-VISUAL MATERIALS

Characteristics	Number Responding					Median Score	Composite Jury Ratings				
	1	2	3	4	5*		1	2	3	4	5*
Mounting, filing, and classifying flat pictures	17	11	8	0	0	4.4		X			
Mounting, filing, and classifying specimens and objects	14	10	12	0	0	4.1		X			
Making maps, charts, and posters	14	12	10	0	0	4.2		X			
Preparing feltboards and felt-board materials	15	12	9	0	0	4.3		X			
Constructing models	10	8	17	1	0	3.5		X			
Preparing displays	13	17	5	1	0	4.3		X			
Preparing exhibits and dioramas	12	13	10	1	0	4.0		X			
Making duplicating stencils	16	8	8	2	2	3.9		X			
Preparing 3¼" by 4" handmade lantern slides	6	9	12	8	1	4.5	X				

TABLE 10--Continued

Characteristics	Number Responding					Median Score	Composite Jury Ratings				
	1	2	3	4	5*		1	2	3	4	5*
Preparing 2" by 2" handmade slides	5	10	11	9	1	3.3			X		
Producing photographic pictures	3	10	11	10	2	3.0			X		
Producing motion pictures	0	3	10	16	7	2.2				X	
Making recordings	13	10	9	4	0	4.0		X			
Producing filmstrips	1	1	17	13	4	3.1			X		
Producing radio programs	2	6	17	8	3	2.9			X		
Producing television programs	2	6	16	9	3	2.9			X		
Developing and printing still pictures	1	3	10	18	4	2.3				X	

*1 - Most important
2 - Considerable importance
3 - Some importance
4 - Little importance
5 - No importance

Criteria: Knowledges

Physical Characteristics of Audio-Visual Materials and Procedure

1. It is "most important" for the beginning teacher to possess knowledge of different kinds of audio-visual equipment.

2. It is of "considerable importance" for the beginning teacher to possess knowledge of various methods of ventilating classrooms.

3. It is of "considerable importance" for the beginning teacher to possess knowledge of light control.

4. It is of "considerable importance" for the beginning teacher to possess knowledge of the mechanism of audio-visual equipment.

5. It is of "some importance" for the beginning teacher to possess knowledge of different types of projection screens.

6. It is of "some importance" for the beginning teacher to possess knowledge of the fundamental problems of classroom acoustics.

7. It is of "little importance" for the beginning teacher to possess knowledge of projection equipment optics.

8. It is of "little importance" for the beginning teacher to possess knowledge of the cost and sources of audio-visual materials.

Background Knowledges in Audio-Visual Education

9. It is "most important" for the beginning teacher to possess knowledge of the place of audio-visual materials in learning.

10. It is "most important" for the beginning teacher to possess knowledge of best materials for a specific teaching purpose.

11. It is of "considerable importance" for the beginning teacher to possess knowledge of research and reference materials in audio-visual education.

12. It is of "some importance" for the beginning teacher to possess knowledge of the historical development of the audio-visual movement.

Educational Value of Audio-Visual Materials

13. It is "most important" for the beginning teacher to possess knowledge of the educational value of graphic materials.

14. It is "most important" for the beginning teacher to possess knowledge of the educational value of three-D materials.

15. It is "most important" for the beginning teacher to possess knowledge of the educational value of flat pictures.

16. It is of "considerable importance" for the beginning teacher to possess knowledge of the educational value of the chalkboard.

17. It is of "considerable importance" for the beginning teacher to possess knowledge of the educational value of types of sound motion pictures.

18. It is of "considerable importance" for the beginning teacher to possess knowledge of the educational value of 3¼" by 4" lantern slides.

19. It is of "some importance" for the beginning teacher to possess knowledge of the educational value of arts and crafts materials.

20. It is "some importance" for the beginning teacher to possess knowledge of educational value of different kinds of motion picture photographic techniques.

Criteria: Competencies

Operation of Audio-Visual Equipment

21. It is "most important" for the beginning teacher to possess competency in the operation of the 16mm motion picture projector.

22. It is "most important" for the beginning teacher to possess competency in operation of the combination filmstrip and 2" by 2" slide projector.

23. It is "most important" for the beginning teacher to possess competency in operation of the opaque projector.

24. It is "most important" for the beginning teacher to possess competency in operation of the magnetic recorder.

25. It is of "considerable importance" for the beginning teacher to possess competency in the operation of the disc recorder and playback equipment.

26. It is of "considerable importance" for the beginning teacher to possess competency in operation of the 3¼" by 4" lantern slide projector.

27. It is of "considerable importance" for the beginning teacher to possess competency in operation of duplicating equipment.

28. It is of "some importance" for the beginning teacher to possess competency in the operation of the tachistoscope.

29. It is of "some importance" for the beginning teacher to possess competency in the operation of public address equipment.

30. It is of "some importance" for the beginning teacher to possess competency in operation of the microprojector.

Maintenance of Audio-Visual Equipment

31. It is of "considerable importance" for the beginning teacher to possess competency in caring for chalkboard surface.

32. It is of "considerable importance" for the beginning teacher to possess competency in changing lamps in projection equipment.

33. It is of "some importance" for the beginning teacher to possess competency in splicing magnetic tape.

34. It is of "some importance" for the beginning teacher to possess competency in cleaning and oiling projection equipment.

35. It is of "some importance" for the beginning teacher to possess competency in cleaning recording and cutting heads.

36. It is of "some importance" for the beginning teacher to possess competency in splicing 16mm motion picture film.

Utilization of Audio-Visual Materials

37. It is "most important" for the beginning teacher to possess competency in preparing a class to use audio-visual materials.

38. It is "most important" for the beginning teacher to possess competency in developing follow-up activity after using audio-visual materials.

39. It is "most important" for the beginning teacher to possess competency in using criteria in selecting teaching materials for a learning situation.

40. It is "most important" for the beginning teacher to possess competency in evaluating use of audio-visual materials.

41. It is "most important" for the beginning teacher to possess competency in developing effective listening habits on the part of the students.

42. It is "most important" for the beginning teacher to possess competency in developing resource units.

43. It is "most important" for the beginning teacher to possess competency in arranging a classroom for the best possible viewing and listening comfort.

44. It is "most important" for the beginning teacher to possess competency in organizing and conducting field trips and excursions.

45. It is "most important" for the beginning teacher to possess competency in demonstration technique.

46. It is of "considerable importance" for a beginning teacher to possess competency in dramatization techniques.

47. It is of "considerable importance" for the beginning teacher to possess competency in chalkboard drawing and lettering.

48. It is of "considerable importance" for the beginning teacher to possess competency in transferring pictures to a chalkboard.

49. It is of "considerable importance" for the beginning teacher to possess competency in screening students for seeing and hearing deficiencies.

50. It is of "some importance" for the beginning teacher to possess competency in making a community survey.

Production of Audio-Visual Materials

51. It is "most important" for the beginning teacher to possess competency in preparing 3¼" by 4" handmade lantern slides.

52. It is of "considerable importance" for the beginning teacher to possess competency in mounting, filing, and classifying flat pictures.

53. It is of "considerable importance" for the beginning teacher to possess competency in mounting, filing, and classifying specimens and objects.

54. It is of "considerable importance" for the beginning teacher to possess competency in making maps, charts, and posters.

55. It is of "considerable importance" for the beginning teacher to possess competency in the preparation of feltboards and feltboard materials.

56. It is of "considerable importance" for the beginning teacher to possess competency in the construction of models.

57. It is of "considerable importance" for the beginning teacher to possess competency in the construction of displays.

58. It is of "considerable importance" for the beginning teacher to possess competency in preparing exhibits and dioramas.

59. It is of "considerable importance" for the beginning teacher to possess competency in the production of duplicating stencils.

60. It is of "considerable importance" for the beginning teacher to possess competency in making recordings.

61. It is of "some importance" for the beginning teacher to possess competency in the production of 2" by 2" slides.

62. It is of "some importance" for the beginning teacher to possess competency in the production of photographic pictures.

63. It is of "some importance" for the beginning teacher to possess competency in producing filmstrips.

64. It is of "some importance" for the beginning teacher to possess competency in producing radio programs.

65. It is of "some importance" for the beginning teacher to possess competency in producing television programs.

66. It is of "little importance" for the beginning teacher to possess competency in the production of motion pictures.

67. It is of "little importance" for the beginning teacher to possess competency in developing and printing still pictures.

Summary

This chapter was designed to show the process involved in constructing criteria by which an evaluation of the pre-service preparation of teachers in the area of audio-visual education could be made. This evaluation was concerned with selected colleges and universities in Oklahoma. The chapter describes the method used in the selection of the jury, explains the construction of the questionnaire, describes the method of testing the reliability of the questionnaire, and shows the formulated criteria.

The first step in formulating these criteria was to gather and refine all of the suggested knowledges and competencies needed by a teacher. This list was rated by a jury composed of public school people in a supervisory capacity who had a sound background in audio-visual education. The median score was derived from jury responses to each item and was used as a basis for formulating criteria. The criteria were to be used in evaluating those opportunities provided by pre-service teacher education programs in state supported colleges and universities in Oklahoma which would enable prospective teachers to become competent in the use of audio-visual materials of instruction.

CHAPTER IV

ANALYSIS AND EVALUATION OF SELECTED ASPECTS OF THE OKLAHOMA PROGRAMS OF PRE-SERVICE PREPARATION OF TEACHERS

In this chapter an attempt will be made to analyze data pertaining to the pre-service audio-visual experiences offered teacher education students in state supported colleges and universities of Oklahoma and to evaluate each selected aspect in terms of strengths and weaknesses.

For convenience of organization the chapter is divided into seven parts: (1) knowledge of physical characteristics of materials and procedure, (2) knowledge concerned with background information, (3) knowledge of the educational value of audio-visual materials, (4) competency in the operation of audio-visual equipment, (5) competency in the maintenance of audio-visual materials, (6) competency in the utilization of audio-visual materials, (7) competency in the production of audio-visual materials.

Each part contains statements of criteria, an analysis of data, and evaluative statements concerning each criterion as it relates to the college or university programs.

To facilitate the evaluation, the following relationship has been empirically established between the jury ratings and the graduate reactions: The word "most" has a meaning suggesting greatest extent or almost all. Thus, if a criterion had a jury rating of "most important," at least 90 per cent of the graduates should possess adequate knowledge or competency. Similarly, since the word "considerable" means much or large, a jury rating of "considerable importance" suggests that at least 75 per cent of the graduates should possess adequate knowledge. The word "some" means a certain indefinite or unspecified number. Thus, a rating of "some importance" suggests that at least 30 per cent of the graduates should possess adequate knowledge. "Little" is thought of being lesser or least. Therefore, a rating of "little importance" suggests at least 10 per cent of the graduates should possess adequate knowledge.[1]

PART I: PHYSICAL ASPECTS

Part I presents an analysis of data and evaluation on each of eight criteria dealing with physical aspects of audio-visual education: (1) different kinds of audio-visual equipment, (2) various methods of ventilating classrooms, (3) light control techniques, (4) mechanism of audio-visual equipment, (5) different types of projection screens, (6) classroom acoustics, (7) projection equipment optics, and (8) cost and sources of audio-visual materials.

---

[1]WCD

Criterion 1

It is "most important" for beginning teachers to possess knowledge of different kinds of audio-visual equipment.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--Table 11 indicates 10, or 100 per cent, of the institutions involved in the study provided opportunity for pre-service teacher education students to gain knowledge of the different kinds of audio-visual equipment.

TABLE 11

EXTENT TO WHICH TEN OKLAHOMA STATE SUPPORTED COLLEGES AND UNIVERSITIES PROVIDED 1956 TEACHER EDUCATION STUDENTS OPPORTUNITY TO ACQUIRE KNOWLEDGE OF THE PHYSICAL ASPECTS OF AUDIO-VISUAL EQUIPMENT

Experience Characteristics	Number	Per Cent
Different kinds of audio-visual equipment	10	100
Methods of ventilating darkened rooms	10	100
Light control technique	10	100
Mechanism of audio-visual equipment	10	100
Types of projection screens	10	100
Fundamentals of classroom acoustics	8	80
Projection equipment optics	6	60
Cost and sources of materials	10	100

Professional Courses Offering Planned Experiences.--Data in Table 12 show that opportunities for gaining knowledge of different kinds of audio-visual equipment, as well as the

TABLE 12

PERCENTAGE OF TEN COLLEGES AND UNIVERSITIES OFFERING PLANNED EXPERIENCES LEADING TO KNOWLEDGE OF THE PHYSICAL ASPECTS OF AUDIO-VISUAL EQUIPMENT

Learning Situations	Per Cent
Audio-visual course	100
Student teaching	60
Student teaching seminar	20
Special and general methods courses	70

seven other characteristics dealt with in this part, were provided in a number of situations. Ten, or 100 per cent, offered opportunities in an audio-visual course; 6, or 60 per cent in student teaching; 2, or 20 per cent, in student teacher seminars; and 7, or 70 per cent, in general and specific method courses.

Required Courses.--Table 13 shows that student teaching seminars were required by 40 per cent of the colleges and universities; method courses were required by 90 per cent; while only 20 per cent required audio-visual courses. These data apply to the criterion under consideration as well as the other three criteria in this part.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Knowledge.--Over half the graduates responding to the questionnaire indicated they had "adequate knowledge" of different kinds of audio-visual equipment. The data in Table 14 shows that 59

TABLE 13

PERCENTAGE OF TEN COLLEGES AND UNIVERSITIES REQUIRING COURSES WHERE PLANNED AUDIO-VISUAL EXPERIENCES ARE OFFERED

Course	Number	Per Cent
Audio-visual course	2	20
Student teaching	10	100
Student teaching seminar	4	40
Methods courses	9	90

TABLE 14

EXTENT TO WHICH 216 GRADUATES FROM STATE SUPPORTED COLLEGES AND UNIVERSITIES IN OKLAHOMA POSSESSED KNOWLEDGE OF PHYSICAL ASPECTS OF AUDIO-VISUAL EQUIPMENT

Experience Characteristics	Percentage of Responses		
	Adequate Knowledge	Limited Knowledge	No Knowledge
Different kinds of audio-visual equipment	59	31	10
Methods of ventilating darkened rooms	25	47	28
Light control technique	31	48	21
Mechanism of audio-visual equipment	31	43	26
Types of projection screens	33	35	32
Fundamentals of classroom acoustics	22	48	30
Projection equipment optics	19	43	38
Cost and sources of materials	33	44	23

per cent possessed "adequate knowledge," 31 per cent possessed "limited knowledge," and 10 per cent possessed "no knowledge."

Courses in Which Graduates Acquired Knowledge.--Table 15 shows that of the graduates responding to the "adequate knowledge" category, 15 per cent felt they received knowledge of the different kinds of audio-visual equipment as a result of experiences in an audio-visual course; 57 per cent from a combination audio-visual course, methods, and student teaching; 25 per cent from methods, and/or student teaching; and 3 per cent from other sources.

Table 15 also indicates that the graduates responding to the "limited knowledge" category received this knowledge as a result of experiences in audio-visual courses in 12 per cent of the cases; 54 per cent from a combination audio-visual course, methods and student teaching; 31 per cent from methods, and/or student teaching; and 3 per cent from other sources. It would seem that students had a better chance of gaining knowledge of different kinds of audio-visual equipment since a larger number of the institutions provided planned experiences in those situations which provided the graduates with the necessary experience.

Evaluation

As indicated in the analysis of the data, all of the institutions involved in the study offered opportunities for pre-service teachers to gain knowledge of the different kinds of audio-visual equipment. These opportunities were offered in both semi-elective and required courses. Yet, only 59 per cent possessed "adequate knowledge," 31 per cent had "limited

TABLE 15

LEARNING SITUATIONS PROVIDING ADEQUATE AND LIMITED KNOWLEDGE AND PERCENTAGE OF GRADUATES RESPONDING TO EACH

Characteristic	Percentage of Respondents							
	Adequate				Limited			
	AV	AVMST	MST	O*	AV	AVMST	MST	O*
Different kinds of audio-visual equipment	15	57	25	3	12	54	31	3
Methods of ventilating darkened rooms	13	73	10	4	15	48	36	1
Light control technique	21	68	8	3	9	55	36	0
Mechanism of audio-visual equipment	19	71	9	1	10	56	31	3
Types of projection screens	20	71	6	3	9	52	39	0
Fundamentals of classroom acoustics	13	70	13	4	15	51	33	1
Projection equipment optics	20	70	10	0	13	56	28	3
Cost and sources of materials	13	71	13	3	12	42	45	1

* AV - audio-visual course
AVMST - audio-visual course, methods and student teaching
MST - method courses and student teaching
O - others

knowledge," and 10 per cent possessed "no knowledge." In light of the rating "most important" placed on this criterion by the jury, it appears the graduate responses do not indicate adequate strength. Therefore, it seems pre-service preparation of teachers in this area of audio-visual education was weak.

Criterion 2

It is of "considerable importance" for beginning teachers to possess knowledge of various methods of ventilating classrooms.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--An analysis of the data presented in Table 11 indicates that 10, or 100 per cent, of the colleges and universities involved in the study offered opportunities which would enable pre-service teacher education students to acquire knowledge of various methods of ventilating classrooms.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Knowledge. --A large percentage of the graduates indicated "limited knowledge" and "no knowledge" of methods of ventilating classrooms. This fact is borne out in Table 14 where it is shown that only 25 per cent of the graduates possessed "adequate knowledge" of different methods of ventilating class-

rooms, while 47 per cent possessed "limited knowledge," and 28 per cent possessed "no knowledge."

Courses in Which Graduates Acquired Knowledge.--It is shown in Table 15 that 13 per cent of the graduate respondents received "adequate knowledge" of various methods of ventilating classrooms through a course in audio-visual education; 73 per cent from a combination audio-visual course, methods, and student teaching; 10 per cent from methods, and/or student teaching; and 4 per cent from other sources.

Table 15 also indicates that the graduates responding to the "limited knowledge" category received this knowledge as a result of experiences in audio-visual courses in 15 per cent of the cases; 48 per cent from combination audio-visual courses, methods, and student teaching; 36 per cent from methods and/or student teaching; and 1 per cent from other sources.

Evaluation

As pointed out previously, all of the colleges and universities involved in the study offered opportunities which would enable pre-service teacher education students to gain knowledge of methods of ventilating classrooms. These opportunities were offered in strength in elective courses as well as in required courses. However, there is additional data which indicate less than half the graduate population possessed "adequate knowledge" of this "most

important" criterion. Consequently, it would appear that in this respect a weakness was indicated.

Criterion 3

It is of "considerable importance" for beginning teachers to possess knowledge of various methods of light control in the classroom.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--There was ample opportunity for pre-service teacher education students to gain knowledge of light control, as it relates to audio-visual education, among the institutions involved in the study. Data included in Table 11 show that 10, or 100 per cent, of the colleges and universities offered opportunity for gaining knowledge of the various methods of light control in the classroom.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Knowledge.--Table 14 shows that 31 per cent of the graduates possessed "adequate knowledge" of various methods of light control in the classroom; "limited knowledge" was indicated by 41 per cent, while 10 per cent indicated "no knowledge."

Courses in Which Graduates Acquired Knowledge.--As revealed by data in Table 15, the graduates responding to the "adequate knowledge" category showed 21 per cent received

this knowledge from an audio-visual course; 68 per cent from a combination of courses in audio-visual education, methods, and student teaching; 8 per cent from methods and/or student teaching; and 3 per cent from other sources. Of those having "limited knowledge," 9 per cent acquired this knowledge as a result of an audio-visual course; 55 per cent from a combination of audio-visual, methods, and student teaching; 36 per cent from method courses and/or student teaching; and none from other sources.

Evaluation

The above information points out that all institutions provided opportunities which would enable pre-service teacher education students to gain knowledge of light control techniques for the classroom. These opportunities were offered in strength in both semi-elective and required courses (Tables 12 and 13). Data further show that a small percentage of graduates possessed "adequate knowledge" of this characteristic. Since the jury rated the knowledge of "considerable importance" to beginning teachers, it seems that this response indicated a weakness.

Criterion 4

It is of "considerable importance" for beginning teachers to possess knowledge of the mechanism of audio-visual equipment.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--As indicated by Table 11, experiences designed to develop knowledge of the mechanism of audio-visual equipment were offered in 10, or 100 per cent, of the colleges and universities involved in the study.

Reaction of Graduates

Extent to Which 1956 Graduates Possessed Knowledge.--Table 14 indicates that 31 per cent of the graduates possessed "adequate knowledge" of the mechanism of audio-visual equipment, 43 per cent possessed "limited knowledge," and 26 per cent possessed "no knowledge."

Courses in Which Graduates Acquired Knowledge.--Table 15 shows that of the graduates responding to the "adequate knowledge" category, 19 per cent felt they received this knowledge from an audio-visual course; 71 per cent from a combination of courses in audio-visual education, methods, and student teaching; 9 per cent from methods and/or student teaching; and 1 per cent from other sources. Table 15 also indicates graduates responding to the "limited knowledge" category received this knowledge as a result of experience in audio-visual courses in 10 per cent of the cases; 56 per cent from combination audio-visual course, methods, and student teaching; 31 per cent from methods and/or student teaching; and 3 per cent from other sources.

Evaluation

All of the institutions involved in the study offered opportunities for pre-service teacher education students to acquire knowledge of the mechanism of audio-visual equipment. These opportunities were offered in both elective, semi-elective, and required professional courses (Tables 12 and 13). In light of the value of "considerable importance" placed on this criterion by the jury, it is significant that very few graduates possessed "adequate knowledge" of the mechanism of audio-visual equipment. Opportunities existed for gaining knowledge of this criterion believed to be of "considerable importance." However, too few graduates indicated "adequate knowledge" to give evidence of strength with regard to this criterion. Thus, a weakness was indicated.

Criterion 5

It is of "some importance" for beginning teachers to possess knowledge of different types of projection screens.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--It is indicated that opportunities for gaining knowledge of different types of projection screens were quite extensive throughout the state. As Table 11 shows, 10, or 100 per cent, of the colleges and universities offered experiences which could lead to possession of this knowledge.

Reaction of Graduates

Extent to Which 1956 Graduates Possessed Knowledge.--The data in Table 14 show a breakdown, by percentage, of the proportion to which graduates possessed knowledge of the types of projection screens. "Adequate knowledge" was expressed by 33 per cent of the graduates; 35 per cent indicated "limited knowledge," and 32 per cent indicated "no knowledge" of the different types of projection screens.

Courses in Which Graduates Acquired Knowledge.--Table 15 shows that of the graduates responding to the "adequate knowledge" category, 20 per cent felt they received the knowledge from an audio-visual course; 71 per cent from a combination of courses in audio-visual education, methods, and student teaching; 6 per cent from methods and/or student teaching; and 3 per cent from other sources. Table 15 also indicates the graduates responding to the "limited knowledge" category received this knowledge as a result of experience in audio-visual courses in 9 per cent of the cases; 52 per cent from combination audio-visual course, methods, and student teaching; 39 per cent from methods and/or student teaching; and none from other sources.

Evaluation

All colleges and universities provided opportunities for pre-service teacher education students to acquire knowledge of different types of projection screens. As previously pointed out, these opportunities were provided in both

elective, semi-elective, and required professional education courses. Considering the value of "some importance" placed on this criterion by the jury, the percentage of graduates indicating "adequate" possession of the knowledge seemed to be sufficient. Thus, this aspect of the programs for preparing teachers in Oklahoma appeared to be strong.

Criterion 6

It is of "some importance" for beginning teachers to possess knowledge of the fundamental problems of classroom acoustics.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--An analysis of the data presented in Table 11 shows that 8, or 80 per cent, of the institutions involved in the study offered opportunities which would enable teacher education students to acquire knowledge of the fundamental problems of classroom acoustics.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Knowledge.--A large percentage of the graduates responded to the "limited knowledge" and "no knowledge" categories on the experience characteristic concerned with classroom acoustics. This fact is substantiated by the data presented in Table 14 where it is shown that only 22 per cent of the graduates possessed "adequate knowledge"; 48 per cent indicated "limited knowl-

edge," and 30 per cent possessed "no knowledge."

Courses in Which Graduates Acquired Knowledge.--Table 15 indicates the audio-visual course provided necessary experiences for 12 per cent having "adequate knowledge" and 15 per cent having "limited knowledge." A combination of audio-visual course, methods, and student teaching provided necessary experiences for 70 per cent of those having "adequate knowledge," and for 51 per cent having "limited knowledge." A combination of methods and/or student teaching provided experience for 13 per cent of those having "adequate knowledge" and for 33 per cent of those having "limited knowledge." Other sources provided 4 per cent of those having "adequate knowledge" and 1 per cent having "limited knowledge."

Evaluation

Nine of the colleges and universities involved in the study offered opportunities for pre-service teacher education students to gain knowledge of classroom acoustics. Those institutions which made it possible for students to acquire this knowledge offered planned experiences in elective courses as well as required professional education courses. Data obtained from graduates showed that a very small majority possessed "adequate knowledge" of classroom acoustics. Even though the jury placed a rating of "some importance" on this knowledge, it appears that opportunity does exist which would enable prospective teachers to gain knowledge of classroom

acoustics. However, the small number of graduates indicating "adequate knowledge" seemed to indicate a weakness in these opportunities.

Criterion 7

It is of "little importance" for a beginning teacher to possess knowledge of projection equipment optics.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--Table 11 shows 6, or 60 per cent, of the colleges and universities included in this study offered opportunities which would enable pre-service teacher education students to acquire knowledge of projection equipment optics.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Knowledge.--As shown by data in Table 14, only 19 per cent of the graduate respondents possessed "adequate knowledge" or projection equipment optics; 43 per cent indicated "limited knowledge," and 38 per cent indicated "no knowledge."

Courses in Which Graduates Acquired Knowledge.--Table 15 presents data which indicate that of the graduates responding to the "adequate knowledge" category, 20 per cent felt they received the knowledge from an audio-visual course; 70 per cent from a combination of courses in audio-visual education, methods, and student teaching; 10 per cent from

methods and/or student teaching; and none from other sources. Table 15 further indicates that graduates responding to the "limited knowledge" category received this knowledge as a result of experience in audio-visual courses in 13 per cent of the cases; 56 per cent from combination audio-visual course, methods and student teaching; 28 per cent from methods and/or student teaching; and 3 per cent from other sources.

Evaluation

Since the majority of colleges and universities offered opportunities to acquire knowledge of projection equipment optics in a variety of courses, and since 19 per cent of the graduates indicated "adequate knowledge," and 43 per cent indicated "limited knowledge," it appeared, in light of the value of "little importance" placed on this criterion by the jury, that this aspect of pre-service preparation suggests adequate strength.

Criterion 8

> It is of "little importance" for a beginning teacher to possess knowledge of the cost and sources of audio-visual materials.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--Table 11 shows 10, or 100 per cent, of the institutions offered opportunities to pre-service education students which would lead to acquiring

knowledge of cost and sources of audio-visual materials.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Knowledge.--In analyzing the data in Table 14, it is observed that 33 per cent of the graduates possessed "adequate knowledge" of the cost and source of audio-visual materials; 44 per cent possessed "limited knowledge," and 23 per cent possessed "no knowledge."

Courses in Which Graduates Acquired Knowledge.--Table 15 shows that of the graduates responding to the "adequate knowledge" category, 13 per cent felt they received the knowledge from an audio-visual course; 71 per cent from a combination audio-visual course, methods, and student teaching; 13 per cent from methods and/or student teaching; and 3 per cent from other sources. Table 15 further indicates that graduates responding to the "limited knowledge" received this knowledge as a result of experience in audio-visual courses in 12 per cent of the cases; 42 per cent from combination audio-visual course, methods, and student teaching; 45 per cent from methods and/or student teaching; and 1 per cent from other sources.

Evaluation

All of the colleges and universities involved in the study offered opportunities for acquiring knowledge of the cost and sources of audio-visual materials. These opportun-

ities were offered in a variety of situations within the professional sequence, both in elective and required units. The data further point out that less than half the graduates responding to the questionnaire possessed "adequate knowledge" of this criterion. However, it should be noted that the jury placed a rating of "little importance" on this item. Thus, it would seem that adequate opportunity was provided for acquiring this knowledge, and since the jury placed a low rating on the criterion, it appeared that a sufficient percentage of graduates possessed "adequate knowledge" for this aspect of pre-service preparation to be rated strong.

PART II: BACKGROUND KNOWLEDGES

This part of Chapter IV deals with four criterion concerning background knowledges in audio-visual education: (1) the place of audio-visual materials in learning, (2) best materials for a specific teaching purpose, (3) research and reference materials, and (4) historical development of the audio-visual movement. An analysis of data and an evaluative statement is presented for each criterion.

Criterion 9

It is "most important" for beginning teachers to possess knowledge of the place of audio-visual materials in learning.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--Table 16 shows 10, or 100 per cent, of the colleges and universities offered opportunities for gaining knowledge of the place of audio-visual materials in learning.

TABLE 16

EXTENT TO WHICH TEN OKLAHOMA STATE SUPPORTED COLLEGES AND UNIVERSITIES PROVIDED 1956 TEACHER EDUCATION STUDENTS OPPORTUNITY TO ACQUIRE FOUR BACKGROUND KNOWLEDGES IN AUDIO-VISUAL EDUCATION

Experience Characteristics	Number	Per Cent
Place of audio-visual materials in learning	10	100
Best materials for a specific teaching purpose	10	100
Research and reference materials in audio-visual education	9	90
Historical development of the audio-visual movement	9	90

Professional Courses Offering Planned Experiences.--It is also indicated in Table 17 that the opportunities leading to knowledge of the place of audio-visual materials in learning were offered by 100 per cent of the colleges and universities in an audio-visual course, 40 per cent in student teaching, 20 per cent in student teacher seminars, and 20 per cent in special or general method courses. It is apparent from this evidence that the course in audio-visual education

is depended upon heavily to provide necessary experiences concerning the place of audio-visual materials in learning.

TABLE 17

PERCENTAGE OF TEN COLLEGES AND UNIVERSITIES OFFERING PLANNED EXPERIENCES LEADING TO BACKGROUND KNOWLEDGES IN FOUR LEARNING SITUATIONS

Learning Situations	Per Cent
Audio-visual course	100
Student teaching	40
Student teaching seminar	20
Special and general methods courses	20

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Knowledge.--A majority of graduates possessed knowledge of the place of audio-visual materials in learning. Table 18 shows that 71 per cent possessed "adequate knowledge"; 17 per cent possessed "limited knowledge," and 12 per cent possessed "no knowledge."

Courses in Which Graduates Acquired Knowledge.--Table 19 shows that of the graduates responding to the "adequate knowledge" category, 12 per cent believed they received knowledge of the place of audio-visual materials in learning as a result of experiences in an audio-visual course; 59 per cent from a combination audio-visual course, methods, and student teaching; 26 per cent from methods and/or student teaching; and 3 per cent from other sources.

TABLE 18

EXTENT TO WHICH 216 GRADUATES FROM STATE SUPPORTED COLLEGES AND UNIVERSITIES IN OKLAHOMA POSSESSED FOUR BACKGROUND KNOWLEDGES IN AUDIO-VISUAL EDUCATION

Experience Characteristics	Percentage of Responses		
	Adequate Knowledge	Limited Knowledge	No Knowledge
Place of audio-visual materials in learning	71	17	12
Best materials for a specific teaching purpose	41	48	11
Research and reference materials	31	43	26
Historical development of audio-visual movement	11	38	51

Evaluation

Evidence shows all colleges and universities offered opportunities for gaining knowledge of the place of audio-visual materials in learning. Data further indicate only a few of the colleges and universities provided thses audio-visual learning experiences in required professional education courses. Although 71 per cent of the responding graduates indicated "adequate knowledge" of this criterion, it should be pointed out that the jury judged this criterion to be "most important." It appeared that opportunities existed for gaining knowledge of the place of audio-visual materials in learning. However, since too few graduates indicated "adequate knowledge" of this characteristic, it appeared that a weakness was indicated.

TABLE 19

LEARNING SITUATIONS PROVIDING ADEQUATE AND LIMITED KNOWLEDGE AND PERCENTAGE OF GRADUATES RESPONDING TO EACH

Characteristics	Percentage of Respondents							
	Adequate				Limited			
	AV	AVMST	MST	O*	AV	AVMST	MST	O*
Place of audio-visual materials in learning	12	59	26	3	9	29	62	0
Best materials for a specific purpose	17	64	18	1	9	42	47	2
Research and reference materials in audio-visual education	13	72	13	2	11	47	41	1
Historical development of the audio-visual movement	24	66	10	0	9	64	24	3

* AV - audio-visual course
AVMST - audio-visual course, methods, and student teaching
MST - method courses and student teaching
O - others

Criterion 10

It is "most important" for beginning teachers to possess knowledge of the best materials for a specific teaching purpose.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--As indicated in Table 16, experiences designed to develop knowledge of the best audio-visual materials for a specific teaching purpose were offered in 10, or 100 per cent, of the colleges and universities involved in the study.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Knowledge.--An examination of Table 18 reveals that 41 per cent of the graduates possessed "adequate knowledge" of best materials for specific teaching purposes; 48 per cent possessed "limited knowledge," and 11 per cent "no knowledge."

Courses in Which Graduates Acquired Knowledge.--Table 19 shows that of the graduates responding to the "adequate knowledge" category, 17 per cent felt they received this knowledge from an audio-visual course; 64 per cent from a combination of courses in audio-visual education, methods, and student teaching; 18 per cent from methods and/or student teaching; and none from other sources. Of those having "limited knowledge," 9 per cent acquired this knowledge as a result of an audio-visual course; 42 per cent from a combination

of audio-visual courses, methods, and student teaching; 47 per cent from method courses and/or student teaching; and 2 per cent from other sources.

Evaluation

The data indicated all colleges and universities involved in the study offered opportunities which would enable pre-service teacher education students to gain knowledge of the best audio-visual materials for a specific teaching purpose. In the majority of cases, these opportunities existed only in elective or semi-elective courses. A further analysis of the data reveal that only 41 per cent of the responding graduates indicated "adequate knowledge" of this "most important" criterion. It appeared that the opportunities for gaining knowledge of the best audio-visual materials for a specific teaching purpose were available. However, since so small a percentage of prospective teachers acquired "adequate knowledge" of this "most important" criterion, it seemed that a weakness was indicated.

Criterion 11

It is of "considerable importance" for the beginning teacher to possess knowledge of research and reference materials in audio-visual education.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--An indication of the extent

of offerings which could enable teacher education students to acquire knowledge of research and reference materials in audio-visual education is shown in Table 16. Of the 10 colleges and universities involved, 9, or 90 per cent, offered this opportunity.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Knowledge.--As pointed out by data in Table 18, only 31 per cent of the graduates possessed "adequate knowledge" of research and reference materials in audio-visual education, while 43 per cent indicated "limited knowledge." "No knowledge" was indicated by 26 per cent of the graduates.

Courses in Which Graduates Acquired Knowledge.--Table 19 shows that of the people indicating "adequate knowledge," 13 per cent acquired the knowledge as a result of an audio-visual course; 72 per cent from a combination of audio-visual courses, methods, and student teaching; 13 per cent acquired the knowledge as a result of method courses and/or student teaching; and 2 per cent from other sources. Of those persons indicating "limited knowledge," 11 per cent acquired the knowledge from an audio-visual course; 47 per cent from a combination of audio-visual courses, methods, and student teaching; 41 per cent from a combination of methods and/or student teaching; and 1 per cent from other sources.

Evaluation

Evidence shows that a large majority of colleges and universities involved in the study provided opportunities which would enable teacher education students to acquire knowledge of research and reference materials in audio-visual education. The data point out that these opportunities were offered primarily in audio-visual courses which were specifically required by only 2 per cent of the colleges and universities. The evidence further shows that the professional courses which were required did not contain planned experiences except in a small number of cases. It should be noted that 31 per cent of the graduates indicated "adequate knowledge" of this criterion. In light of the jury rating, it appeared that a reasonable number of opportunities for gaining knowledge of research and reference materials in learning were present, but since so few graduates possessed "adequate knowledge," it seemed that a weakness was indicated.

Criterion 12

It is of "some importance" for beginning teachers to possess knowledge of the historical development of the audio-visual movement.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--As indicated in Table 16, experiences designed to gain knowledge concerned with the

historical development of the audio-visual movement were offered in 9, or 90 per cent, of the colleges and universities involved in the study.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Knowledge.--The value of these experiences is indicated by data presented in Table 18 where it is shown that only 11 per cent of the graduates possessed "adequate knowledge" of the historical development of the audio-visual movement, while 38 per cent indicated "limited knowledge" and 51 per cent "no knowledge."

Courses in Which Graduates Acquired Knowledge.--Table 19 indicated the course in audio-visual education provided necessary experiences for 24 per cent of those persons having "adequate knowledge," and for 9 per cent having "limited knowledge." A combination of audio-visual courses, methods, and student teaching provided necessary experiences for 66 per cent of those having "adequate knowledge," and for 64 per cent having "limited knowledge." Methods and/or student teaching provided experience for 10 per cent of those having "adequate knowledge" and 24 per cent of those having "limited knowledge." Other sources provided for 3 per cent of those having "limited knowledge" with the necessary experiences.

Evaluation

The above data point out that a majority of Oklahoma state supported institutions of higher learning offered

pre-service teacher education students opportunities to gain knowledge of the historical development of the audio-visual movement. As in the case of the other three criteria in this group, these opportunities existed mostly in elective or semi-elective courses. Further evidence indicated that only 10 per cent of the graduates possessed "adequate knowledge" while 50 per cent possessed "no knowledge." Although the jury placed a rating of "some importance" on this criterion, it appeared that in light of the opportunities, not enough graduates acquired "adequate knowledge" of this criterion to show strength. Based on this, it appeared that a weakness existed in the pre-service programs.

PART III: EDUCATIONAL VALUE OF AUDIO-VISUAL MATERIALS

The criteria dealt with in this part related to the educational value of audio-visual materials. An analysis and appraisal of eight types of audio-visual materials are included: (1) graphic materials, (2) three-D materials, (3) flat pictures, (4) chalkboard, (5) types of sound motion pictures, (6) 3¼" by 4" lantern slides, (7) arts and crafts materials, and (8) motion picture photographic techniques.

Criterion 13

It is "most important" for beginning teachers to possess knowledge of the educational value of graphic materials.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--As indicated in Table 20, there were 10, or 100 per cent, of the state supported colleges and universities which offered opportunities enabling pre-service teacher education students to acquire knowledge of the educational value of graphic materials.

TABLE 20

EXTENT TO WHICH TEN OKLAHOMA STATE SUPPORTED COLLEGES AND UNIVERSITIES PROVIDED 1956 TEACHER EDUCATION STUDENTS OPPORTUNITY TO ACQUIRE KNOWLEDGE OF THE EDUCATIONAL VALUE OF AUDIO-VISUAL MATERIALS

Experience Characteristics	Number	Per Cent
Educational value of:		
graphic materials	10	100
three-D materials	9	90
flat pictures	9	90
chalkboard	9	90
sound motion pictures	8	80
3¼" by 4" lantern slides	10	100
arts and crafts	6	60
motion picture photographic techniques	6	60

Professional Courses Offering Planned Experiences.--The data in Table 21 show that planned experiences leading to knowledge of the value of graphic materials were offered by 100 per cent of the colleges and universities in an audio-visual course, 30 per cent in student teaching, 20 per cent in student teacher seminars, and 50 per cent in special or

TABLE 21

PERCENTAGE OF TEN COLLEGES AND UNIVERSITIES OFFERING PLANNED EXPERIENCES LEADING TO KNOWLEDGE OF THE EDUCATIONAL VALUE OF AUDIO-VISUAL MATERIALS

Learning Situation	Per Cent
Audio-visual course	100
Student teaching	30
Student teaching seminar	20
Special and general methods courses	50

general method courses.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Knowledge.--Graduate responses to this characteristic were skewed to the positive side. Table 22 shows that 66 per cent of the graduates possessed "adequate knowledge" of the educational value of graphic materials; 28 per cent possessed "limited knowledge," and 6 per cent "no knowledge."

Courses in Which Graduates Acquired Knowledge. Table 23 shows that of the graduates responding to the "adequate knowledge" category, 10 per cent felt they received knowledge of the place of audio-visual materials in learning as a result of experiences in an audio-visual course; 58 per cent from a combination audio-visual course, methods, and student teaching; 30 per cent from methods and/or student teaching; and 2 per cent from other sources.

TABLE 22

EXTENT TO WHICH 216 GRADUATES FROM STATE SUPPORTED COLLEGES AND UNIVERSITIES IN OKLAHOMA POSSESSED KNOWLEDGE OF THE EDUCATIONAL VALUE OF AUDIO-VISUAL MATERIALS

Experience Characteristic	Percentage of Responses		
	Adequate Knowledge	Limited Knowledge	No Knowledge
Educational value of:			
graphic materials	66	28	6
three-D materials	50	29	21
flat pictures	43	33	24
chalkboard	63	25	12
sound motion pictures	45	38	17
3¼" by 4" lantern slides	31	31	38
arts and crafts	30	30	40
motion picture photographic techniques	17	33	50

Table 23 also indicates that the graduates responding to the "limited knowledge" category received this knowledge as a result of experience in audio-visual courses in 14 per cent of the cases; 40 per cent from a combination audio-visual course, methods, and student teaching; 46 per cent from methods and/or student teaching; and none from other sources. Consequently, those courses which were either elective, semi-elective, or those in which few institutions offered experiences, seemed to be most appropriate for conveying knowledge of the place of audio-visual materials in learning. (See Tables 13 and 21.)

TABLE 23

LEARNING SITUATIONS PROVIDING ADEQUATE AND LIMITED KNOWLEDGE AND PERCENTAGE OF GRADUATES RESPONDING TO EACH

Characteristics	Percentage of Respondents							
	Adequate				Limited			
	AV	AVMST	MST	O*	AV	AVMST	MST	O*
Educational value of:								
graphic materials	10	58	30	2	14	40	46	0
three-D materials	12	62	26	0	18	35	45	2
flat pictures	12	65	23	0	11	46	41	2
chalkboard	14	54	31	1	7	48	41	4
sound motion pictures	16	55	26	3	9	49	42	0
3¼" by 4" lantern slides	14	63	23	0	10	51	38	1
arts and crafts	7	57	36	0	16	49	32	3
motion picture photographic techniques	22	72	6	0	15	47	35	3

* AV - audio-visual course
AVMST - audio-visual course, methods, and student teaching
MST - method courses and student teaching
O - others

Evaluation

The above evidence shows that 11 of the colleges and universities involved in the study offered opportunities which could lead to the development of knowledge concerned with the value of graphic materials. Most of the opportunities existed in elective or semi-elective courses. Further evidence showed that only 66 per cent of the graduates possessed "adequate knowledge" of the educational value of graphic materials. The jury placed a rating of "most important" on this criterion and it appeared that sufficient opportunity existed for acquiring the knowledge. However, too few graduates indicated "adequate knowledge" of the criterion for the opportunities to be rated strong. Thus, this aspect of pre-service preparation appears to represent a weakness.

Criterion 14

It is "most important" for beginning teachers to possess knowledge of the educational value of three-D materials.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--As indicated in Table 20, there were 10, or 100 per cent, state supported institutions of higher learning offering experiences which could enable pre-service teacher education students to gain knowledge of the educational value of three-D materials in instruction.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Knowledge.--Half of the 1956 graduates of the institutions declared they possessed "adequate knowledge" of the educational value of three-D materials to learning. As Table 22 shows, 50 per cent of the graduates possessed "adequate knowledge;" 29 per cent possessed "limited knowledge," and 21 per cent possessed "no knowledge."

Courses in Which Graduates Acquired Knowledge.--Table 23 shows that of the graduates responding to the "adequate knowledge" category, 12 per cent indicated they received knowledge of the value of three-D materials as a result of experiences in an audio-visual course; 62 per cent from a combination audio-visual course, methods, and student teaching; 26 per cent from methods and/or student teaching; and none from other sources. Table 23 also indicates those graduates responding to the "limited knowledge" category received this knowledge as a result of experiences in audio-visual courses in 18 per cent of the cases; 35 per cent from a combination audio-visual course, methods, and student teaching; 45 per cent from methods and/or student teaching; and 2 per cent from other sources.

Evaluation

Although all of the colleges and universities involved in the study offered opportunity for gaining knowledge of the educational value of three-D materials, it is apparent that

these opportunities were offered as planned experiences in courses which were elective or semi-elective. Further analysis of the data showed that only 50 per cent of the graduates possessed "adequate knowledge" of the educational value of three-D materials. All institutions indicated opportunities did exist which would enable prospective teachers to gain knowledge of three-D materials. However, since too few graduates indicated "adequate knowledge," it seemed this aspect of pre-service preparation of teachers in audio-visual education represented a weakness.

Criterion 15

It is "most important" for beginning teachers to possess knowledge of the educational value of flat pictures.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--An analysis of the data presented in Table 20 showed that 9, or 90 per cent of the institutions involved in the study offered opportunities which would enable pre-service teacher education students to develop knowledge of the educational value of flat pictures.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Knowledge.--In view of the above evidence and that shown in Table 22, it is interesting to note that 43 per cent of the graduates

possessed "adequate knowledge" of the educational value of flat pictures; 33 per cent possessed "limited knowledge," and 24 per cent possessed "no knowledge."

Courses in Which Graduates Acquired Knowledge.--Table 23 showed that 12 per cent of the graduates having "adequate knowledge" had the experience as a result of an audio-visual course, while 11 per cent having "limited knowledge" indicated the audio-visual course as being the source of their knowledge. A combination audio-visual course, methods, and student teaching provided necessary experiences for 65 per cent of those having "adequate knowledge," and for 46 per cent having "limited knowledge." A combination of methods and student teaching provided experience for 23 per cent of those having "adequate knowledge" and for 41 per cent of those having "limited knowledge." Other sources provided none of the experiences for those having "adequate knowledge," while 2 per cent of those having "limited knowledge" gained it as a result of other sources. Thus, it would appear that a course in audio-visual education was instrumental in providing knowledge of the educational value of flat pictures.

Evaluation

A majority of institutions provided experiences leading to possession of knowledge concerned with educational value of flat pictures. As previously discussed, these

experiences were offered in courses which were elective or semi-elective. Evidence further showed that 50 per cent of the graduates possessed "adequate knowledge" of the educational value of flat pictures. Even though a large number of the institutions involved in the study offered opportunity for future teachers to gain the knowledge concerned with here, it seemed that since the jury rated this criterion "most important," too few graduates possessed "adequate knowledge." Thus, it seemed that a weakness in pre-service preparation of teachers was indicated.

Criterion 16

It is of "considerable importance" for beginning teachers to possess knowledge of the educational value of the chalkboard.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--The data in Table 20 indicated that 90 per cent of the colleges and universities involved in the study provided opportunities which included planned experiences designed to develop knowledge of educational value of the chalkboard.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Knowledge.--The majority of 1956 graduates possessed "adequate knowledge" of the educational value of the chalkboard. As Table 22

showed, 63 per cent of the graduates possessed "adequate knowledge"; 25 per cent possessed "limited knowledge," and 12 per cent possessed "no knowledge" of the educational value of the chalkboard.

Courses in Which Graduates Acquired Knowledge.--Data in Table 23 showed that of the graduates responding to the "adequate knowledge" category, 14 per cent felt they received the knowledge from an audio-visual course; 54 per cent from a combination audio-visual course, methods, and student teaching; 31 per cent from methods and/or student teaching; and 1 per cent from other sources. Table 23 also indicates graduates responding to the "limited knowledge" category received this knowledge as a result of experience in audio-visual courses in 7 per cent of the cases; 48 per cent from combination audio-visual course, methods, and student teaching; 41 per cent from methods and/or student teaching; and 4 per cent from other sources.

Evaluation

The data showed that a large percentage of colleges and universities provided opportunities for gaining knowledge of the educational value of the chalkboard. However, most of the institutions provided planned experiences in courses which were elective or semi-elective. Since the data also showed that only 63 per cent of the graduates possessed "adequate knowledge" of this criterion rated to be of "considerable importance," it appeared this aspect of pre-service

preparation represented a weakness.

Criterion 17

It is of "considerable importance" for beginning teachers to possess knowledge of the educational value of the types of sound motion pictures.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--As indicated in Table 20, experiences designed to develop knowledge of the educational value of different types of sound motion pictures were offered in 8, or 80 per cent, of the colleges and universities involved in the study.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Knowledge.--When the graduates were asked to indicate the extent to which they possessed knowledge of different types of sound motion pictures, 45 per cent responded to the "adequate knowledge" category, 38 per cent to the "limited knowledge" category, and 17 per cent to the "no knowledge" category.

Courses in Which Graduates Acquired Knowledge.--Table 23 shows that of the graduates responding to the "adequate knowledge" category, 16 per cent believed they received knowledge of the educational value of sound motion pictures in an audio-visual course; 55 per cent from a combination audio-visual course, methods, and student teaching; 26 per

cent from methods and/or student teaching; and 3 per cent from other sources. Table 23 indicates also those graduates responding to the "limited knowledge" category received this knowledge as a result of experiences in an audio-visual course in 9 per cent of the cases; 49 per cent from a combination audio-visual course, methods and student teaching; 42 per cent from methods and/or student teaching; and none from other sources. Here again it appeared that the audio-visual courses, either elective or semi-elective, seemed to be most important in providing experiences leading to knowledge of the educational value of types of sound motion pictures.

Evaluation

On the basis of the above information it is apparent that there was limited opportunity, both in the extent of offerings and in the organization of learning experience, for acquiring knowledge of the educational value of types of sound motion pictures. Further, it is observed that very few graduates possessed "adequate knowledge" of this criterion rated of "considerable importance." Thus, it appeared that this facet of the programs represented a weakness.

Criterion 18

> It is of "considerable importance" for beginning teachers to possess knowledge of the educational value of the 3¼" by 4" lantern slide.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--Table 20 indicated that 10, or 100 per cent, of the Oklahoma state supported institutions of higher learning offered planned experiences leading to knowledge of the educational value of the 3¼" by 4" lantern slide.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Knowledge.--The difference between the percentages of responses to the "adequate knowledge," "limited knowledge," and "no knowledge" categories on this item is relatively insignificant. As shown in Table 22, only 31 per cent of the graduates responded to the "adequate knowledge" category, 31 per cent to the "limited knowledge" category, and 38 per cent to the "no knowledge" category.

Courses in Which Graduates Acquired Knowledge.--Table 23 showed that of the graduates reporting "adequate knowledge," 14 per cent felt they received this knowledge from an audio-visual course; 63 per cent from a combination of courses in audio-visual education, methods, and student teaching; 23 per cent from methods and/or student teaching; and none from other sources. Of those having "limited knowledge," 10 per cent acquired the knowledge as a result of an audio-visual course; 51 per cent from a combination audio-visual course, methods,

and student teaching; 38 per cent from method courses and/or student teaching; and 1 per cent from other sources.

Evaluation

All colleges and universities offered experiences which could lead to development of a knowledge of the educational value of the 3¼" by 4" lantern slides. However, data showed that only 31 per cent of the graduates indicated "adequate knowledge" of this characteristic although opportunity to acquire the knowledge did exist. In light of the value of "considerable importance" placed on this criterion by the jury, it seemed too few graduates possessed "adequate knowledge" of this criterion to suggest strength. Thus, a weakness appeared to be represented.

Criterion 19

It is of "some importance" for beginning teachers to possess knowledge of the educational value of arts and crafts materials.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--Table 20 indicated that only 6, or 60 per cent, of the institutions selected for this study provided experiences which would enable pre-service teacher education students to acquire knowledge of the educational value of arts and crafts materials.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Knowledge.--As shown in Table 22, only 30 per cent of the graduates responded to the "adequate knowledge" category, 30 per cent to the "limited knowledge" category, and 40 per cent to the "no knowledge" category.

Courses in Which Graduates Acquired Knowledge.--Table 23 shows that of the graduates responding to the "adequate knowledge" category, 7 per cent felt they received this knowledge of the educational value of arts and crafts materials from an audio-visual course; 57 per cent from a combination of courses in audio-visual education, methods, and student teaching; 36 per cent from methods and/or student teaching; and none from other sources. Of those having "limited knowledge," 16 per cent acquired the knowledge as a result of an audio-visual course; 49 per cent from a combination of audio-visual courses, methods, and student teaching; 32 per cent from method courses and/or student teaching; and 3 per cent from other sources.

Evaluation

More than half the institutions offered opportunities which would enable pre-service teacher education students to acquire knowledge of the educational value of arts and crafts. The opportunities were offered in a variety of situations. Evidence further showed that 30 per cent of the graduates possessed "adequate knowledge" of this character-

istic. Although there was not extensive opportunity to gain the knowledge concerned with in this criterion, it seemed that a sufficient number of graduates possessed "adequate knowledge" of the criterion, thought to be of "some importance" to beginning teachers, to suggest a strength in the pre-service programs of teacher education.

Criterion 20

> It is of "some importance" for a beginning teacher to possess knowledge of educational value of different kinds of motion picture photographic technique.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--As indicated in Table 20, experiences designed to develop knowledge of motion picture photographic technique were offered in 6, or 60 per cent, of the colleges and universities involved in the study.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Knowledge.--In view of the above evidence, it is not surprising to find that a small percentage of graduates possessed "adequate knowledge" of motion picture photographic technique. As Table 22 revealed, 17 per cent of the graduates indicated "adequate knowledge"; 33 per cent indicated "limited knowledge," and 50 per cent indicated "no knowledge" of the educational value of different kinds of motion picture photo-

graphic techniques.

Courses in Which Graduates Acquired Knowledge.--Table 23 showed that of the graduates possessing "adequate knowledge" of the different kinds of motion picture photographic techniques, 22 per cent indicated they acquired the knowledge in an audio-visual course; 72 per cent from a combination audio-visual course, methods, and student teaching; 6 per cent from methods and/or student teaching; and none from other sources. Table 23 also revealed that of those graduates having "limited knowledge," 15 per cent acquired the knowledge as a result of an audio-visual course; 47 per cent from a combination audio-visual course, methods, and student teaching; 35 per cent from method courses and/or student teaching; and 3 per cent from other sources.

Evaluation

Slightly more than half the institutions offered opportunities for gaining knowledge of different kinds of motion picture photographic techniques and these opportunities were offered in a variety of situations. However, the data further indicated that only 22 per cent of the graduates possessed "adequate knowledge" of different kinds of motion picture photographic techniques. In view of the evidence that limited opportunity was provided pre-service teacher education students for gaining this knowledge, and since very few graduates possessed "adequate knowledge" of this

criterion judged to be of "some importance" to beginning teachers, it seemed that a weakness was indicated in the teacher preparation programs.

PART IV: OPERATION OF AUDIO-VISUAL EQUIPMENT

It is the purpose of Part IV to evaluate, in terms of strengths and weaknesses, the knowledges and competencies possessed by the graduates of the selected institutions with regard to each of ten criteria involving competency in operation of audio-visual equipment: (1) 16mm motion picture projector, (2) combination filmstrip and 2" by 2" slide projector, (3) opaque projector, (4) magnetic recorder; (5) recorder and playback equipment, (6) 3¼" by 4" lantern slide projector, (7) duplicating equipment, (8) public address equipment, (9) tachistoscope, and (10) micro-projector.

Criterion 21

It is "most important" for beginning teachers to possess competency in the operation of the 16mm motion picture projector.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--Table 24 indicates that all colleges and universities provided opportunities for pre-service teacher education students to gain competency in the operation of the 16mm motion picture projector.

TABLE 24

EXTENT TO WHICH TEN OKLAHOMA STATE SUPPORTED COLLEGES AND UNIVERSITIES PROVIDED 1956 TEACHER EDUCATION GRADUATES OPPORTUNITY TO ACQUIRE COMPETENCY IN OPERATION OF AUDIO-VISUAL EQUIPMENT

Experience Characteristic	Number	Per Cent
Operation of:		
motion picture projector	10	100
combination 2" by 2" slide and filmstrip projector	10	100
opaque projector	10	100
magnetic recording equipment	8	80
disc recording equipment	4	40
3¼"by 4" lantern slide projector	10	100
duplicating equipment	3	30
tachistoscope (flash-o-meter)	9	90
public address equipment	4	40
micro-projector	2	20

Professional Courses Offering Planned Experiences.--Some insight into learning situations where colleges and universities offered opportunities which lead to competency in operation of the 16mm motion picture projector can be obtained from data in Table 25. Here it is shown that 10, or 100 per cent, of the institutions provided experience in an audio-visual course; 2 or 20 per cent during student teaching; 1 per cent in student teacher seminars; and 40 per cent in general and special method courses.

It appears, in light of these data, that the institutions depended almost entirely upon the audio-visual course to provide experiences which lead to competency in operating the 16mm projector.

TABLE 25

PERCENTAGE OF TEN COLLEGES AND UNIVERSITIES OFFERING PLANNED EXPERIENCES LEADING TO COMPETENCY IN OPERATION OF AUDIO-VISUAL EQUIPMENT

Learning Situations	Per Cent
Audio-visual course	100
Student teaching	20
Student teaching seminar	1
Special and general methods courses	40

Evidence that should be taken into consideration at this point is tabulated in Table 13. It can be seen that the audio-visual course was elective in all but 20 per cent of the colleges and universities. Method courses were required by 90 per cent of the institutions; 100 per cent required student teaching; and 40 per cent required student teacher seminars.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency. --The breakdown of data in Table 26 indicated that 49 per cent of the graduates possessed "adequate competency" in operation of the 16mm motion picture projector; 24 per cent, "limited competency"; and 27 per cent, "no competency."

Courses in Which Graduates Acquired Competency.--Table 27 shows that of the graduates responding to the "adequate competency" category, 18 per cent felt they acquired the competency in operation of the 16mm motion picture

TABLE 26

EXTENT TO WHICH 216 GRADUATES FROM STATE SUPPORTED COLLEGES AND UNIVERSITIES IN OKLAHOMA POSSESSED COMPETENCY IN OPERATION OF 8 TYPES OF AUDIO-VISUAL EQUIPMENT

Experience Characteristics	Percentage of Responses		
	Adequate Competency	Limited Competency	No Competency
Operation of:			
motion picture projector	49	24	27
combination 2" by 2" slide and filmstrip projector	42	21	37
opaque projector	39	30	31
magnetic recording equipment	21	23	56
disc recording equipment	16	29	55
3¼" by 4" lantern slide projector	36	24	40
duplicating equipment	35	24	41
tachistoscope (flash-o-meter)	15	22	63
public address equipment	17	34	49
micro-projector	11	20	70

projector as a result of experiences in an audio-visual course; 66 per cent from a combination audio-visual course, methods, and student teaching; 14 per cent from methods and/or student teaching; and 2 per cent from other sources.

Table 27 also indicated that the graduates responding to the "limited competency" category received this competency as a result of experiences in an audio-visual course in 7 per cent of the cases; 41 per cent from a combination

TABLE 27

LEARNING SITUATIONS PROVIDING ADEQUATE AND LIMITED COMPETENCY AND PERCENTAGE OF GRADUATES RESPONDING TO EACH

Characteristics	Percentage of Respondents							
	Adequate				Limited			
	AV	AVMST	MST	O*	AV	AVMST	MST	O*
Operation of:								
motion picture projector	18	66	14	2	7	41	49	3
combination 2" by 2" slide and filmstrip projector	18	56	26	0	11	75	11	3
opaque projector	17	67	16	0	12	54	30	4
magnetic recording equipment	21	61	18	0	12	62	24	2
disc recording equipment	9	66	25	0	14	62	22	2
3¼" by 4" lantern slide projector	21	69	10	0	6	67	25	2
duplicating equipment	12	55	32	1	15	59	24	2
tachistoscope (flash-o-meter)	26	67	7	0	18	49	30	3
public address equipment	17	65	18	0	10	56	31	3
micro-projector	28	67	5	0	11	71	18	0

* AV - audio-visual course
AVMST - audio-visual course, methods, and student teaching
MST - method courses and student teaching
O - others

audio-visual course, methods, and student teaching; 49 per cent from methods and/or student teaching; and 3 per cent from other sources. It appeared, in light of these data, that the audio-visual course was significant in the source of experiences leading to "adequate competency" in operation of the 16mm sound motion picture projector.

Evaluation

The evidence points out that all colleges and universities provided experiences which could lead to the development of competency in operation of the 16mm motion picture projector. However, these opportunities were, in most cases, contained within the audio-visual course which was elective in the large majority of the institutions (see Table 13). These data further indicated that a very small percentage of graduates possessed "adequate competency" in the operation of the motion picture projector. There was ample opportunity for teacher education students to gain competency in the operation of the motion picture projector. However, not a large enough percentage of graduates possessed "adequate competency" in this "most important" skill to suggest strength. Thus, it appeared that this aspect of the programs represented a weakness.

Criterion 22

It is "most important" for beginning teachers to possess competency in operation of the combination filmstrip and 2" by 2" slide projector.

Pre-Service Opportunities

Extent of Opportunities.--As indicated by Table 24, experiences designed to develop competency in the operation of the combination filmstrip and 2" by 2" slide projector were offered in 10, or 100 per cent, of the institutions involved in the study.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency.--The extent to which graduates possessed competency in operation of the combination filmstrip and 2" by 2" slide projector is shown in Table 26. There were 42 per cent of the graduates possessing "adequate competency;" 21 per cent, "limited competency"; and 37 per cent, "no competency."

Courses in Which Graduates Acquired Competency.--Data showed that of the graduates responding to the "adequate competency" category, 18 per cent felt they received this competency from an audio-visual course, 56 per cent from a combination audio-visual course, methods, and student teaching; 26 per cent from methods and/or student teaching; and none from other sources. Of those having "limited competency," 11 per cent acquired this competency as a result of an audio-visual course; 75 per cent from a combination audio-visual course, methods, and student teaching; 11 per cent from methods and/or student teaching; and 3 per cent from other sources.

Evaluation

On the basis of this information and in view of the rating of "most important" placed on this criterion by the jury, it is apparent that, although all of the institutions offered opportunities in a variety of elective or semi-elective courses, relatively few graduates possessed "adequate competency" in the operation of the filmstrip and 2" by 2" slide projector. Thus, it seemed that a weakness was indicated in this aspect of the pre-service preparation of teachers in audio-visual education.

Criterion 23

It is "most important" for beginning teachers to possess competency in operation of the opaque projector.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--From an analysis of data presented in Table 24, it is observed that 10, or 100 per cent, of the colleges offered opportunity for pre-service teacher education students to acquire competency in the operation of the opaque projector.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency.--Table 26 showed that only 39 per cent of the graduates possessed "adequate competency" in the operation of the opaque

projector; 30 per cent, "limited competency," and 31 per cent, "no competency." The graduate responses on this item were distributed almost equally among the three categories.

Courses in Which Graduates Acquired Competency.--Table 27 showed that of the graduates possessing "adequate competency," 17 per cent felt they received this competency from an audio-visual course; 67 per cent from a combination audio-visual course, methods, and student teaching; 16 per cent from methods and/or student teaching; and none from other sources. Of those having "limited competency," 12 per cent acquired this competency as a result of an audio-visual course; 54 per cent from a combination audio-visual course, methods, and student teaching; 30 per cent from method courses and/or student teaching; and 4 per cent from other sources.

Evaluation

In view of these data, it is apparent that all colleges and universities offered opportunities for pre-service teacher education students to gain competency in the operation of the opaque projector. Since the jury placed a rating of "most important" on this criterion, it appeared that the number of responses indicating "adequate competency" by the graduates is significantly small. Therefore, it seemed this aspect of pre-service preparation in the area of audio-visual education was weak.

Criterion 24

It is "most important" for beginning teachers to possess competency in operation of the magnetic recorder.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--Data in Table 24 clearly indicated that 8, or 80 per cent, of the colleges and universities involved in this study offered opportunities for pre-service teacher education students to gain competency in the operation of the magnetic recorder.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency.--A large percentage of the graduates reported "no competency" in the operation of the magnetic recorder. As shown in Table 26, only 21 per cent of the graduates possessed "adequate competency"; 23 per cent, "limited competency"; and 56 per cent, "no competency."

Courses in Which Graduates Acquired Competency.--Table 27 indicated that a course in audio-visual education provided necessary experiences for 21 per cent of those persons having "adequate competency" and for 12 per cent having "limited competency." A combination audio-visual course, methods, and student teaching provided necessary experience for 61 per cent of those having "adequate competency" and for 62 per cent having "limited competency." Methods and/or

student teaching provided experience for 18 per cent of the graduates possessing "adequate competency" and 24 per cent of those having "limited competency." Other sources provided 2 per cent of those having "limited competency" with the necessary experiences.

Evaluation

From these data, it is evident that all institutions did not provide opportunities for gaining competency in the operation of the magnetic recorder. Furthermore, a very small percentage of the graduates possessed "adequate competency" of this item considered to be "most important" by the jury. Consequently, it appeared that this aspect of the programs was weak.

Criterion 25

It is of "considerable importance" for a beginning teacher to be competent in the operation of the disc recorder and playback equipment.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--An examination of data in Table 24 showed that 4, or 40 per cent, of the colleges and universities offered opportunities which could lead to the development of the operation of the disc recorder and playback equipment.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency. --Data indicative of the extent to which the graduates possessed competency in the operation of the disc recorder and playback equipment was presented in Table 26. It was shown that 16 per cent possessed "adequate competency"; 29 per cent, "limited competency"; and 55 per cent, "no competency."

Courses in Which Graduates Acquired Competency.--As the data in Table 27 indicated, 9 per cent of the graduates responding to the "adequate competency" category received the competency as a result of an audio-visual course; 66 per cent felt they received this competency from a combination audio-visual course, methods, and student teaching; 25 per cent from methods and/or student teaching; and none from other sources. Of those having "limited competency," 14 per cent acquired the competency as a result of an audio-visual course; 62 per cent from a combination audio-visual course, methods, and student teaching; 22 per cent from method courses and/or student teaching; and 2 per cent from other sources.

Evaluation

The data indicated that a very small percentage of institutions offered opportunities which would enable pre-service teacher education students to gain competency in the operation of disc recorder and playback equipment. They also

showed that a very small percentage of the graduates possessed "adequate competency" in the operation of disc recorder equipment. Therefore, since the jury placed a rating of "considerable importance" on the competency, it seemed this aspect of pre-service preparation of teachers in the area of audio-visual education suggested a weakness.

Criterion 26

It is of "considerable importance" for the beginning teacher to possess competency in operation of the 3¼" by 4" lantern slide projector.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--The data presented in Table 24, showed that 10, or 100 per cent, of the colleges and universities provided opportunities which could lead to the acquiring of competency in the operation of the 3¼" by 4" lantern slide projector.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency.--Data in Table 26 showed that only 38 per cent of the graduates possessed "adequate competency" in operation of the lantern slide projector; 24 per cent, "limited competency"; and 40 per cent, "no competency."

Courses in Which Graduates Acquired Competency.--Of the graduates indicating "adequate competency," 21 per cent

indicated they received this competency as a result of an audio-visual course; 69 per cent from a combination audio-visual course, methods, and student teaching; 10 per cent from methods and/or student teaching; and none from other sources. The above data are shown in Table 27, where it was also shown that of the graduates having "limited competency," 6 per cent acquired the competency as a result of an audio-visual course; 67 per cent from a combination of audio-visual courses, methods, and student teaching; 25 per cent from method courses and/or student teaching; and 2 per cent from other sources.

Evaluation

There is evidence to show that all colleges and universities involved in the study offered opportunities for gaining competency in the operation of the 3¼" by 4" lantern slide projector. However, these opportunities existed primarily in an audio-visual course which is elective in 80 per cent of the institutions (see Tables 13 and 25). Further, it is observed that only 37 per cent of the graduates possessed "adequate competency" in operation of this equipment. As noted above, all institutions provided opportunities for teachers to gain competency in the operation of the lantern slide projector. However, since so few 1956 graduates indicated "adequate competency," it seemed that this aspect of pre-service preparation of teachers in the area of audio-visual education was weak.

Criterion 27

It is of "considerable importance" for a beginning teacher to possess competency in operation of duplicating equipment.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--The state colleges and universities as a whole offered very little opportunity which would enable pre-service teacher education students to achieve competency in the operation of duplicating equipment. This fact is borne out through data presented in Table 24, where it is shown that only 3, or 30 per cent, of the institutions provided experiences which could lead to competency in the operation of duplicating equipment.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency.--It is somewhat surprising to find, when considering these data, that as many as 35 per cent of the graduates possessed "adequate competency" in the operation of duplicating equipment. Table 26 also indicated that 24 per cent of the graduates possessed "limited competency" and 41 per cent of the graduates possessed "no competency."

Courses in Which Graduates Acquired Competency.--Table 27 pointed out the course in audio-visual education provided necessary experiences for 12 per cent of those persons having "adequate competency" and for 15 per cent having

"limited competency." A combination of audio-visual courses, methods, and student teaching provided necessary experience for 55 per cent of those having "adequate competency" and for 59 per cent having "limited competency." Methods and/or student teaching provided experience for 32 per cent of the graduates possessing "adequate competency" and 24 per cent of those having "limited competency." Other sources provided for 1 per cent of those having "adequate competency" and for 2 per cent having "limited competency." Although the audio-visual course was dominant in the preparation for "adequate competency" as well as "limited competency" in the operation of duplicating equipment, it is interesting to note that those having "limited competency" were influenced more by the experiences in the audio-visual course than those having "adequate competency."

Evaluation

Since only three institutions offered experiences leading to competency in the operation of duplicating equipment, it seemed inconsistent to attempt an appraisal of the effectiveness of this aspect of the program in terms of a state-wide evaluation. However, it is quite obvious, especially since the jury placed a rating of "considerable importance" on this criterion, that the extent to which these opportunities were offered represented a weakness in the programs.

Criterion 28

It is of "some importance" for the beginning teacher to possess competency in the operation of the tachistoscope.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--Data in Table 24 indicate that 90 per cent of the colleges and universities involved in the study offered opportunities for pre-service teacher education students to gain competency in the operation of the tachistoscope.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency.--As shown in Table 26, only 15 per cent of the graduates possessed "adequate competency" in the operation of the tachistoscope; 22 per cent, "limited competency"; and 63 per cent, "no competency."

Courses in Which Graduates Acquired Competency.--Table 27 showed that of the graduates possessing "adequate competency," 26 per cent felt they received this competency from an audio-visual course; 67 per cent from a combination audio-visual course, methods, and student teaching; 7 per cent from methods and/or student teaching; and none from other sources. Of those having "limited competency," 18 per cent acquired the competency as a result of an audio-visual course; 49 per cent from a combination audio-visual course,

methods, and student teaching; 30 per cent from method courses and/or student teaching; and 3 per cent from other sources.

Evaluation

A large majority of the colleges and universities offered opportunities for acquiring competency in the operation of the tachistoscope. However, as previously discussed, these opportunities existed primarily in elective courses. (See Tables 13 and 25.) These data further indicated that only 15 per cent of the graduates possessed "adequate competency" in the operation of the tachistoscope. This would seem to indicate that even though a large majority of institutions offered opportunity for gaining this skill, the number of graduate responses to the "adequate competency" category was too few to suggest a strength. Thus, it seemed that preparation of teachers in this area of audio-visual education represented a weakness.

Criterion 29

It is of "some importance" for a beginning teacher to possess competency in the operation of public address equipment.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--As indicated by data in Table 24, experiences designed to develop competency in the operation of public address equipment were offered in 4, or

40 per cent, of the colleges and universities involved in the study.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency. --A very small percentage of graduates from the institutions professed "adequate competency" in operation of public address equipment. An analysis of data in Table 26 indicated that only 17 per cent of the graduates possessed "adequate competency" in the operation of public address equipment; 34 per cent, "limited competency"; and 49 per cent, "no competency."

Courses in Which Graduates Acquired Competency. Data in Table 27 showed that of the graduates responding to the "adequate competency" category, 17 per cent felt they received the competency from an audio-visual course; 65 per cent from a combination audio-visual course, methods, and student teaching; 18 per cent from methods and/or student teaching; and none from other sources. Of those having "limited competency," 10 per cent acquired this competency as a result of an audio visual course; 56 per cent from a combination audio-visual course, methods, and student teaching; 31 per cent from method courses and/or student teaching; and 3 per cent from other sources. Consequently, the audio-visual course was quite instrumental in the development of competency in operation of public address equipment.

Evaluation

The data showed that less than 50 per cent of the colleges and universities involved in the study offered opportunities which would enable pre-service teacher education students to gain competency in operation of public address equipment. Data further show that a very small percentage of the graduates possessed "adequate competency" in this skill. In light of this graduate reaction, and since the jury rated this competency to be of "some importance," it appeared that this aspect of pre-service preparation of teachers was weak.

Criterion 30

It is of "some importance" for the beginning teacher to possess competency in operation of the micro-projector.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--Of the ten criteria treated in this part, fewer colleges and universities offered opportunity leading to development of competency in the operation of the micro-projector than any other. This fact is borne out through data presented in Table 24 where it was indicated that only 2, or 20 per cent, of the institutions provided experiences which could enable development of competency in the operation of the micro-projector.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency.--Data in Table 26 indicated that only 11 per cent of the graduates possessed "adequate competency" in the operation of the micro-projector; 20 per cent, "limited competency"; and 69 per cent, "no competency."

Courses in Which Graduates Acquired Competency.--Data in Table 27 showed the course in audio-visual education provided necessary experiences for 28 per cent of those persons having "adequate competency" and for 11 per cent having "limited competency." A combination of audio-visual courses, methods, and student teaching provided necessary experience for 67 per cent of those having "adequate competency" and for 71 per cent having "limited competency." Methods and/or student eaching provided experience for 5 per cent of the graduates possessing "adequate competency" and 18 per cent of those having "limited competency." Other sources provided none of the experiences for either category. Here again, these data indicated that the audio-visual course had great influence on the development of this competency, both for "adequate competency" and for "limited competency."

Evaluation

The data showed that few colleges and universities offered opportunities for gaining competency in the operation of the micro-projector. There was also evidence that few graduates indicated "adequate competency" in this skill.

Even though the jury considered this criterion to be of only "some importance" to beginning teachers, it appeared that the graduates' reactions were indicative of a weakness.

PART V: MAINTENANCE OF AUDIO-VISUAL EQUIPMENT

This part deals with six criteria concerning maintenance of audio-visual equipment: (1) caring for chalkboard surface, (2) changing lamps in projection equipment, (3) splicing magnetic tape, (4) cleaning and oiling projection equipment, (5) cleaning recording and cutting heads, (6) splicing 16mm motion picture film. An analysis of data and an evaluative statement is presented for each criterion.

Criterion 31

It is of "considerable importance" for the beginning teacher to be competent in caring for chalkboard surfaces.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--It is indicated in Table 28 that 7, or 70 per cent, of the institutions involved in the study reported opportunities for gaining competency in care of chalkboard surfaces.

Professional Courses Offering Planned Experiences.--From data in Table 29, it is observed that 90 per cent of the colleges and universities offered planned experiences

TABLE 28

EXTENT TO WHICH TEN OKLAHOMA STATE SUPPORTED COLLEGES AND UNIVERSITIES PROVIDED 1956 TEACHER EDUCATION GRADUATES OPPORTUNITY TO ACQUIRE COMPETENCY IN MAINTENANCE OF AUDIO-VISUAL EQUIPMENT

Experience Characteristic	Number	Per Cent
Care of chalkboard surface	7	70
Change lamps in projection equipment	10	100
Splicing magnetic tape	10	100
Cleaning and oiling projection equipment	10	100
Cleaning recorder and cutting heads	4	40
Splicing 16mm motion picture film	10	100

TABLE 29

PERCENTAGE OF TEN COLLEGES AND UNIVERSITIES OFFERING PLANNED EXPERIENCES LEADING TO COMPETENCY IN MAINTENANCE OF AUDIO-VISUAL EQUIPMENT

Learning Situation	Per Cent
Audio-visual course	90
Student teaching	20
Student teaching seminar	1
Special and general methods courses	30

in an audio-visual course, 20 per cent in student teaching, 1 per cent in student teacher seminar, and 30 per cent in general and specific method courses. It is obvious that the institutions offering opportunities for acquiring these competencies do so primarily through an audio-visual course.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency. --An indication of the value of opportunities outlined above is shown in Table 30. Of those graduates responding to the questionnaire, 34 per cent possessed "adequate competency"; 32 per cent, "limited competency"; and 34 per cent, "no competency" in the care of chalkboard surfaces.

TABLE 30

EXTENT TO WHICH 1956 GRADUATES FROM STATE SUPPORTED COLLEGES AND UNIVERSITIES IN OKLAHOMA POSSESSED COMPETENCY IN MAINTENANCE OF AUDIO-VISUAL EQUIPMENT

Experience Characteristic	Percentage of Responses		
	Adequate Competency	Limited Competency	No Competency
Care of chalkboard surface	34	32	34
Change lamps in projection equipment	28	22	50
Splicing magnetic tape	19	21	60
Cleaning and oiling projection equipment	23	26	51
Cleaning recorder and cutting heads	7	18	75
Splicing 16mm motion picture film	27	23	50

Courses in Which Graduates Acquired Competency.--Table 31 shows that of the graduates responding to the "adequate competency" category, 15 per cent felt they received competency in care of chalkboard surface as a result of experiences in an audio-visual course; 63 per cent from a

TABLE 31

LEARNING SITUATIONS PROVIDING ADEQUATE AND LIMITED COMPETENCY AND PERCENTAGE OF GRADUATES RESPONDING TO EACH

Characteristics	Percentage of Respondents							
	Adequate				Limited			
	AV	AVMST	MST	O*	AV	AVMST	MST	O*
Care of chalkboard surface	15	63	22	0	11	53	36	0
Change lamps in projection equipment	18	77	5	0	14	53	33	0
Splicing magnetic tape	25	57	19	0	15	65	18	2
Cleaning and oiling projection equipment	15	76	7	2	20	60	18	2
Cleaning recorder and cutting heads	22	57	21	0	6	69	25	0
Splicing 16mm motion picture film	20	69	9	2	14	68	14	4

* AV - audio-visual course
AVMST - audio-visual course, methods, and student teaching
MST - method courses and student teaching
O - others

combination audio-visual course, methods, and student teaching; 22 per cent from methods and/or student teaching; and none from other sources. Table 31 also indicates those graduates responding to the "limited competency" category received this competency as a result of experiences in audio-visual courses in 11 per cent of the cases; 51 per cent from combination audio-visual course, methods, and student teaching; 36 per cent from methods and/or student teaching; and 2 per cent from other sources.

Evaluation

From evidence cited, it appeared that some of the colleges and universities offered opportunities for pre-service teacher education students to gain competency in care of chalkboard surfaces. There seemed to be very little opportunity for all students going through the professional sequence to take advantage of the opportunities as they existed. Data further showed that a very small percentage of graduates possessed "adequate competency" in the care of chalkboard surfaces. Consequently, it appeared that since so few institutions offered opportunity for acquiring this competency rated of "considerable importance" by the jury, and because of the low percentage of graduates indicating "adequate competency," this aspect of the pre-service preparation of teachers in the area of audio-visual education was weak.

Criterion 32

It is of "considerable importance" for the beginning teacher to be competent in changing lamps in projection equipment.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--An indication that institutions of higher learning in Oklahoma recognized the importance of teachers becoming competent in changing projection equipment lamps was shown in Table 28. It was observed that 10, or 100 per cent, of the colleges and universities offered planned experiences which could lead to the development of this competency.

Reactions of Graduates

Degree to Which 1956 Graduates Possessed Competency.--A breakdown of data, by percentage, showing the extent to which graduates possessed competency in changing projection equipment lamps was shown in Table 30. Only 28 per cent indicated they possessed "adequate competency;" 22 per cent, "limited competency"; and 50 per cent, "no competency."

Courses in Which Graduates Acquired Competency.--Table 31 showed that of the graduates responding to the "adequate competency" category, 18 per cent received competency as a result of experiences in an audio-visual course; 77 per cent from combination audio-visual course, methods, and student teaching; 5 per cent from methods and/or student

teaching; and none from other sources. Table 31 also indicated that those graduates responding to the "limited competency" category received competency in changing lamps in projection equipment as a result of experiences in an audio-visual course in 14 per cent of the cases; 53 per cent from a combination of audio-visual courses, methods, and student teaching; 33 per cent from methods and/or student teaching; and none from other sources. Consequently, the audio-visual course had influence on the development of the competency possessed by graduates in changing projection equipment lamps.

Evaluation

Although all of the colleges and universities involved in the study offered opportunities for gaining competency in changing projection equipment lamps, it is apparent that these opportunities were offered as planned experiences in courses which were organized as elective or semi-elective courses. (See Tables 13 and 29.) A further analysis of these data showed that very few graduates possessed "adequate competency" in this facet of audio-visual education. The number of institutions providing opportunity for acquiring this competency seemed to be in keeping with the jury rating of "considerable importance" placed on this criterion. However, too few graduates indicated "adequate competency" in changing projection equipment lamps to warrant an appraisal of strength. Thus, this aspect of the programs of pre-service

preparation of teachers in state supported colleges and universities in Oklahoma was weak.

Criterion 33

It is of "some importance" for the beginning teacher to possess competency in splicing magnetic tape.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--An analysis of data presented in Table 28 pointed out that 10, or 100 per cent, of the colleges and universities selected for the study offered opportunities which could enable pre-service teacher education students to gain competency in splicing magnetic tape.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency.--It was apparent that a large percentage of graduates possessed "no competency" in splicing magnetic tape. Table 30 showed that 19 per cent of the graduates possessed "adequate competency"; 21 per cent, "limited competency"; and 60 per cent, "no competency."

Courses in Which Graduates Acquired Competency.--As Table 31 showed, 25 per cent of the graduates possessed "adequate competency" which they felt they acquired from an audio-visual course; 56 per cent as a result of a combination audio-visual course, methods, and student teaching; 19 per cent from methods and/or student teaching; and none from

other sources. Of those having "limited knowledge," 15 per cent received the basic experiences in an audio-visual course; 65 per cent from a combination audio-visual course, methods, and student teaching; 18 per cent from methods and/or student teaching; and 2 per cent from other sources.

Evaluation

All colleges and universities offered opportunities for pre-service teacher education students to acquire competency in splicing magnetic tape. However, as previously discussed, these opportunities existed primarily in an audio-visual course, and as such, did not offer all students an opportunity to benefit from the experiences (Tables 13 and 29). It has also been pointed out in the analysis of data that a very small percentage of the graduates possessed "adequate competency" in splicing magnetic tape. All institutions offered experiences for gaining this competency, but so few graduates indicated "adequate competency" in the skill that a weakness seemed to be indicated.

Criterion 34

It is of "some importance" for the beginning teacher to possess competency in cleaning and oiling projection equipment.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--All colleges and univer-

sities involved in the study provided opportunities which would make it possible for pre-service teacher education students to acquire necessary competencies in cleaning and oiling projection equipment. This fact was borne out in Table 28 where it was shown that 10, or 100 per cent, of the institutions provided planned experiences dealing with this competency.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency. --Over half the graduates possessed "no competency" in cleaning and oiling projection equipment. Table 30 showed that only 23 per cent of the graduates possessed "adequate competency"; 26 per cent, "limited competency"; and 51 per cent, "no competency."

Courses in Which Graduates Acquired Competency.--Table 31 showed that of the graduates possessing "adequate competency," 15 per cent received the competency from an audio-visual course, while 20 per cent having "limited competency" indicated the audio-visual course as being the source of their competency. A combination audio-visual course, methods, and student teaching provided necessary experiences for 76 per cent of those having "adequate competency," and for 60 per cent of those having "limited competency." Methods and/or student teaching provided experiences for 7 per cent of those having "adequate competency" and for 18 per cent of those having "limited competency." Other

sources provided 2 per cent of those having "adequate competency" as well as those having "limited competency."

Evaluation

Even though the jury placed a rating of "some importance" on this criterion, the above data indicated that all colleges and universities offered planned experiences which would enable teacher education students to acquire competency. However, only a small percentage of graduates possessed "adequate competency" in cleaning and oiling projection equipment. This information seemed to indicate a weakness in the pre-service programs as they existed.

Criterion 35

It is of "some importance" for the beginning teacher to possess competency in cleaning recording and cutting heads.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--As indicated in Table 28, experiences designed to develop competency in cleaning recording and cutting heads were offered in 4, or 40 per cent, of the colleges and universities selected for this study.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency. --The lack of opportunities for gaining competency in cleaning

recording and cutting heads is reflected in data tabulated in Table 20. Here it was shown that only 7 per cent of the graduates reported "adequate competency"; 18 per cent, "limited competency"; and 75 per cent, "no competency."

Courses in Which Graduates Acquired Competency.--Data in Table 31 showed that of the graduates responding to the "adequate competency" category, 22 per cent seemed to feel they received competency in cleaning recording and cutting heads as a result of experiences in an audio-visual course; 57 per cent as a result of a combination audio-visual course, methods, and student teaching; 21 per cent from methods and/or student teaching; and none from other sources. The data also indicated that of the graduates responding to the "limited competency" category, 6 per cent received the competency from an audio-visual course; 69 per cent from a combination audio-visual course, methods, and student teaching; 25 per cent from methods and/or student teaching; and none from other sources.

Evaluation

Only 20 per cent of the colleges and universities offered opportunities which would enable pre-service teacher education students to become competent in cleaning cutting and recording heads, and these were offered in elective and semi-elective courses. Further data showed only 7 per cent of the graduates possessed "adequate competency." Thus, it

would seem that even though the jury rated this competency of "some importance" to the beginning teacher, a weakness was indicated.

Criterion 36

It is of "some importance" for the beginning teacher to possess a competency in splicing 16mm motion picture film.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--All colleges and universities involved in the study offered opportunities which could lead to the acquiring of competency in splicing 16mm motion picture film. Table 28 shows that 10, or 100 per cent, of the institutions offered planned experiences leading to competency in splicing 16mm motion picture film.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency.--Data in Table 30 pointed out that 27 per cent of the graduates possessed "adequate competency" in splicing 16mm motion picture film; 23 per cent, "limited competency"; and 50 per cent, "no competency."

Courses in Which Graduates Acquired Competency.--Data in Table 31 showed that of the graduates reporting "adequate competency," 20 per cent felt they received this competency from an audio-visual course; 69 per cent from a combination

audio-visual course, methods, and student teaching; 9 per cent from methods and/or student teaching; and 2 per cent from other sources. Of those having "limited competency," 14 per cent acquired the competency as a result of an audio-visual course; 68 per cent from a combination audio-visual course, methods, and student teaching; 14 per cent from method courses and/or student teaching; and 4 per cent from other sources.

Evaluation

All colleges and universities offered experiences which could lead to development of competency in the splicing of 16mm motion picture film. However, the experiences were organized in a manner which would prevent many students from benefiting from them (see Tables 13 and 29). Data further showed that only 27 per cent of the graduates indicated "adequate competency" in splicing 16mm film. Since all of the institutions provided opportunity for acquiring the skill, it seemed that there was not a significant number of graduates possessing "adequate competency" in this criterion of "considerable importance" to suggest a strength. Thus, it appeared a weakness in the programs was indicated.

PART VI: UTILIZATION OF AUDIO-VISUAL MATERIALS

This part presents an analysis of data and evaluation on each of fourteen criteria dealing with utilization of

audio-visual materials. They are: (1) preparing a class to use audio-visual materials, (2) developing follow-up activity after using audio-visual materials, (3) selecting materials for a learning situation, (4) evaluating use of audio-visual materials, (5) developing effective listening habits, (6) developing resource units, (7) arranging classrooms for best viewing and listening, (8) organizing and conducting field trips and excursions, (9) dramatization techniques, (10) demonstration techniques, (11) chalkboard drawing and lettering, (12) transferring pictures to a chalkboard, (13) discovering seeing and hearing deficiencies, and (14) making a community survey.

Criterion 37

It is "most important" for the beginning teacher to possess competency in preparing a class to use audio-visual materials.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--Data in Table 32 show that 10, or 100 per cent, of the colleges and universities taking part in the study offered opportunities which would enable pre-service teacher education students to acquire competency in preparing a class to use audio-visual materials.

Professional Courses Offering Planned Experiences.--It is indicated in Table 33 that 100 per cent of the institu-

TABLE 32

EXTENT TO WHICH TEN OKLAHOMA STATE SUPPORTED COLLEGES AND UNIVERSITIES PROVIDED 1956 TEACHER EDUCATION GRADUATES OPPORTUNITY TO ACQUIRE COMPETENCY IN UTILIZATION OF AUDIO-VISUAL MATERIALS

Experience Characteristic	Number	Per Cent
Preparing a class to use audio-visual materials	10	100
Developing follow-up activity	9	90
Selecting teaching materials	10	100
Evaluating use of materials	10	100
Developing effective listening habits on part of students	8	80
Developing resource units	10	100
Arranging classrooms for best possible viewing and listening comfort	9	90
Organizing field trips and excursions	8	80
Dramatization technique	7	70
Demonstration technique	10	100
Chalkboard drawing and lettering	5	50
Transferring pictures to a chalkboard	8	80
Screening students for seeing and hearing deficiencies	5	50
Making a community survey	9	90

TABLE 33

PERCENTAGE OF TEN COLLEGES AND UNIVERSITIES OFFERING PLANNED EXPERIENCES LEADING TO COMPETENCY IN UTILIZATION OF AUDIO-VISUAL MATERIALS

Learning Situation	Per Cent
Audio-visual course	100
Student teaching	50
Student teaching seminar	20
Special and general methods course	80

tions offered experiences which would enable teacher education students to become competent in preparing a class to use audio-visual materials through an audio-visual course; 50 per cent through student teaching; 20 per cent in a student teachers seminar; and 80 per cent in general or specific method courses.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency.--Table 34 is a breakdown of data showing the extent to which graduates possessed competency in preparing a class to use audio-visual materials. "Adequate competency" was possessed by 51 per cent of the graduates; 38 per cent possessed "limited competency"; and 11 per cent, "no competency" in preparing a class to use audio-visual materials.

Courses in Which Graduates Acquired Competency.--Data in Table 35 show that of the graduates responding to the "adequate competency" category, 17 per cent felt they acquired the competency in preparing a class to use teaching materials as a result of experiences in an audio-visual course. A combination audio-visual course, methods, and student teaching provided 63 per cent of the graduates with the competency in preparing a class to use teaching materials; methods and/or student teaching provided 20 per cent of the graduates with the competency; and none were provided from other sources. Table 35 also indicates those graduates

TABLE 34

EXTENT TO WHICH 216 GRADUATES FROM STATE SUPPORTED COLLEGES AND UNIVERSITIES IN OKLAHOMA POSSESSED COMPETENCY IN UTILIZATION OF AUDIO-VISUAL MATERIALS

Experience Characteristics	Percentage of Responses		
	Adequate Competency	Limited Competency	No Competency
Preparing a class to use audio-visual materials	51	38	11
Developing follow-up activity	53	34	13
Selecting teaching materials	41	44	15
Evaluating use of materials	45	43	12
Developing effective listening habits on part of students	45	42	13
Developing resource units	44	41	15
Arranging classrooms for best possible viewing and listening comfort	46	39	15
Organizing and conducting field trips and excursions	39	42	19
Dramatization technique	36	40	24
Demonstration technique	59	29	12
Chalkboard drawing and lettering	28	41	31
Transferring picture to a chalkboard	25	43	32
Screening student for seeing and hearing deficiencies	25	36	38
Making a community survey	27	42	31

responding to the "limited competency" category received this competency as a result of experiences in an audio-visual course in 4 per cent of the cases; 40 per cent from a com-

TABLE 35

LEARNING SITUATIONS PROVIDING ADEQUATE AND LIMITED COMPETENCY AND PERCENTAGE OF GRADUATES RESPONDING TO EACH

Characteristics	Percentage of Respondents							
	Adequate				Limited			
	AV	AVMST	MST	O*	AV	AVMST	MST	O*
Preparing a class to use audio-visual materials	17	63	20	0	4	40	52	4
Developing follow-up activity	14	62	23	1	7	38	51	4
Selecting teaching materials	14	63	23	0	8	46	43	3
Evaluating use of materials	15	59	25	1	7	48	41	4
Developing effective listening habits on part of students	12	56	30	2	10	51	36	3
Developing resource units	16	57	26	1	7	47	42	4
Arranging classrooms for best viewing and listening comfort	17	59	23	1	8	46	42	4
Organizing and conducting field trips and excursions	12	58	29	1	11	48	40	1
Dramatization technique	12	50	36	2	12	54	33	1
Demonstration technique	12	55	32	1	13	44	42	1
Chalkboard drawing and lettering	8	52	40	0	17	46	36	1
Transferring pictures to a chalkboard	9	65	24	2	11	49	40	0
Screening students for seeing and hearing deficiencies	12	57	31	0	16	56	27	1
Making a community survey	14	57	29	0	8	53	39	0

* AV - audio-visual course
AVMST - audio-visual course, methods, and student teaching
MST - method courses and student teaching
O - others

bination audio-visual course, methods, and student teaching; 52 per cent from methods and/or student teaching; and 4 per cent from other sources.

Evaluation

Evidence shows that all Oklahoma state supported colleges and universities offered opportunities which would enable prospective teachers to become competent in preparing a class to use audio-visual materials. These opportunities were offered in a number of learning situations. However, only a small number of graduates possessed "adequate competency" in this "most important" area. Thus, it appeared that the opportunities, as they existed, represented a weakness in the pre-service preparation of teachers in the area of audio-visual education.

Criterion 38

It is "most important" for the beginning teacher to possess competency in developing follow-up activity.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--As indicated by Table 32, experiences designed to develop competency in developing follow-up activity were offered in 9, or 90 per cent of the colleges and universities involved in the study.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency. --An examination of Table 34 revealed that 53 per cent of the graduates possessed "adequate competency" in developing follow-up activity; 34 per cent, "limited competency"; and 13 per cent, "no competency."

Courses in Which Graduates Acquired Competency.--As revealed by data in Table 35, of the graduates responding to the "adequate competency" category, 14 per cent of the time they received the competency as a result of an audio-visual course; 62 per cent from a combination audio-visual course, methods, and student teaching; 23 per cent as a result of experiences in methods and/or student teaching; and 1 per cent from other sources. Of those having "limited competency," 7 per cent acquired the competency as a result of an audio-visual course; 38 per cent from a combination audio-visual course, methods, and student teaching; 51 per cent from methods and/or student teaching; and 4 per cent from other sources.

Evaluation

The data indicated that all colleges and universities involved in the study offered opportunities to gain competency in developing follow-up activity and that these opportunities were broad based (see Tables 13 and 33). A further analysis of the data revealed that, although all colleges and universities offered opportunities, only 53 per cent of

the responding graduates indicated "adequate competency" in this "most important" criterion. In this regard, it appeared a weakness was suggested.

Criterion 39

It is "most important" for the beginning teacher to possess competency in using criteria in selecting teaching materials for a learning situation.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--The majority of institutions of higher learning recognized the importance of pre-service teacher education students having experiences which could develop competency in the use of criteria for selecting teaching materials. In Table 32 it is shown that 10, or 100 per cent, of the institutions provided opportunities for acquiring this competency.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency.--As indicated in Table 34, only 41 per cent of the graduates possessed "adequate competency" in using criteria for selecting materials; 44 per cent, "limited competency"; and 15 per cent, "no competency."

Courses in Which 1956 Graduates Acquired Competency.--Data in Table 25 indicated that of the graduates having "adequate competency," 14 per cent did so as a result of

experiences in an audio-visual course; 63 per cent from a combination of audio-visual courses, methods and student teaching; 23 per cent from methods and/or student teaching; and none from other sources. Of those having "limited competency," 8 per cent acquired it from an audio-visual course; 46 per cent from a combination of audio-visual course, methods, and student teaching; 43 per cent from methods and/or student teaching; and 3 per cent from other sources. The course in audio-visual education appeared to be influential in providing graduates with "adequate competency" in selecting teaching materials for a specific purpose.

Evaluation

Evidence seemed to indicate that there was ample opportunity for pre-service teacher education students to acquire competency in the use of criteria for selecting audio-visual materials. All colleges and universities offered these experiences in an audio-visual course, which was elective in 80 per cent of the institutions (Table 13), while some offered them in method courses and student teaching experiences. However, it is observed that less than half the graduates possessed "adequate competency" in using criteria when selecting materials of instruction. Considering the value of "most important" placed on this criterion by the jury, and in light of the extent to which opportunity

existed, it seemed that too few graduates possessed "adequate competency" in selecting audio-visual materials. Thus, it appeared this facet of pre-service preparation of teachers in state supported colleges and universities of Oklahoma represented a weakness.

Criterion 40

It is "most important" for the beginning teacher to possess competency in evaluating use of audio-visual materials.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities. Data in Table 32 indicated that 10, or 100 per cent, of the institutions offered opportunities which would provide pre-service teacher education students experiences leading to competency in evaluating the use of audio-visual materials.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency. --There appeared to be very little difference between the percentages of graduates possessing "adequate competency" and "limited competency." Data in Table 34 showed that only 45 per cent of the graduates reported "adequate competency"; 43 per cent indicated "limited competency"; and 12 per cent, "no competency" in evaluating use of audio-visual materials.

Courses in Which Graduates Acquired Competency.--Data in Table 35 showed that of the graduates possessing "adequate

competency" in evaluating use of audio-visual materials, 15 per cent acquired this competency as a result of an audio-visual course; 59 per cent as a result of a combination audio-visual course, method courses, and student teaching; 25 per cent from methods and/or student teaching; and 1 per cent from other sources. Of those having "limited competency," 7 per cent reported they acquired the competency as a result of an audio-visual course; 48 per cent as a result of a combination audio-visual course, methods, and student teaching; 41 per cent from methods and/or student teaching; and 4 per cent from other sources.

Evaluation

There was evidence indicating that widespread opportunities existed among Oklahoma state supported colleges and universities which would enable pre-service teacher education students to become competent in evaluating use of audio-visual materials. However, further evidence showed that only 45 per cent of the graduates possessed "adequate competency" in evaluating use of audio-visual materials. Since the jury placed a rating of "most important" on this criterion, and in light of the above information, it appeared that this aspect of the programs was weak.

Criterion 41

It is "most important" for the beginning teacher to possess competency in developing effective listening habits on the part of the students.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--It was indicated in Table 32 that 8, or 80 per cent, of the institutions of higher learning involved in the study offered pre-service teacher education students an opportunity to acquire competency in developing effective listening habits on the part of the students.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency.--Since only 80 per cent of the institutions offered opportunities for gaining competency of this criterion, it is interesting to note, as Table 34 showed, that only 45 per cent of the graduates possessed "adequate competency" in developing effective listening habits on the part of students; 42 per cent possessed "limited competency"; and 13 per cent, "no competency."

Courses in Which Graduates Acquired Competency.--Data in Table 34 showed that of the graduates indicating "adequate competency," 12 per cent acquired the competency as a result of experiences in an audio-visual course; 56 per cent from a combination audio-visual course, methods, and student teaching; 30 per cent from methods and/or student teaching; and 2 per cent from other sources. The data also showed that of the graduates having "limited competency," 10 per cent re-

ceived the basic experience from an audio-visual course; 51 per cent from a combination audio-visual course, methods, and student teaching; 36 per cent from methods and/or student teaching; and 3 per cent from other sources.

Evaluation

Opportunities existed in only 8 Oklahoma state supported colleges and universities which would enable pre-service teacher education students to acquire competency in developing effective listening habits on the part of students. As previously stated, these opportunities were offered in a variety of learning situations (see Tables 13 and 33). It was also brought out in the analysis that only 45 per cent of the graduates possessed "adequate competency" in this area. As pointed out, a majority of institutions provided opportunities for gaining competency in developing effective listening habits; however, relatively few 1956 graduates possessed "adequate competency" in this "most important" criterion. Thus, it appeared a weakness was indicated in the programs.

Criterion 42

It is "most important" for the beginning teacher to possess competency in developing resource units.

Analysis of Data

Pre-Service-Opportunities

Extent of Opportunities.--Data in Table 32 indicated that 10, or 100 per cent of the colleges and universities selected for the study offered opportunities which would provide pre-service teacher education students experiences leading to competency in the development of resource units.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency.--Less than half of the 216 graduates used for the study indicated "adequate competency" in developing resource units. Table 34 showed that only 44 per cent of the graduates possessed "adequate competency"; 41 per cent, "limited competency"; and 15 per cent, "no competency."

Courses Where Graduates Acquired Competency.--Data in Table 35 indicated that of the graduates possessing "adequate competency," 16 per cent reported they received basic experiences in an audio-visual course; 57 per cent from a combination audio-visual course, methods, and student teaching; 26 per cent from methods and/or student teaching; and 1 per cent from other sources. Of those having "limited competency," 7 per cent had basic experiences in an audio-visual course; 47 per cent from a combination audio-visual course, methods, and student teaching; 42 per cent from methods and/or student teaching; and 4 per cent from other sources.

Evaluation

It is evident that opportunities for acquiring compe-

tency in the development of resource units was general among Oklahoma state supported institutions of higher learning. However, the data also indicated that a very small percentage of graduates possessed the competency when they entered the classroom as a professional teacher. Since the jury placed a rating of "most important" on this criterion, it appeared, in light of the above evidence, that the opportunities as they existed represented a weakness in the programs of pre-service preparation of teachers in the area of audio-visual education.

Criterion 43

It is "most important" for beginning teachers to possess competency in arranging a classroom for the best possible viewing and listening comfort.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--As indicated in Table 32, there were 9, or 90 per cent, of the state supported colleges and universities in Oklahoma offering opportunities which would enable pre-service teacher education students to develop competency in arranging classrooms for the best possible viewing and listening comfort.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency.--It should be noted that Table 34 showed only 46 per cent

of the 1956 graduates possessed "adequate competency" in arranging classrooms for best possible viewing and listening comfort; 39 per cent reported "limited competency"; 15 per cent, "no competency."

Courses in Which Graduates Acquired Competency.--Data in Table 35 showed that of the graduates possessing "adequate competency," 17 per cent indicated they received this competency as a result of experiences in an audio-visual course; 59 per cent from a combination audio-visual course, methods, and student teaching; 23 per cent from methods and/or student teaching; and 1 per cent from other sources. Table 35 also showed that of those graduates having "limited competency," 8 per cent received the basic experience from a course in audio-visual education; 46 per cent from a course in audio-visual education in combination with methods and student teaching; 42 per cent from methods and/or student teaching; and 4 per cent from other sources. It appeared from these data, that the audio-visual course had considerable influence on the extent to which graduates possessed competency in arranging classrooms for the best possible viewing and listening comfort.

Evaluation

Even though a large majority of institutions involved in the study offered opportunities for gaining competency in arranging classrooms for best possible viewing and listening comfort, a small percentage of graduates had

an "adequate grasp of this "most important" skill. Consequently, it appeared that this aspect of pre-service preparation of teachers in the area of audio-visual education represented a weakness.

Criterion 44

It is "most important" for the beginning teacher to possess competency in organizing and conducting field trips and excursions.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--As indicated in Table 32, only 8, or 80 per cent, of the Oklahoma state supported institutions of higher learning offered opportunities which would provide experiences leading to the development of competency in organizing field trips and excursions.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency.--Evidence that the opportunities as they existed are not as effective as they could be is presented in Table 34. Here it was shown that only 39 per cent of the graduates possessed "adequate competency" in organizing field trips and excursions; while 42 per cent possessed "limited competency"; and 19 per cent, "no competency."

Courses in Which Graduates Acquired Competency.--Data in Table 35 showed that of the graduates having "adequate

competency," 12 per cent received the necessary experiences in an audio-visual course; 58 per cent from a combination audio-visual course, methods, and student teaching; 29 per cent from methods and/or student teaching; and 1 per cent from other sources. Table 35 also showed that of those graduates having "limited competency," 11 per cent developed skill as a result of experience in an audio-visual course; 48 per cent from a combination of experiences in an audio-visual course, methods, and student teaching; 40 per cent from methods and/or student teaching; and 1 per cent from other sources.

Evaluation

There is considerable evidence to indicate that a large majority of institutions involved in the study offered opportunities for gaining competency in organizing and conducting field trips and excursions and that these opportunities were offered in a variety of learning situations. Even though these opportunities existed, a very small percentage of 1956 graduates possessed competency in organizing and conducting field trips and excursions. Since the jury placed a rating of "most important" on this criterion, it appeared that this low percentage of "adequate competency" responses was indicative of a weakness in the state programs for preparing teachers in the area of audio-visual education.

Criterion 45

It is "most important" for beginning teachers to possess competency in dramatization techniques.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--As data showed in Table 32, only 7, or 70 per cent, of the colleges and universities offered opportunities which could lead to the development of competency in dramatization technique.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency. --An indication of the effectiveness of experiences in the institutions was shown in data presented in Table 34 which showed that only 36 per cent of the graduates possessed "adequate competency" in dramatization technique; 40 per cent, "limited competency"; and 24 per cent, "no competency."

Courses in Which Graduates Acquired Competency.--Data in Table 35 showed that of the graduates responding to the "adequate competency" category, 12 per cent felt they received competency in dramatization technique as a result of experiences in an audio-visual course; 50 per cent from a combination audio-visual course, methods, and student teaching; 35 per cent from methods and/or student teaching; and 2 per cent from other sources. Table 35 also indicated that graduates responding to the "limited competency" category acquired the competency as a result of experiences in an audio-visual course in 12 per cent of the cases; 54 per cent from a combination audio-visual course, methods, and student teaching;

33 per cent in methods and/or student teaching; and 1 per cent from other sources. There is very little difference between the percentage of responses under the "adequate competency" category and "limited competency" category. This seemed to imply that there was no one learning situation making an outstanding contribution to the acquisition of competency in this criterion.

Evaluation

As these data showed, only a small majority of the colleges and universities offered opportunities to pre-service teacher education students which would enable them to become competent in dramatization technique. Furthermore, a very small percentage of the graduates possessed "adequate competency" in dramatization technique. Consequently, it appeared, since the jury placed a rating of "most important" on this criterion, that this facet of pre-service teacher preparation in audio-visual education represented a weakness.

Criterion 46

It is of "considerable importance" for the beginning teacher to possess competency in demonstration technique.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--A breakdown of data pre-

sented in Table 32 indicated that 10, or 100 per cent, of the colleges and universities involved in the study offered opportunities which could enable pre-service teacher education students to acquire competency in demonstration technique.

Reactions of Graduates

Extent to Which Graduates Possessed Competency.--The graduate responses to this criterion show a near normal distribution. As indicated in Table 34, 59 per cent of the graduates possessed "adequate competency" in demonstration technique; 29 per cent, "limited competency"; and 12 per cent, "no competency."

Courses in Which Graduates Acquired Competency.--Data in Table 35 showed that of the graduates possessing "adequate competency," 12 per cent felt they acquired the competency as a result of experiences in an audio-visual course; 55 per cent as a result of experiences in a combination audio-visual course, methods, and student teaching; 32 per cent from methods and/or student teaching; and 1 per cent from other sources. Table 35 also showed that of those graduates possessing "limited competency," 13 per cent acquired it as a result of an audio-visual course; 44 per cent from a combination audio-visual course, methods, and student teaching; 42 per cent from methods and/or student teaching; and 1 per cent from other sources. Consequently, it appeared that a course in audio-visual education influenced those graduates

having "adequate competency" more than it did those having "limited competency."

Evaluation

The large number of colleges and universities offering opportunities for becoming competent in demonstration technique, clearly indicated that the institutions were in conformity with the criterion. However, it was further indicated that a relatively small percentage of graduates possessed "adequate competency" in demonstration technique. In light of this, it appeared these opportunities, as they existed, represented a weakness.

Criterion 47

It is of "considerable importance" for the beginning teacher to possess competency in chalkboard drawing and lettering.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--As indicated in Table 32, only 5, or 50 per cent, of the Oklahoma state supported institutions of higher learning provided opportunities which would enable pre-service teacher education students to acquire competency in chalkboard drawing and lettering.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency.--As might be expected in the light of the above evidence,

approximately one-fourth of the graduates possessed "adequate competency" in chalkboard drawing and lettering. Table 34 showed that only 28 per cent of the graduates possessed "adequate competency" in this skill; 41 per cent, "limited competency"; and 31 per cent, "no competency."

Courses in Which Graduates Acquired Competency.--Data in Table 35 showed that of the graduates possessing "adequate competency" in chalkboard lettering and drawing, only 8 per cent received the necessary experiences in an audio-visual course; 52 per cent from a combination audio-visual course, methods, and student teaching; 40 per cent from methods and/or student teaching; and none from other sources. Those having "limited competency" did so as a result of experiences in an audio-visual course in 17 per cent of the cases; 46 per cent as a result of a combination audio-visual course, methods, and student teaching; 36 per cent as a result of methods and/or student teaching experiences; and 1 per cent from other sources.

Evaluation

It was apparent that there was a systematic and continuous effort on behalf of the majority of colleges and universities to provide opportunities which would enable preservice teacher education students to gain competency in chalkboard drawing and lettering. However, evidence showed a very small percentage of graduates possessed "adequate competency" in the skill. In view of this, and the fact that

the jury rated this criterion of "considerable importance," it appeared the opportunities as they existed represented a weakness.

Criterion 48

It is of "considerable importance" for the beginning teacher to possess competency in transferring pictures to a chalkboard.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--It is indicated in Table 32 that 8, or 80 per cent, of the colleges and universities selected for this study offered opportunities leading to the development of competency in transferring pictures to a chalkboard.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency.--A small percentage of graduates possessed "adequate competency" in transferring pictures to a chalkboard. This observation is from data presented in Table 34 where it was shown that only 25 per cent of the graduates possessed "adequate competency"; 43 per cent, "limited competency"; and 32 per cent, "no competency."

Courses in Which Graduates Acquired Competency.--Data in Table 35 showed that of the graduates possessing "adequate competency," only 9 per cent indicated they received the

competency from experiences in an audio-visual course, while those having "limited competency" acquired it from an audio-visual course 11 per cent of the time. A combination audio-visual course, methods, and student teaching experiences provided 65 per cent of those having "adequate competency" with the necessary opportunities while 49 per cent of those having "limited competency" received their competency as a result of this combination of learning situations. Of those having "adequate competency," 24 per cent acquired the skill through methods and/or student teaching; 40 per cent of those having "limited competency" did so as a result of methods and/or student teaching; 2 per cent of the "adequate competency" group received basic experiences from other sources while none of the "limited competency" group received experiences from other sources.

Evaluation

These data seemed to point out that various opportunities existed in the majority of Oklahoma state supported colleges and universities which would enable teacher education students to acquire competency in transferring pictures to a chalkboard. However, the data also show that a very small percentage of the graduates possessed "adequate competency" in this skill. Therefore, since the jury rated this criterion of "considerable importance" to beginning teachers, it appeared that the opportunities, as they existed, represented a weakness.

Criterion 49

It is of "considerable importance" for the beginning teacher to possess competency in screening students for seeing and hearing deficiencies.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--Data in Table 32 indicated that only 5, or 50 per cent, of the Oklahoma state supported institutions of higher learning provided opportunities for pre-service teacher education students to become competent in screening for seeing and hearing deficiencies.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency.--A small percentage of graduates responded to the "adequate competency" category. Table 34 pointed out that only 25 per cent of the graduates possessed "adequate competency"; 36 per cent possessed "limited competency"; and 39 per cent, "no competency."

Courses in Which Graduates Acquired Competency.--Data in Table 35 showed that of the graduates possessing "adequate competency," 12 per cent received their basic experiences in an audio-visual course; 57 per cent from a combination audio-visual course, methods, and student teaching; 31 per cent from methods and/or student teaching; and none from other sources. There was evidence also that of those graduates

possessing "limited competency," 16 per cent acquired the competency as a result of experiences in an audio-visual course; 56 per cent from a combination audio-visual course, methods, and student teaching; 27 per cent from methods and/or student teaching; and 1 per cent from other sources.

Evaluation

On the basis of the above information it was apparent that very few graduates possessed "adequate competency" in screening students for seeing and hearing deficiencies. This was probably due, in part, to the lack of opportunities offered in the pre-service teacher education sequence. Since the jury rated this criterion of "considerable importance, it appeared that the extent of offerings, as well as graduate reactions, were so limited that a weakness was indicated in the pre-service programs.

Criterion 50

It is of "some importance" for the beginning teacher to possess competency in making a community survey.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--As indicated by data tabulated in Table 32, only 9, or 90 per cent, of the colleges and universities offered opportunities which would enable pre-service teacher education students to have experiences from which they could develop competency in making community

surveys.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency. --The responses from the graduates on this item show a fairly normal distribution. Data in Table 34 showed that 27 per cent of the graduates possessed "adequate competency"; 52 per cent, "limited competency"; and 31 per cent, "no competency."

Courses in Which Graduates Acquired Competency. Data in Table 35 showed that of the graduates possessing "adequate competency," 14 per cent acquired the competency as a result of experiences in an audio-visual course; 57 per cent from a combination audio-visual course, methods, and student teaching; 29 per cent from methods and/or student teaching; and none from other sources. Table 25 pointed out that of those graduates possessing "limited competency," only 8 per cent acquired it from basic experiences in an audio-visual course; 53 per cent from a combination audio-visual course, methods, and student teaching; 39 per cent from methods and/or student teaching; and none from other sources.

Evaluation

These data imply that a considerable number of colleges and universities offered opportunities which could provide pre-service teacher education students experiences leading to competency in making a community survey. These

opportunities were offered, to some extent, in a variety of learning situations (see Tables 13 and 23). The percentage of responses from the graduates to the "adequate competency" category seemed to be significant in the light of the rating of "some importance" placed on this criterion by the jury. Thus, it seemed that this aspect of pre-service preparation of teachers had adequate strength.

PART VII: PRODUCTION OF AUDIO-VISUAL MATERIALS

The criteria dealt with in this part are related to the production of audio-visual materials. An analysis and appraisal of seventeen types of audio-visual materials are included: (1) 3¼" by 4" lantern slides; (2) flat pictures; (3) specimens and objects; (4) charts, maps, and posters; (5) feltboards; (6) construction of models; (7) displays; (8) exhibits and dioramas; (9) duplicating stencils; (10) recordings; (11) 2" by 2" slides; (12) photographic pictures; (13) filmstrips; (14) radio programs; (15) television programs; (16) motion pictures; and (17) developing and printing still pictures.

Criterion 51

It is "most important" for the beginning teacher to be competent in preparing 3¼" by 4" handmade lantern slides.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--Table 36 shows that 10, or 100 per cent, of the colleges and universities taking part in the study offered opportunities which would enable pre-service teacher education students to acquire competency in preparing 3¼" by 4" homemade lantern slides.

TABLE 36

EXTENT TO WHICH TEN OKLAHOMA STATE SUPPORTED COLLEGES AND UNIVERSITIES PROVIDED 1956 TEACHER EDUCATION GRADUATES OPPORTUNITY TO ACQUIRE COMPETENCY IN PRODUCTION OF AUDIO-VISUAL MATERIALS

Experience Characteristic	Number	Per Cent
Preparing 3¼" by 4" handmade lantern slides	10	100
Mounting, filing, and classifying flat pictures	8	80
Mounting, filing, and classifying specimens and objects	4	40
Making maps, charts, and posters	10	100
Preparing feltboards and feltboard materials	9	90
Construction of models	6	60
Construction of displays	9	90
Preparing exhibits and dioramas	7	70
Production of duplicating stencils	4	40
Making recordings	9	90
Production of 2" by 2" slides	5	50
Production of photographic pictures	3	30
Production of filmstrips	2	20
Production of radio programs	5	50
Production of television programs	2	20
Production of motion pictures	3	30
Developing and printing still pictures	4	40

Professional Courses Offering Planned Experiences.--Data in Table 37 show that 100 per cent of the institutions

TABLE 37

PERCENTAGE OF TEN COLLEGES AND UNIVERSITIES OFFERING PLANNED EXPERIENCES LEADING TO COMPETENCY IN PRODUCTION OF AUDIO-VISUAL MATERIALS

Learning Situation	Per Cent
Audio-visual course	100
Student teaching	60
Student teaching seminar	20
Special and general methods	70

offered experiences through an audio-visual course which would enable pre-service teacher education students to gain competency in preparing 3¼" by 4" handmade lantern slides.

The data also show that 60 per cent of the institutions offered necessary experience through student teaching, 20 per cent in student teacher seminars, and 70 per cent in general or specific method courses.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency.--As indicated in Table 38, only 23 per cent of the graduates possessed "adequate competency" in the preparation of 3¼" by 4" handmade lantern slides; 26 per cent possessed "limited competency," and 51 per cent, "no competency."

Courses in Which Graduates Acquired Competency.--Table 39 shows 15 per cent of the graduates felt they received competency in preparation of 3¼" by 4" handmade lantern slides from experience in an audio-visual course.

TABLE 38

EXTENT TO WHICH 216 GRADUATES FROM STATE SUPPORTED COLLEGES AND UNIVERSITIES IN OKLAHOMA POSSESSED COMPETENCY IN THE PRODUCTION OF AUDIO-VISUAL MATERIALS

Experience Characteristic	Percentage of Responses		
	Adequate Competency	Limited Competency	No Competency
Preparing 3¼" by 4" hand-made lantern slides	23	26	51
Mounting, filing, and classifying flat pictures	34	28	38
Mounting, filing, and classifying specimens and objects	30	33	37
Making maps, charts, and posters	41	41	18
Preparing feltboards and feltboard materials	36	35	29
Construction of models	25	43	32
Construction of displays	38	43	19
Preparing exhibits and dioramas	26	41	33
Production of duplicating stencils	51	22	27
Making recordings	21	32	47
Production of 2" by 2" slides	20	24	56
Production of photographic pictures	12	21	67
Production of filmstrips	5	14	81
Production of radio programs	12	16	72
Production of television programs	8	15	77
Production of motion pictures	11	15	74
Developing and printing still pictures	9	12	79

TABLE 39

LEARNING SITUATIONS PROVIDING ADEQUATE AND LIMITED COMPETENCY AND PERCENTAGE OF GRADUATES RESPONDING TO EACH

Experience Characteristic	Percentage of Respondents							
	Adequate				Limited			
	AV	AVMST	MST	O*	AV	AVMST	MST	O*
Preparing 3¼" by 4" handmade lantern slides	15	77	6	2	11	65	24	0
Mounting, filing, and classifying flat pictures	15	54	25	6	12	59	27	2
Mounting, filing, and classifying specimens and objects	9	55	34	2	16	58	24	2
Making maps, charts, and posters	12	59	28	1	11	51	38	0
Preparing feltboards and feltboard materials	18	54	28	0	7	54	36	3
Construction of models	14	56	30	0	13	50	36	1
Construction of displays	15	55	30	0	9	49	39	3
Preparing exhibits and dioramas	11	63	24	2	9	52	39	0
Production of duplicating stencils	14	53	32	1	0	60	37	3
Making recordings	15	61	24	0	8	67	22	3
Production of 2" by 2" slides	10	78	12	0	16	66	16	2
Production of photographic pictures	19	43	38	0	10	56	34	0
Production of filmstrips	0	78	22	0	12	38	42	8
Production of radio programs	4	57	39	0	10	58	29	3

TABLE 39--Continued

Experience Characteristic	Percentage of Respondents							
	Adequate				Limited			
	AV	AVMST	MST	O*	AV	AVMST	MST	O*
Production of television programs	6	56	38	0	15	42	39	4
Production of motion pictures	10	65	25	0	10	56	27	7
Developing and printing still pictures	13	67	20	0	18	55	27	0

* AV - audio-visual course
AVMST - audio-visual course, methods, and student teaching
MST - method courses and student teaching
O - others

A combination audio-visual course, methods, and student teaching gave 77 per cent of the graduates competency in the preparation of 3¼" by 4" handmade lantern slides; 6 per cent gained the competency from methods and/or student teaching; and 2 per cent from other sources.

The data also indicate that the graduates responding to the "limited competency" category received this competency as a result of experiences in an audio-visual course in 11 per cent of the cases; 65 per cent from a combination audio-visual course, methods, and student teaching; 24 per cent from methods and/or student teaching; and none from other sources.

Evaluation

It was evident that there was substantial opportunity for pre-service teacher education students to gain competency in the preparation of 3¼" by 4" handmade lantern slides. However, only a very small percentage of graduates possessed "adequate competency" in preparing the handmade lantern slides. Thus, it seemed, in light of the "most important" value placed on this criterion by the jury, that this facet of pre-service teacher preparation in audio-visual education represented a weakness.

Criterion 52

It is of "considerable importance" for the beginning teacher to be competent in mounting, filing, and classifying flat pictures.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--Table 36 showed only 8, or 80 per cent, of the institutions involved in the study offered opportunities which would enable pre-service teacher education students to acquire competency in mounting, filing, and classifying flat pictures.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency.--Data presented in Table 38 showed that only 34 per cent of the graduates possessed "adequate competency"; 28 per cent, "limited competency"; and 38 per cent, "no competency" in mounting, filing, and classifying flat pictures.

Courses in Which Graduates Acquired Competency.--Table 39 showed that of the graduates possessing "adequate competency," 39 per cent felt they acquired the competency as a result of experiences in an audio-visual course; 60 per cent from a combination audio-visual course, methods, and student teaching; 25 per cent from methods and/or student teaching; and none from other sources. Table 39 also brought out the fact that of those possessing "limited competency," 12 per cent did so as a result of experiences in an audio-visual course; 59 per cent from a combination audio-visual course, methods, and student teaching; 27 per cent from methods and/or student teaching; and 2 per cent from other

sources. This would indicate that there was very little difference in the sources of competency between those having "adequate competency" and those having "limited competency."

Evaluation

There was evidence to show that opportunities for gaining competency in mounting, filing, and classifying flat pictures existed in 80 per cent of the colleges and universities. The opportunities were provided in a variety of learning situations, none of which seemed to exert an outstanding amount of influence on the degree to which the competency was possessed. As stated, a majority of the institutions provided opportunities for acquiring the competency concerned with in this criterion. However, too few graduates indicated "adequate competency" on this characteristic rated "most important" by the jury for it to be judged strong. Thus, it seemed a weakness was indicated.

Criterion 53

It is of "considerable importance" for the beginning teacher to be competent in mounting, filing, and classifying specimens and objects.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--Data in Table 36 showed that only 4, or 40 per cent, of the colleges and universities offered opportunities for gaining competency in the mounting,

filing, and classifying of specimens and objects.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency. --As might be expected, in the light of the above information, very few graduates possessed "adequate competency" in mounting, filing, and classifying specimens and objects. Table 38 showed that only 30 per cent possessed "adequate competency"; 33 per cent possessed "limited competency"; and 37 per cent possessed "no competency."

Courses in Which Graduates Acquired Competency.--Table 39 showed that of the graduates possessing "adequate competency" in mounting, filing, and classifying objects and specimens, 9 per cent did so as a result of planned experiences received in an audio-visual course; 55 per cent in a combination audio-visual course, methods and student teaching; 34 per cent from methods and/or student teaching; and 2 per cent from other sources. Table 39 also shows that of those possessing "limited competency," 16 per cent felt they acquired the competency from experiences in an audio-visual course; 58 per cent from a combination audio-visual course, methods, and student teaching; 24 per cent from methods and/or student teaching; and 2 per cent from other sources.

Evaluation

A small percentage of all colleges and universities offered experiences leading to competency in mounting, filing,

and classifying specimens and objects. Also, too few graduates indicated "adequate competency" in this skill rated to be of "considerable importance" to beginning teachers for it to be considered strong. Thus, it seemed that this aspect of the pre-service programs was weak.

Criterion 54

It is of "considerable importance" for the beginning teacher to be competent in making maps, charts, and posters.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--An indication of the number of colleges and universities providing opportunities which could lead to the development of competency in making maps, charts, and posters was shown in Table 36. Here it was seen that 10, or 100 per cent, of the institutions provided planned experiences leading to development of this competency.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency. --The same percentage of graduates responded to the "adequate competency" category as to "limited competency" category. This was indicated in Table 38 where it was shown that 41 per cent of the graduates possessed "adequate competency"; 41 per cent, "limited competency"; and 18 per cent possessed "no competency" in making maps, charts, and posters.

Courses in Which Graduates Acquired Competency.--Table 39 showed that of the graduates possessing "adequate competency" in making maps, charts, and posters, 12 per cent felt they acquired the competency as a result of experiences in an audio-visual course; while of those having "limited competency," 11 per cent acquired it as a result of experiences in audio-visual courses. Of those possessing "adequate competency," 59 per cent did so as a result of experiences in a combination audio-visual course, methods, and student teaching; while 51 per cent of those having "limited competency" did so as a result of this combination. Of those having "adequate competency," 28 per cent did so as a result of experiences in methods and/or student teaching; while 38 per cent of those possessing "limited competency" indicated the same courses as providing the basic experiences. Of the graduates reporting "adequate competency," 1 per cent received their basic experiences from other sources; while none of those possessing "limited competency" received experiences from other sources.

Evaluation

There was evidence that all Oklahoma state supported institutions of higher learning assumed some responsibility for providing opportunities enabling pre-service teacher education students to become competent in making maps, charts, and posters. The opportunities were offered in a variety of situations. (See Tables 13 and 37.) Only 41 per cent of the

graduates possessed "adequate competency" in making maps, charts, and posters. Since opportunities for acquiring this competency did exist and since the jury rated this criterion of "considerable importance," it appeared that the small percentage of graduates possessing "adequate competency" represented a weakness in the programs as they existed.

Criterion 55

It is of "considerable importance" for beginning teachers to be competent in the preparation of feltboards and feltboard materials.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--As indicated in Table 36, there were 9, or 90 per cent, of the colleges and universities offering opportunities which would enable pre-service teacher education students to develop competency in the preparation of feltboards and feltboard materials.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency.--Since 90 per cent of the institutions provided opportunities to gain competency in the preparation of feltboards and feltboard materials, it was interesting to note that the graduate responses are just about evenly distributed. As Table 38 showed, 36 per cent of the graduates possessed "adequate competency"; 35 per cent, "limited competency"; and

29 per cent, "no competency."

Courses in Which Graduates Acquired Competency.--Table 39 showed that of the graduates possessing "adequate competency," 18 per cent felt they acquired this skill from an audio-visual course; 54 per cent from a combination of audio-visual courses, methods, and student teaching; 28 per cent from methods and/or student teaching; and none from other sources. Table 39 also pointed out that of those possessing "limited competency," 7 per cent felt they received the competency from an audio-visual course; 54 per cent from experiences in audio-visual course, methods, and student teaching; 36 per cent from methods and/or student teaching; and 3 per cent from other sources. It should be pointed out that the individual audio-visual course seemed to exert influence on the acquiring of "adequate competency" in preparing feltboards and feltboard materials.

Evaluation

The evidence clearly showed a majority of colleges and universities involved in the study offered opportunities which enabled pre-service teacher education students to develop competency in the preparation of feltboards and feltboard materials. However, evidence also showed that only 36 per cent of the graduates possessed "adequate competency" in this skill which the jury considered to be of "considerable importance" to beginning teachers. In view of this

evidence, it seemed this phase of pre-service teacher preparation was weak.

Criterion 56

It is of "considerable importance" for the beginning teacher to possess competency in the construction of models.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--It is indicated in Table 35 that only 6, or 60 per cent of Oklahoma state supported institutions of higher learning offered opportunities which would enable pre-service teacher education students to gain competency in the construction of models.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency.--In view of the above data it was not surprising to discover that very few graduates indicated "adequate competency" in the construction of models. Table 38 showed that 25 per cent of the respondents possessed "adequate competency"; 43 per cent possessed "limited competency"; 32 per cent possessed "no competency" in construction of models.

Courses in Which Graduates Acquired Competency.--Table 39 showed that of the graduates possessing "adequate competency" in the construction of models, 14 per cent felt they received the experiences leading to the development of

the skill in an audio-visual course; 56 per cent from a combination audio-visual course, methods, and student teaching; 30 per cent from methods and/or student teaching; and none from other sources. Data in Table 39 showed also that of the graduates indicating "limited competency," 13 per cent received the basic experiences in an audio-visual course; 50 per cent from a combination audio-visual course, methods, and student teaching; 36 per cent from methods and/or student teaching; and 1 per cent from other sources. It was observed that there was little difference in the percentages of those having "adequate competency" and those having "limited competency." Apparently there was no outstanding learning situation which provided "adequate competency."

Evaluation

In the above analysis it was pointed out that a little over half the institutions of higher learning provided necessary experience opportunities for acquiring competency in construction of models. The analysis further pointed out that responses showing extent to which graduates possessed competency in constructing models were evenly distributed between the three categories with only 25 per cent indicating "adequate competency." The lack of offerings among the institutions might account for this low response. However, in light of the rating of "considerable importance" placed on this criterion by the jury, it appeared that this aspect was weak.

Criterion 57

It is of "considerable importance" for the beginning teacher to possess competency in the construction of displays.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--As indicated in Table 36, there were 9, or 90 per cent, of the institutions offering opportunities which would enable pre-service teacher education students to attain competency in the construction of displays.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency.--A small percentage of the graduates responding to the questionnaire reported they possessed "adequate competency" in the construction of displays. Table 38 implied that only 38 per cent of the graduates possessed "adequate competency"; 43 per cent, "limited competency"; and 19 per cent, "no competency."

Courses in Which Graduates Acquired Competency.--Table 39 showed that of the graduates possessing "adequate competency" in the construction of displays, 15 per cent acquired competency as a result of experiences obtained in an audio-visual course; 55 per cent from a combination audio-visual course, methods, and student teaching; 30 per cent

from methods and/or student teaching; and none from other sources. Of those possessing "limited competency," only 9 per cent obtained the skill as a result of an audio-visual course; 49 per cent as a result of a combination of experiences in audio-visual courses, methods, and student teaching; 39 per cent from methods and/or student teaching; and 3 per cent from other sources. These data seemed to indicate that a course in audio-visual education had a bearing on the acquisition of "adequate competency" in the construction of displays. It should be pointed out that more of the graduates possessing "limited competency" indicated they received the competency from methods and/or student teaching than did those having "adequate competency."

Evaluation

The majority of state supported institutions of higher learning in Oklahoma offered opportunities which would enable prospective teachers to acquire competency in preparing display materials. These opportunities were offered in a number of learning situations, one of the more influential being the audio-visual course. However, a very small percentage of graduates possessed "adequate competency" in constructing display materials and since the jury rated this criterion of "considerable importance," it appeared that the opportunities, as they existed, represented a weakness in this area of pre-service preparation.

Criterion 58

It is of "considerable importance" for the beginning teacher to possess competency in preparing exhibits and dioramas.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--It was indicated in Table 36 that 7, or 70 per cent, of the state supported colleges and universities in Oklahoma offered opportunities enabling pre-service teacher education students to gain competency in the preparation of exhibits and dioramas.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency.--The smallest percentage of responses from graduates of the institutions fell in the "adequate competency" category, while the largest percentage fell in the "limited competency" category. This fact was borne out in Table 38 where it was shown that only 26 per cent of the graduates possessed "adequate competency" in the preparation of exhibits and dioramas; 41 per cent possessed "limited competency"; and 33 per cent, "no competency."

Courses in Which Graduates Acquired Competency.--Table 39 showed that of the graduates possessing "adequate competency," 11 per cent felt they received the basic experiences leading to this competency in an audio-visual course; 63 per cent from a combination audio-visual course, methods,

and student teaching; 24 per cent from methods and/or student teaching; and 2 per cent from other sources. Table 39 also showed that of those graduates possessing "limited competency," 9 per cent received planned experiences leading to the competency in an audio-visual course; 52 per cent from a combination of audio-visual courses, methods, and student teaching; 39 per cent from methods and/or student teaching; and none from other sources.

Evaluation

The above data clearly pointed out that the majority of institutions offered opportunities for gaining competency in preparing exhibits and dioramas and the opportunities were offered in a variety of elective, semi-elective, and required courses (see Tables 13 and 37). Although there was widespread opportunity to acquire the competency concerned with here, a very small percentage of graduates possessed "adequate competency" in the preparation of displays and dioramas. In view of the jury rating of "considerable importance" placed on this characteristic, it appeared that this aspect of the programs represented a weakness.

Criterion 59

It is of "considerable importance" for the beginning teacher to possess competency in the production of duplicating stencils.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--It was indicated in Table 36 that only 4, or 40 per cent of the institutions of higher learning selected for this study offered opportunities for obtaining competency in the production of duplicating stencils.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency.--It was interesting to observe from data in Table 38 that 51 per cent of the graduates possessed "adequate competency" in making duplicating stencils even though only 40 per cent of the institutions offered opportunities for obtaining the competency. It was also shown in Table 38 that 22 per cent possessed "limited competency" and 27 per cent possessed "no competency" in making duplicating stencils.

Courses in Which Graduates Acquired Competency.--Table 39 showed that of the graduates possessing "adequate competency," 14 per cent received the basic experiences in an audio-visual course; 53 per cent from a combination audio-visual course, methods, and student teaching; 32 per cent from methods and/or student teaching; and 1 per cent from other sources. Table 39 showed also that of those possessing "limited competency," none acquired the competency from an audio-visual course; 60 per cent from a combination audio-visual course, methods, and student teaching; 37 per

cent from methods and/or student teaching; and 3 per cent from other sources. Another interesting aspect of these data is that 14 per cent of those having "adequate competency" acquired the competency from an audio-visual course, while none of those having "limited competency" acquired it from an audio-visual course.

Evaluation

The evidence showed that less than half the institutions involved in the study offered opportunities which would enable pre-service teacher education students to become competent in the production of duplicating stencils. Further evidence showed that 51 per cent of the graduates possessed "adequate competency" in this skill. Despite the fact that limited opportunities existed in the institutions, over half the graduates possessed "adequate competency" in producing duplicating stencils. However, since the jury rated this competency to be of "considerable importance" to beginning teachers, this graduate response was not great enough to indicate a strength. Thus, it seemed that this aspect of pre-service preparation of teachers in Oklahoma state supported colleges of higher learning represented a weakness in the preparation of teachers.

Criterion 60

It is of "considerable importance" for the beginning teacher to possess competency in making recordings.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--An examination of data in Table 36 indicated that 9, or 90 per cent, of the colleges and universities selected for this study offered opportunities which would enable pre-service teacher education students to become competent in making recordings.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency.--A large percentage of graduates responded to the "no competency" category. Table 38 showed that only 21 per cent of the graduates possessed "adequate competency" in making recordings; 32 per cent, "limited competency"; and 47 per cent, "no competency."

Courses in Which Graduates Acquired Competency.--Table 39 showed that of the graduates possessing "adequate competency," 15 per cent felt they acquired the competency as a result of an audio-visual course; 61 per cent from a combination audio-visual course, methods, and student teaching; 24 per cent from methods and/or student teaching; and none from other sources. Of those having "limited competency," 8 per cent felt they received the skill from an audio-visual course; 67 per cent received the competency from a combination audio-visual course, methods, and student teaching; 22 per cent from methods and/or student teaching;

and 3 per cent from other sources. Consequently, it appeared that the audio-visual course was influential in the development of competency in both groups.

Evaluation

In view of the above evidence, it appeared that the majority of institutions offered opportunities for gaining this competency in a variety of situations. However, the percentage of graduates possessing "adequate competency" in making recordings was too small to indicate optimum effectiveness. Therefore, since the jury placed a rating of "considerable importance" on this criterion, it appeared there was a weakness represented in this area of pre-service preparation in audio-visual education.

Criterion 61

It is of "some importance" for the beginning teacher to possess competency in the production of 2" by 2" slides.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--The breakdown of data in Table 36 indicated that 5, or 50 per cent, of the institutions involved in the study offered opportunities which would enable pre-service teacher education students to become competent in the production of 2" by 2" slides.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency. --The distribution of graduate responses to the three categories was skewed toward the "no competency" side. Table 38 showed that only 20 per cent of the graduates possessed "adequate competency"; 24 per cent, "limited competency"; and 56 per cent, "no competency."

Courses in Which Graduates Acquired Competency.--Table 39 showed that of the graduates possessing "adequate competency" in the production of 2" by 2" slides, 10 per cent felt they had the experiences necessary for the development of this competency in an audio-visual course; 78 per cent from a combination audio-visual course, methods, and student teaching; 12 per cent from methods and/or student teaching; and none from other sources. Table 39 showed also that of those having "limited competency," 16 per cent felt they acquired competency because of experiences in an audio-visual course; 66 per cent from a combination course in audio-visual education, methods, and student teaching; 16 per cent from methods and/or student teaching; and 2 per cent from other sources. Although very few graduates possessed "adequate competency" or even "limited competency" in the production of 2" by 2" slides, it appeared from the data that the audio-visual course provided a large share of the experiences necessary for the development of the competency, both as a single unit of instruction and in combination with other

sources.

Evaluation

Evidence showed that only one-half the institutions provided planned experiences designed to instill in the pre-service teacher education students competency in the production of 2" by 2" slides. Evidence further showed that only 20 per cent of the graduates possessed "adequate competency" in the production of 2" by 2" slides. The jury rated the competency only of "some importance" to beginning teachers, but so few graduates indicated adequate competency in this area that a weakness was indicated.

Criterion 62

It is of "some importance" for the beginning teacher to possess competency in the production of photographic pictures.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--As indicated in Table 36, only 3 or 30 per cent, of the Oklahoma state supported institutions of higher learning provided opportunities which could lead to the development of competency in the production of photographic pictures.

Reactions of Graduates

Extent to Which Graduates Possessed Competency.--As shown in Table 38, only 12 per cent of the graduates possessed

"adequate competency" in the production of photographic pictures; 21 per cent possessed "limited competency"; and 67 per cent, "no competency."

Courses in Which Graduates Acquired Competency.--Table 39 showed that of the graduates possessing "adequate competency," 19 per cent received this competency from an audio-visual course; 43 per cent from a combination of audio-visual courses, methods, and student teaching; 38 per cent from methods and/or student teaching; and none from other sources. Of those having "limited competency," 10 per cent acquired competency as a result of an audio-visual course; 56 per cent from a combination audio-visual course, methods, and student teaching; 34 per cent from methods and/or student teaching; and none from other sources.

Evaluation

On the basis of the foregoing information, and in light of the criterion rating of "some importance," it appeared the extent to which opportunities were offered and the number of graduates possessing "adequate competency" were so limited that a weakness was represented in this phase of the programs.

Criterion 63

It is of "some importance" for the beginning teacher to possess competency in producing filmstrips.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--The data in Table 36 indicated that 2, or 20 per cent, of colleges and universities selected for the study included planned experiences which could lead to the development of competency in filmstrip production.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency.--Of all the criteria treated in the study, the one concerned with production of filmstrips drew the largest number of responses in the "no competency" category. This was borne out in Table 38 where it was shown that only 5 per cent of the graduates possessed "adequate competency"; 14 per cent possessed "limited competency"; and 81 per cent possessed "no competency."

Courses in Which Graduates Acquired Competency.--Table 39 showed that of the graduates possessing "adequate competency," none felt they acquired the competency as a result of experiences in an audio-visual course; 78 per cent acquired the competency from a combination of audio-visual courses, methods, and student teaching; 22 per cent from methods and/or student teaching; and none from other sources. Table 39 also pointed out that of those graduates having "limited competency," 12 per cent received basic

experiences in an audio-visual course; 38 per cent from a combination audio-visual course, methods, and student teaching; 42 per cent from methods and/or student teaching; and 8 per cent from other sources. These data implied that the audio-visual course was an important source for the acquisition of competency in the preparation of filmstrips.

Evaluation

In light of the above, it appeared that the extent of offerings among the institutions were so limited that it would be impossible to make an evaluation in terms of state programs. Even though the jury placed a rating of "some importance" on the criterion, it appeared that the lack of offerings in themselves represented a weakness.

Criterion 64

It is of "some importance" for the beginning teacher to possess competency in producing radio programs.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--An analysis of data in Table 36 indicated that 5, or 50 per cent, of the institutions involved in the study offered opportunities which would enable pre-service teacher education students to gain competency in producing radio programs.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency. --As might be expected, in light of the above data, only 12 per cent of the graduates possessed "adequate competency" in production of radio programs. Table 38 also showed that 16 per cent of the graduates possessed "limited competency" while 72 per cent possessed "no competency."

Courses in Which Graduates Acquired Competency.--Table 39 showed that of the graduates possessing "adequate competency," 4 per cent acquired the competency from an audio-visual course; 57 per cent from a combination audio-visual course, methods, and student teaching; 59 per cent from methods and/or student teaching; and none from other sources. Table 39 also showed that of the graduates possessing "adequate competency," 10 per cent felt they received the basic experiences in an audio-visual course; 58 per cent from a combination audio-visual course, methods, and student teaching; 29 per cent from methods and/or student teaching; and 3 per cent from other sources. Thus, it appeared that a combination of courses had greater influence on the development of competency in the production of radio programs than did any one course.

Evaluation

In the analysis of data it was brought out that 50 per cent of the institutions of higher learning involved in this study offered opportunities which would enable pre-service teacher education students to gain competency in the

production of radio programs. The analysis also indicated that 12 per cent of the graduates possessed "adequate competency" in this skill. Even though the jury suggested that it was only of "some importance" for beginning teachers to possess this competency, too few graduates indicated "adequate competency" in producing radio programs for this criterion to be considered a strong aspect of the pre-service preparation of teachers in the area of audio-visual education. Thus, it appeared a weakness was indicated in the programs as they existed.

Criterion 65

It is of "some importance" for the beginning teacher to possess competency in producing television programs.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--As indicated in Table 36, there were only 2, or 20 per cent of the colleges and universities offering opportunities designed to provide pre-service teacher education students with competency in producing television programs.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency. --The majority of graduates did not possess competency in the production of television programs. As Table 38 pointed out,

only 8 per cent possessed "adequate competency"; 15 per cent, "limited competency"; and 77 per cent, "no competency." This negative response in distribution was not surprising when considered in light of the extent of offerings.

Courses in Which Graduates Acquired Competency.--Table 39 showed that the graduates possessing "adequate competency" consisted of 6 per cent of the responses indicating acquisition of the competency as a result of experiences in an audio-visual course; 56 per cent from a combination audio-visual course, methods, and student teaching; 38 per cent from methods and/or student teaching; and none from other sources. It was shown also that of the graduates possessing "limited competency," 15 per cent received basic experiences from an audio-visual course; 42 per cent from a combination audio-visual course, methods, and student teaching; 39 per cent from methods and/or student teaching; and 4 per cent from other sources.

Evaluation

Even though the jury rated this criterion to be of only "some importance" to beginning teachers, it appeared that the extent of offerings in the state were low. As might be expected, a small percentage of graduates possessed "adequate competency" in this skill. Hence, it appeared that this aspect of the Oklahoma audio-visual programs was weak, both in extent of offerings and in graduate reactions.

Criterion 66

It is of "little importance" for beginning teachers to possess competency in the production of motion pictures.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--An analysis of data in Table 36 indicate only 3, or 30 per cent, of the institutions involved in the study offered opportunities for pre-service teacher education students to develop competency in motion picture production.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency.--In examining the data presented in Table 38 it was observed that 11 per cent of the graduates possessed "adequate competency" in the production of motion pictures; 15 per cent, "limited competency"; and 74 per cent, "no competency."

Courses in Which Graduates Acquired Competency.--Table 39 showed that of the graduates possessing "adequate competency" in the production of motion pictures, 10 per cent received the necessary experiences in an audio-visual course; 65 per cent from a combination audio-visual course, methods, and student teaching; 25 per cent from methods and/or student teaching; and none from other sources. Of those possessing "limited competency," 10 per cent acquired the

skill from an audio-visual course; 56 per cent from a combination audio-visual course, methods, and student teaching; 27 per cent from methods and/or student teaching; and 7 per cent from other sources.

Evaluation

Only 30 per cent of the colleges and universities offered opportunity for acquiring competency in production of motion pictures. However, since 11 per cent of the graduates possessed "adequate competency" in this skill, it appeared the competency concerned with in this criterion was represented in adequate strength.

Criterion 67

It is of "little importance" for the beginning teacher to possess competency in developing and printing still pictures.

Analysis of Data

Pre-Service Opportunities

Extent of Opportunities.--As indicated in Table 36 only 4, or 40 per cent, of the state supported colleges and universities in Oklahoma provided opportunities for pre-service teacher education students to acquire competency in the developing and printing of still pictures.

Reactions of Graduates

Extent to Which 1956 Graduates Possessed Competency. --The distribution of graduate responses showed, in Table 39,

that only 9 per cent of the graduates possessed "adequate competency"; 12 per cent, "limited competency"; and 79 per cent, "no competency" in developing and printing still pictures.

Courses in Which Graduates Acquired Competency.--Table 39 showed that of the graduates possessing "adequate competency," 13 per cent indicated they received the experiences leading to competency from an audio-visual course; 67 per cent from a combination audio-visual course, methods, and student teaching; 20 per cent from methods and/or student teaching; and none from other sources. Table 39 also showed that of those graduates possessing "limited competency," 18 per cent received the necessary experiences from an audio-visual course; 55 per cent from a combination audio-visual course, methods, and student teaching; 27 per cent from methods and/or student teaching; and none from other sources.

Evaluation

Less than 40 per cent of the colleges and universities involved in this study offered opportunities which would enable pre-service teacher education students to acquire competency in developing and printing still pictures. The data further showed that 9 per cent of the graduates indicated "adequate competency" in this skill. Even though these data showed limitations both in extent of offering and graduate reactions, it must be pointed out that the jury

rated this competency to be of "little importance." Thus it appears this aspect of the programs in Oklahoma was adequate.

Summary

An analysis and interpretation of the data relative to selected aspects of Oklahoma programs of pre-service preparation of teachers in the area of audio-visual education and an evaluative statement concerning each criterion was included in this chapter.

Opportunities for acquiring the majority of audio-visual knowledges and competencies concerned with the criteria were not offered by all colleges and universities involved in the study. However, it was indicated that opportunities for acquiring most of the knowledges and competencies were offered by fifty per cent or more of the institutions. The majority of characteristics dealing with physical aspects of audio-visual materials, and maintenance of audio-visual equipment were offered by all colleges and universities. Only two of the seventeen characteristics concerned with the production of audio-visual materials were offered by all institutions, and four of the fourteen characteristics pertaining to utilization of audio-visual materials were offered by all institutions. In the majority of cases the experiences provided were offered in audio-visual courses or in methods courses, both of which were available on an

elective or semi-elective basis.

Only a few of the graduate responses indicated "adequate" knowledge or competency of all of the sixty-seven audio-visual characteristics included in the study. Items on which fifty per cent or more of the graduates indicated "adequate" knowledge or competency were: (1) production of duplicating stencils, (2) preparation of a class to use audio-visual materials, (3) development of follow-up activity, (4) demonstration technique, (5) different kinds of audio-visual materials, and (6) place of audio-visual materials in learning. The item receiving the highest percentage of responses to the "adequate" category was the characteristic concerned with knowledge of the place of audio-visual materials in learning.

Within the limitations of the study the findings revealed that on the basis of the sixty-seven characteristics considered, the pre-service preparation of selected teachers appeared to be weak in sixty of the designated areas. The seven areas found to give evidence of strength were: knowledge of (1) different types of projection screens, (2) projection optics, (3) cost and sources of materials, and (4) educational value of arts and crafts materials; competency in (5) making a community survey, (6) production of motion pictures, and (7) developing and printing still pictures.

CHAPTER V

SUMMARY AND CONCLUSIONS

Summary

The purpose of this study was to evaluate the pre-service teacher education programs of Oklahoma state supported colleges and universities in providing needed knowledges and competencies in the use of audio-visual teaching materials. The evaluation was reported in terms of strengths and weaknesses as characterizing the total state programs.

The procedure of the investigation included: (1) determining what audio-visual knowledges and competencies were needed by beginning teachers, (2) establishing the extent to which needed experiences were offered pre-service teacher education students which could provide the necessary knowledges and competencies, and (3) obtaining reactions to these experiences from 1956 graduates of the colleges and universities who were engaged in classroom teaching in Oklahoma.

Since a suitable list of needed knowledges and competencies did not exist in the literature, it was felt the first step in solving the problem should be the establishment

of criteria to serve as a basis for the investigation. This was accomplished by searching the literature for knowledges and competencies that might be needed by beginning teachers. The items thus obtained were delineated and placed in statements under seven major groups: (1) knowledge of physical characteristics of audio-visual materials and equipment, (2) knowledge of basic principles underlying use of audio-visual materials, (3) knowledge of educational value of different kinds of audio-visual teaching materials, (4) competency in operating audio-visual equipment, (5) competency in maintenance of audio-visual equipment, (6) competency in production of audio-visual materials, and (7) competency in utilization practices. Following a refinement of these statements, a rating scale was prepared containing sixty-seven statements. This instrument provided a five-point rating scale: (1) "most important," (2) "considerable importance," (3) "some importance," (4) "little importance," and (5) "no importance." Further, provisions were made for the respondents to indicate any additional knowledges or competencies which they felt were needed by beginning teachers.

The rating scale was mailed to thirty-eight selected jurors. Thirty-six, or 95 per cent, of the scales were returned and were used in the study. The reliability of the instrument was established by using the Guttman coefficient of reliability. The data obtained from the jury questionnaire

were interpreted through a median score on each item.

Using these established criteria as a basis, two additional questionnaires were constructed. The first was prepared to determine the extent to which opportunities for gaining the needed knowledges and competencies were offered in selected institutions of higher learning in Oklahoma; the second was designed to obtain reactions from 1956 teacher education graduates to these opportunities.

The instrument designed for colleges and universities requested a "yes" or "no" response to each item. Respondents were asked also to indicate those professional courses in which planned opportunities existed, and the extent to which these courses were required of students. All of the ten participating institutions returned check sheets, data from which were tabulated by percentage.

The third questionnaire was developed to give the 1956 teacher education graduates from the colleges and universities involved in the study an opportunity to indicate the extent to which they possessed a given knowledge or competency at the time they entered the teaching profession. Respondents were to indicate "adequate knowledge," "limited knowledge," or "no knowledge," with regard to a given criterion. Of the 275 teachers invited to participate, 216, or 74 per cent, responded. The responses from this group were tabulated by means of percentage. Each criterion was followed by a pertinent analysis of data and an evaluative

statement.

Summary of Findings

An interpretation of the questionnaire responses provides the following summary of findings in seven areas of audio-visual education.

Physical Aspects

Of the eight characteristics relating to physical aspects, one, knowledge of the different kinds of equipment, was considered to be "most important" by the jury. Three, ventilation methods, light control, and mechanism of audio-visual equipment, were thought to be of "considerable importance." Two, different types of projection screens and fundamentals of acoustics, were judged to be of "some importance." Two, projection optics and cost and sources of materials, were considered to be of "little importance."

All colleges and universities offered planned experiences in different kinds of audio-visual equipment, methods of ventilation, light control technique, mechanism of audio-visual equipment, types of projection screens, and cost and sources of materials. No fewer than 60 per cent of the institutions provided opportunities for acquiring knowledge of classroom acoustics and projection equipment optics.

Of the eight characteristics dealing with physical aspects, only 59 per cent of the graduates had acquired "adequate knowledge" of different kinds of audio-visual

materials and no more than 33 per cent indicated "adequate knowledge" of the other seven characteristics.

The pre-service preparation of selected teachers was evaluated as weak in all but three of the characteristics dealing with physical aspects. Strength was indicated in knowledges relating to different types of projection screens, projection optics, and cost and sources of materials.

Background Knowledges

Of the four characteristics considered, two, the place of audio-visual materials in learning and best materials for a specific teaching purpose, were considered to be "most important" to the beginning teacher. Research and reference materials were thought to be of "considerable importance" while the historical development of audio-visual education was believed to be of "some importance."

All colleges and universities offered opportunities for students to acquire knowledge of the characteristics thought to be "most important"; 90 per cent offered experiences in the characteristics considered to be of "considerable importance."

The graduate responses to the "adequate knowledge" category indicated a range of 60 per cent. The highest percentage of these responses was related to the characteristic concerned with the place of audio-visual materials in learning, and the smallest percentage was concerned with the historical development of audio-visual education.

With regard to the four characteristics pertaining to background knowledges, graduate responses indicated weaknesses.

Educational Value of Audio-Visual Materials

Of the eight characteristics considered, three, graphic materials, three-D materials, and flat pictures, were considered to be "most important" to the beginning teacher. Three additional characteristics, value of the chalkboard, types of sound motion pictures, and lantern slides, were thought to be of "considerable importance." Two, arts and crafts materials and motion picture photographic techniques, were believed to be of "some importance."

All colleges and universities offered opportunities to gain knowledge of educational value of graphic materials and lantern slides, while 90 per cent provided experiences in three-D materials, flat pictures, and chalkboards. Opportunities for acquiring knowledge of the educational value of the sound motion picture were offered in 80 per cent of the schools, with 60 per cent providing experiences in arts and crafts and motion picture photographic techniques.

Approximately one-half of the graduates indicated "adequate knowledge" of the educational value of graphic materials, three-D materials, flat pictures, chalkboard, and sound motion pictures. One-third possessed "adequate knowledge" of the educational value of lantern slides and arts and crafts; one-sixth had "adequate knowledge" of motion picture photographic technique.

Eight characteristics were considered in the group concerned with the educational value of audio-visual materials. Seven experiences appeared to be weak, with only the experience associated with arts and crafts materials appearing strong.

Operation of Equipment

Of the ten characteristics considered, three, operation of the 16mm motion picture projector, filmstrip projector, and magnetic recorder, were considered to be "most important" by the jury. Four, operation of disc recorder, playback equipment, lantern slide projector, and duplicating equipment, were thought to be of "considerable importance"; three, operation of tachistoscope, public address equipment, and micro-projector, were rated of "some importance" by the jury.

All colleges and universities offered opportunities to gain competency in operation of motion picture projectors, filmstrip projectors, opaque projectors, and lantern slide projectors; 90 per cent in operation of tachistoscope; 80 per cent in operation of magnetic recording equipment; 40 per cent in operation of disc recorder and public address equipment; 30 per cent in operation of duplicating equipment; and 20 per cent in operation of the micro-projector.

Less than 50 per cent of the graduates possessed "adequate competency" in the operation of audio-visual equipment considered in this part.

The graduates' competencies in all ten characteristics pertaining to operation of audio-visual equipment appeared to be weak.

Maintenance

Of the six characteristics considered, none were thought to be "most important" to the beginning teacher. Two, care of chalkboard surface and changing lamps in projection equipment, were thought to be of "considerable importance"; four, splicing magnetic tape, cleaning and oiling projection equipment, cleaning recording and cutting heads, and splicing motion picture films, were considered to be of "some importance."

All colleges and universities offered planned experiences in changing projection lamps, splicing magnetic tape, cleaning and oiling projection equipment, and splicing 16mm motion picture film; 70 per cent offered experiences in care of chalkboard surfaces, and 40 per cent in cleaning recording and cutting heads.

Fewer than one-third of the graduates indicated "adequate competency" in any of the characteristics considered in this part. Weaknesses existed in pre-service preparation in all phases of maintenance of audio-visual equipment.

Utilization

Of the fourteen characteristics considered, nine, preparing class for use of audio-visual materials, follow-up

activity, selecting teaching materials, evaluating use of audio-visual materials, developing effective listening habits, constructing resource units, arranging class for best possible viewing, conducting field trips and excursions, and dramatization techniques, were judged to be "most important" to beginning teachers. Four, demonstration techniques, chalkboard drawing and lettering, transferring pictures to a chalkboard, and screening for seeing and hearing deficiencies, were thought to be of "considerable importance"; one, making a community survey, was rated of "some importance."

All colleges and universities provided planned experiences in selecting teaching materials, evaluating use of materials, developing resource units, and demonstration techniques. In 80 per cent of the participating institutions, opportunities were offered for developing effective listening habits, organizing field trips and excursions, and transferring pictures to chalkboard; in 70 per cent, dramatization technique; and in 50 per cent, chalkboard drawing and lettering and screening students for seeing and hearing deficiencies.

Of the fourteen characteristics dealing with utilization of audio-visual materials, not more than 59 per cent of the graduates possessed "adequate competency" of any one characteristic. The smallest percentage of responses was concerned with the item on community survey.

Fourteen characteristics were treated in the group

concerned with utilization of audio-visual materials. With the exception of community survey, preparation in all areas appeared to be weak.

Production

Of the seventeen characteristics examined, one, production of 3¼" by 4" lantern slides, was thought to be "most important" to beginning teachers. Eight--mounting, filing, and classifying flat pictures; mounting, filing, and classifying specimens and objects; making maps, charts, and posters; preparation of feltboard and feltboard materials; production of models and displays; preparing exhibits and dioramas; making duplicating stencils; and making recordings--were judged to be of "considerable importance." Five, production of 2" by 2" slides, photographic pictures, filmstrips, radio programs, and television programs, were thought to be of "some importance"; three, production of motion pictures, production of still pictures, and developing and printing still pictures, were considered to be of "little importance" to the beginning teacher.

All colleges and universities offered planned experiences in the production of handmade slides, maps, charts, and posters; 90 per cent offered opportunities to acquire competency in production of feltboards and feltboard materials, constructing displays, and making recordings; 80 per cent provided planned experiences in mounting, filing, and

classifying flat pictures; 70 per cent in preparation of exhibits and dioramas; 60 per cent in construction of models; 50 per cent in production of 2" by 2" slides, and production of radio programs; 30 per cent offered planned experiences in production of photographic pictures and motion pictures; and 20 per cent offered experiences in production of filmstrips and television programs.

Of the seventeen characteristics dealing with production of audio-visual materials, only one was possessed to an "adequate" extent by as many as 50 per cent of the responding graduates. This response was on the characteristic concerned with production of duplicating stencils. On the remaining items, the smallest percentage of response indicating "adequate competency" was concerned with production of filmstrips, production of television and radio programs, the printing of still pictures, and production of motion pictures.

The respondents indicated weakness in fifteen of the seventeen characteristics included in this group, with strength apparent in two areas--production of motion pictures, and developing and printing still pictures.

Conclusions

The following conclusions were based on findings of the study:

1. The correction of deficiencies in the weak aspects of the pre-service preparation of teachers in state

supported colleges and universities of Oklahoma could improve greatly the extent to which practicing teachers possess knowledge and competency in audio-visual education.

2. Opportunities were provided by the state institutions to enable teachers in training to acquire the majority of audio-visual knowledges and competencies. However, there was an indication that a larger number of graduates possessed knowledge of the theoretical concepts of utilization, while fewer possessed competency in operation and maintenance of equipment and production of audio-visual materials.

3. Pre-service teacher preparation programs could be strengthened by requiring all prospective teachers to take a course in audio-visual education or by including planned audio-visual experiences in all the professional teacher education sequence courses.

4. Colleges and universities should give careful attention to all areas of audio-visual training for the pre-service teacher in order to insure the best possible program.

5. A large number of teachers in the field need in-service instruction in the area of audio-visual education.

Recommendations

On the basis of the findings and conclusions the following recommendations are proposed:

1. That teacher-training institutions in Oklahoma re-examine their professional educational sequence to

determine if proper emphasis is being placed upon experiences which seem to be of greatest importance to beginning teachers.

2. That a basic course in audio-visual education be required of all prospective teachers, or that the professional teacher education sequence be organized to include audio-visual experiences which will insure that each prospective teacher obtain needed knowledges and competencies.

3. That audio-visual laboratories be established which would provide prospective teachers opportunities to develop competency in: (1) production of 3¼" by 4" handmade slides; (2) mounting, filing, and classifying objects and specimens; (3) mounting, filing, and classifying flat pictures; (4) making maps, charts, and posters; (5) construction of feltboards and feltboard materials; (6) construction of models; (7) construction of displays; (8) preparing exhibits and dioramas; (9) preparing duplicating stencils; (10) making recordings; and (11) operating the various types of audio-visual equipment.

4. That Oklahoma institutions of higher learning involved in teacher preparation make an effort to provide services which will help the in-service teacher utilize audio-visual materials such as workshops, visitations, and summer courses.

5. That the requirements for retention in teacher education programs include experiences designed to achieve

adequate understanding of needed audio-visual knowledges and competencies.

6. That all institutions offering pre-service teacher education programs engage cooperatively in the study of curricular changes which might well result in greater assurance that needed knowledges and competencies are more generally provided.

Future Study

It is recommended that the following studies would add materially to the accumulation of data necessary to insure proper teacher preparation in the area of audio-visual education:

1. An investigation to determine what factors other than pre-service preparation have influence on the extent to which teachers utilize audio-visual materials.

2. A longitudinal study of a large sampling of in-service teachers to provide valuable information relative to pre-service teacher education curricula.

3. Additional research to determine the types and combinations of experiences which would produce the desired results in classroom utilization of audio-visual materials.

4. An investigation concerning the balance between time spent in preparation for proper use of audio-visual materials and other areas of professional preparation during the pre-service period.

BIBLIOGRAPHY

BIBLIOGRAPHY

Apple, Joe A., and Harcleroad, Fred. "An Evaluation of the Integrated Visual Program," Educational Administration and Supervision, XXVI (December, 1950), pp. 471-484.

Badgley, Ralph E., and Maaske, Roben J. "Professional Study in Audio-Visual Education," Educational Screen, XXVI (May, 1947), p. 252.

Blanc, Sam S. "Wanted: More Teacher Training in Audio-Visual Production," Educational Screen, XXXII (June, 1953), p. 250.

Carroll, John. "Visual Education and Teacher Training for the Modern Secondary School." Unpublished Doctor's dissertation, Department of Education, Yale University, 1940.

Collings, Earle S. "Training Prospective Teachers in Making and Using Visual Aids," Educational Screen, XXV (June, 1946), p. 301.

Corey, Stephen M. "Audio-Visual Aids and Teacher Training Institutions," Educational Screen, XXV (June, 1945), p. 226.

Dale, Edgar. Audio-Visual Methods in Teaching. New York: Dryden Press, 1954.

_____. "Teacher Education: When Do We Start?" Educational Screen, XXIII (May, 1944), p. 200.

DeBernardis, Amo, and Brown, James W. "Study of Teacher Skills and Knowledge Necessary for the Use of Audio-Visual Aids," Elementary School Journal, XLVI (June, 1946), p. 550.

_____, and Lange, Phil C. "Teacher Training in the Use of Instructional Materials," Educational Screen, XXIV (December, 1945), pp. 447-449.

"Developing Standards of Teacher Competency in Audio-Visual Education: A Committee Report," California Schools, XVIII (January, 1947), pp. 3-9.

de Kieffer, Robert E. "The Status of Teacher Training in Audio-Visual Education in the Forty-eight States." Unpublished Doctor's dissertation, University of Iowa, 1948.

Edwards, Allen L. Statistical Analysis. New York: Rinehart and Company, Inc., 1955.

Ferguson, Leonard W. Personality Measurement. New York: McGraw-Hill Book Company, 1952.

Fulton, W. R. "Problems in Administration of Visual Aids Based on Industrial Data." Unpublished Master's thesis, School of Education, Oklahoma Agricultural and Mechanical College, 1939.

_____. "Teacher Education: Our Best Investment," Audio-Visual Instruction, I (December, 1956), p. 210.

_____. "An Evaluation of Selected Aspects of the Organization and Administration of Oklahoma's Audio-Visual Program." Unpublished Doctor's dissertation, Oklahoma Agricultural and Mechanical College, 1955.

Gnaedinger, William C. "Pre-Service Teacher Education for Use of Audio-Visual Instructional Material," Audio-Visual Materials of Instruction. Forty-eighth Yearbook of the National Society for the Study of Education. Chicago: University of Chicago Press, 1949, pp. 95-107.

Golterman, Elizabeth, and Parle, Grace. "It Started with Lantern Slides," Nation's Schools, LVI (July, 1955), pp. 56-74.

Good, Carter V. Dictionary of Education. New York: McGraw-Hill Book Company, 1945.

_____, Barr, Avril S., and Scates, Douglas E. The Methodology of Educational Research. New York: Appleton-Century-Crofts, Inc., 1941.

Gramlich, Jay J. "The Status of Audio-Visual Programs in Selected Four-Year Institutions of Higher Learning as They Relate to the Preparation of Pre-Service Teachers." Unpublished Doctor's dissertation, University of Oklahoma, 1954.

Green, Edward B. Measurement of Human Behavior. New York: The Odyssey Press, 1941.

Hatch, Lucille. "We Took an A-V Course," Educational Screen, XXXIII (April, 1954), pp. 142-144.

Headd, Pearl W., Jr. "Preparing Pre-Service Teachers for Audio-Visual Education," Journal of Teacher Education, VIII (December, 1957), pp. 417-419.

_____. "Suggestions for Content and Procedure; a Basic Audio-Visual Course," Educational Screen, XXXV (June, 1956), pp. 218-219.

Hite, Floyd H. "An Evaluation of Teacher Training Activities in Audio-Visual Education in the State of Washington." Unpublished Doctor's dissertation, Washington State University, 1951.

Imbrock, Paul H. "Pre-Service Education of Teachers in the Use of Audio-Visual Materials of Instruction." Unpublished Doctor's dissertation, Columbia University, 1950.

Iverson, William J. "A Definition of Teaching Competencies with Audio-Visual Materials." Unpublished Doctor's dissertation, Stanford University, 1950.

Jayne, Clarence D. "Standards in Teacher-Training in the Use of Visual Aids," Educational Screen, XIX (March, 1940), pp. 110-114.

Kinder, James S. Audio-Visual Materials and Techniques. New York: American Book Company, 1950.

Knight, Edgar W. Twenty Centuries of Education. New York: Ginn and Company, 1940.

Kurth, Clarence H. "A Survey of Audio-Visual Programs in Schools of Education in Selected Midwestern Universities." Unpublished Doctor's dissertation, Department of Education, University of Indiana, 1952.

Leonard, Paul, and Noes, Elizabeth C. "Foundations for Teacher Education in Audio-Visual Instruction," American Council on Education, Series XI (1947), p. 60.

Lindquist, E. F. Education Measurement. Madison, Wisconsin: George Banta Publishing Company, 1951.

McClusky, Dean. "A-V 1905-1955," Educational Screen, XXXIV (April, 1955), pp. 32-35.

McClusky, Dean. The A-V Bibliography. Dubuque, Iowa: Wm. C. Brown Company, 1950.

_____. "Teacher Training in Audio-Visual Instruction," Education, XLVIII (October, 1947), pp. 69-74.

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

Meiser, Rolland O. "Exploration of Factors Affecting the Utilization of Audio-Visual Materials." Unpublished Doctor's dissertation, Department of Education, University of Indiana, 1952.

Monroe, Walter S. (ed.). Encyclopedia of Educational Research. New York: Macmillan Company, 1952.

Murphy, Joseph B. "A Program of Teacher Education in Audio-Visual Education." Unpublished Doctor's dissertation, Stanford University, 1949.

National Committee on Teacher Education, Department of Audio-Visual Instruction. "Self-Evaluation Schedules for Audio-Visual Education in Teacher Education Institutions." Washington, D. C.: National Education Association, April, 1957. (Mimeographed.)

Noel, Francis W. "Looking toward Competency in Audio-Visual Education," California Schools, XVII (February, 1946), p. 19.

Oklahoma Statutes, Official Edition, Cumulative Supplement (1947), p. 633.

Schwartz, John C. "The Development of Evaluative Criteria for an Audio-Visual Instructional Program." Unpublished Doctor's dissertation, University of California, 1950.

Sellers, Rose L. "Needed: Undergraduate Teacher Training in Audio-Visual Education," Education Administration and Supervision, XXXVI (November, 1950), pp. 429-432.

Shores, Louis. "Design for Teacher Education in Instructional Materials," Peabody Journal of Education, XXXIV (September, 1956), p. 66.

Smotherman, Bealer. "Training Teachers to Use Audio-Visual Resources," Nation's Schools, LVI (August, 1955), p. 74.

State Department of Education. Report of Division of Audio-Visual Education to State Board of Education on Regional Film Libraries. Oklahoma City: 1947-1953.

Stoffer, Samuel A., et al. Measurement and Prediction. Princeton, New Jersey: Princeton University Press, 1950.

Stracke, George A. "What Is Being Taught in Courses in Visual Education?" Educational Screen, XI (June, 1953), p. 204.

U. S. Office of Education, Audio-Visual Conference. Report of Teacher Education. Washington, D. C.: U. S. Government Printing Office, 1949.

Webster, N. Webster's Collegiate Dictionary. 5th ed. Springfield, Massachusetts: G. and C. Merriam Company, 1940.

White, Frederick A. "An Evaluation of the Program of the University of Wisconsin School of Education for Giving Competency in the Use of Certain Selected Audio-Visual Methods." Unpublished Doctor's dissertation, University of Wisconsin, 1952.

Witt, Paul W. F. "Toward More Effective Utilization of Audio-Visual Materials and Devices," Teachers College Record, XLIX (November, 1947), pp. 108-118.

Wittich, Walter A., and Schuller, Charles F. Audio-Visual Materials, Their Nature and Use. New York: Harper and Brothers, 1953.

APPENDIX A

JURY OF EXPERTS TO DEVELOP CRITERIA

JURY OF EXPERTS TO DEVELOP CRITERIA

Dr. Ted Anderson
Audio-Visual Supervisor
Tulsa Public Schools
Tulsa, Oklahoma

Thelma Bailey
Elementary Supervisor
Oklahoma City Schools
Oklahoma City, Oklahoma

Dr. T. H. Broad
Director of Curriculum
Oklahoma City Schools
Oklahoma City, Oklahoma

Dr. Catherine Broderick
Supervisor
Audio-Visual Education
Fort Wayne, Indiana

Mr. Cooper Burley
Supervisor
Little Rock Public Schools
Little Rock, Arkansas

Mr. G. C. Clapp
Audio-Visual Services
Lubbock Public Schools
Lubbock, Texas

Mr. Clifford E. Costley
Director of Teaching Aids
Oklahoma City Schools
Oklahoma City, Oklahoma

Susan Crutchfield
Director
Elementary Education
Galveston Public Schools
Galveston, Texas

Margaret Divizia, Supervisor
Audio-Visual Education
Board of Education
Los Angeles 15, California

Mr. Roger Eaton
Supervisor Elementary Education
Sweetwater Public Schools
Sweetwater, Texas

Dr. Cecil Floyd
Assistant Superintendent
Joplin Public Schools
Joplin, Missouri

Miss Inez Gengerich
Director Elementary Education
Enid Public Schools
Enid, Oklahoma

Dr. Elizabeth Golterman
Director
Audio-Visual Instruction
St. Louis Public Schools
St. Louis, Missouri

Dr. Lola Fay Gordon
General Supervisor
San Jose County Schools
San Jose, California

Mr. Claud Harris
Assistant Superintendent
Muskogee, Oklahoma

Dr. Jess Hudson
Assistant Superintendent
Tulsa Public Schools
Tulsa, Oklahoma

Mr. Reynolds Hungerford
Supervisor, Board of Education
Chicago Public Schools
Chicago, Illinois

Mr. George E. Ingham
Administrative Assistant
Westport Public Schools
Westport, Connecticut

Mrs. Emilie Lepthien
Supervisor
Division of Teaching Aids
Chicago Public Schools
Chicago, Illinois

Charles Luminati
Great Neck Public Schools
Long Island, New York

Mr. O. A. Madison, Director
Audio-Visual Services
Post Independent Schools
Post, Texas

Dr. Franklin Mathewson
White Plains Public Schools
White Plains, New York

Miss Alberta Meyer
Consultant
Division Audio-Visual Educ.
St. Louis 4, Missouri

Mr. Henry R. McCarty
Director, West Texas Cooperative Audio-Visual Services
Texas Technological College
Lubbock, Texas

Irene McGoodwin
Ardmore City Schools
Ardmore, Oklahoma

Mr. Will Mortenson
Curriculum Coordinator
Winnetka Public Schools
Winnetka, Illinois

Dr. Murray G. Phillips
Coordinator
Instructional Materials
Garden City Public Schools
Garden City, New York

Mr. B. J. Randles
Student Activities Director
Monterey High School
Lubbock, Texas

Dr. James A. Roberson
Director Special Activities
Abilene Public Schools
Abilene, Texas

Mr. Leo P. Rosenthal, Consultant
Audio-Visual Education
Fairfield Public Schools
Fairfield, Connecticut

Miss Thelma Talla
Elementary Coordinator
Lawton Public Schools
Lawton, Oklahoma

Mrs. Elizabeth Eaton
Helping Teacher
Wilmington Elementary Schools
Wilmington, Delaware

Dr. Philip Lewis, Director
Instructional Materials
Chicago Public Schools
Chicago, Illinois

Mrs. Helen Rachford, Director
Audio-Visual Center
Los Angeles County Public Schools
Los Angeles, California

Mr. Stanley Applegate
Manhasset Public Schools
Long Island, New York

Mr. Paul Reed, Director
Audio-Visual Service
Rochester Public Schools
Rochester, New York

APPENDIX B

LETTER OF TRANSMITTAL, QUESTIONNAIRE TO JURY OF EXPERTS, AND FOLLOW-UP LETTER

March 1, 1958

Dear _____:

As a professional educator you are aware of the advancement being made in pre-service experiences which will provide a prospective teacher with classroom competency. You are also aware that continual study in this area is of utmost importance. We are attempting, at the University of Oklahoma, to activate research which will enable us to evaluate the pre-service audio-visual experiences offered teacher education students in selected colleges of Oklahoma.

This study is dependent upon the knowledge that people of your professional status possess. You have been selected along with thirty-seven other professional persons from across the nation to supply the necessary data for the establishment of criteria by which the programs can be evaluated. You are asked to consider each item on the enclosed instrument and rate it in light of its importance to a beginning teacher as she becomes actively engaged in classroom activity.

Having established these criteria we can then evaluate the pre-service program by: (1) determining the extent to which the experiences are offered in the selected colleges, and (2) obtain from recent graduates a value judgment on each experience.

The key to the whole study is the criteria of needed experiences!

It will be greatly appreciated if you could contribute a few minutes of your time to rate the enclosed statements and return the instrument to this office.

I would like to take this opportunity to personally thank you for your contribution to the study.

Sincerely,

Harry P. Zimmerman
Graduate Assistant

HPZ:lj

QUESTIONNAIRE
ON
AUDIO-VISUAL KNOWLEDGES AND COMPETENCIES NEEDED FOR BEGINNING TEACHERS
February, 1958

Name_____ Official title_____

Professional address_____

The statements below represent possible knowledges and competencies needed by a <u>beginning teacher</u>.

You are requested to rate each item listed, in terms of its importance to the <u>beginning teacher</u>, using the following code:

1 - Great importance
2 - Considerable importance
3 - Average importance
4 - Little importance
5 - No importance

I. KNOWLEDGE

1. The teacher should have knowledge of:	1	2	3	4	5
a. different kinds of audio-visual equipment					
b. the mechanisms of audio-visual equipment					
c. projection equipment optics					
d. cost and sources of audio-visual equipment					
e. fundamentals of classroom acoustics					
f. types of projection screens					
g. light control techniques					
h. methods of ventilation					
i. other _____					
j. " _____					

	1	2	3	4	5
2. The teacher should have knowledge of basic principles underlying use of audio-visual materials including:					
a. the place of audio-visual materials in learning					
b. the best materials for a specific teaching purpose					
c. research and reference material in audio-visual education					
d. historical development of the audio-visual movement					
e. other _____					
f. " _____					
3. The teacher should have knowledge of the educational value of teaching materials and techniques including:					
a. three-D materials such as objects, specimens, models, and mock-ups					
b. graphic materials such as posters, charts, maps and globes, graphs, and cartoons					
c. 3¼" x 4" lantern slides using cellophane, gelatin, silhouettes, india ink, and etched glass					
d. motion picture photographic techniques such as time-lapse photography, animation, and slow motion .					
e. types of sound motion pictures such as documentary films, feature films, and instructional films					
f. chalkboard					
g. flat pictures and types of mountings					
h. arts and crafts such as wood carving, leather tooling, paper mache, and weaving					
i. other _____					
j. " _____					

Code: 1 - Great importance
2 - Considerable importance
3 - Average importance
4 - Little importance
5 - No importance

(more)

II. COMPETENCIES

	1	2	3	4	5
1. The teacher should be competent in operating:					
a. 16mm sound motion picture projector					
b. 3¼" x 4" lantern slide projector ...					
c. combination filmstrip and 2" x 2" slide projector					
d. opaque projector					
e. duplicating equipment					
f. disc recorder and playback equipment					
g. magnetic recording equipment					
h. public address equipment					
i. micro-projector					
j. tachistoscope					
k. other _____					
l. " _____					
2. The teacher should be competent in:					
a. changing lamps in projection equipment					
b. cleaning and oiling projection equipment					
c. cleaning recording and cutting heads					
d. cleaning and splicing 16mm film					
e. splicing magnetic recorder film					
f. care of chalkboard surface					
g. other _____					
h. " _____					
3. The teacher should be competent in:					
a. making a community survey					
b. arranging classroom for best viewing and listening					
c. using criteria in selecting teaching materials					
d. preparing a class to use audio-visual materials					
e. developing follow-up activity					
f. evaluating use of audio-visual materials					
g. developing effective listening habits					
h. developing resource units					

(more)

	1	2	3	4	5
i. organizing field trips and excursions					
j. transferring pictures to a chalkboard					
k. chalkboard drawing and lettering					
l. screening for seeing and hearing deficiencies					
m. classroom demonstrations					
n. dramatization (plays, role playing, puppets)					
o. other _____					
p. " _____					
4. The teacher should be competent in:					
a. mounting, filing and classifying flat pictures					
b. mounting, filing and classifying specimens and objects					
c. making maps, charts and posters					
d. preparing feltboards and feltboard materials					
e. constructing models					
f. preparing displays					
g. preparing exhibits and dioramas					
h. making duplicating stencils					
i. preparing 3¼" x 4" handmade lantern slides					
j. preparing 2" x 2" handmade slides ...					
k. producing photographic pictures					
l. producing motion pictures					
m. making recordings					
n. producing filmstrips					
o. producing radio programs					
p. producing television programs					
q. developing and printing still pictures					
r. other _____					
s. " _____					

Thanks

Code: 1 - Great importance
2 - Considerable importance
3 - Average importance
4 - Little importance
5 - No importance

March 10, 1958

Dear _____:

A few days ago I sent you a letter explaining a research design which we hope to develop at the University of Oklahoma. This research will enable us to evaluate the pre-service audio-visual experiences offered teacher education students in Oklahoma. The letter also asked you to participate in this study by acting as a member of a jury of experts along with thirty-seven other professional persons from across the nation.

The majority of the rating scales have been returned but since a select group, composed of a relatively small number of people was used, your response is badly needed. Could you help make the response complete?

I fully realize that making a demand on your time is asking a great favor. However, the further I get into the study the more convinced I am that it will make a contribution in an area where study is needed. For your convenience I am enclosing another questionnaire and if you can possibly find time, please check the items and return the instrument to me. Your cooperation will be deeply appreciated.

Sincerely,

Harry P. Zimmerman
Graduate Assistant

HPZ:lj

APPENDIX C

LETTER OF TRANSMITTAL

AND

QUESTIONNAIRE TO COLLEGES AND UNIVERSITIES

Dear _____:

As a professional educator you are aware of the importance of pre-service preparation of teachers. We are attempting, at the University of Oklahoma, to carry on research which will enable us to make an evaluation of the pre-service audio-visual experiences offered teacher education students in Oklahoma state supported colleges and universities.

The study attempts to answer three questions: (1) What audio-visual experiences seem to be needed by beginning teachers? (2) To what extent are these needed experiences offered in the pre-service teacher education programs? (3) To what degree do beginning teachers claim to possess these needed knowledges and competencies? The enclosed questionnaire is concerned with the second problem and because of your position with the college, you are being asked to supply the information requested.

I would like to point out that this is not a comparative study but a <u>total state study</u>. Neither you nor the college which you represent will be referred to by name.

I realize this is an extremely busy time for you but hope that you can favor us with an early response.

Sincerely,

Harry P. Zimmerman
Graduate Assistant

HPZ:lz

QUESTIONNAIRE
ON
AUDIO-VISUAL LEARNING OPPORTUNITIES AVAILABLE TO PRE-SERVICE TEACHER EDUCATION STUDENTS IN OKLAHOMA STATE SUPPORTED INSTITUTIONS OF HIGHER LEARNING

Name of Institution _____

Name of Person reporting _____

The statements below represent audio-visual knowledges and competencies judged by some to be needed by beginning teachers.

You are requested to indicate if your institution provided pre-service opportunities that would enable teacher education students who graduated in 1956 to gain the stated knowledges and competencies and the course offerings which provided these opportunities.

The questionnaire is divided into two major divisions: (I) Knowledges, and (II) Competencies. KNOWLEDGE has reference to <u>insight</u> necessary for proper selection and utilization of materials while COMPETENCY has reference to <u>skill</u> in selection and utilization of materials.

Directions: Place a check (x) in the appropriate column to the right of each statement. Then <u>indicate</u>, below each A, B, C, group of related knowledges and competencies where the <u>opportunities</u> were offered.

I. KNOWLEDGES

A. Did the teacher education curricula at your school provide your 1956 graduates opportunities for understanding:

	Yes	No
1. the important place of audio-visual materials in learning?		
2. criteria for selecting audio-visual materials for a specific teaching purpose? ..		
3. research and reference materials in audio-visual education?		
4. Historical development of the audio-visual movement?		
5. others _____		

Consider collectively your yes responses under "A" above and check the following course or courses which provided planned learning opportunities for these related knowledges:

(a) Audio-visual___, (b) Student teaching___,
(c) Student teacher seminar___, (d) Methods___,
(e) Others_____.

B. Did your teacher education curricula provide your 1956 graduates opportunities for understanding:

	Yes	No
1. different kinds of audio-visual equipment?		
2. the mechanisms of audio-visual equipment (what makes it run)?		
3. projection equipment optics?		
4. cost and sources of audio-visual equipment?		
5. fundamentals of classroom acoustics?		
6. types of projection screens?		
7. light control techniques for darkening classrooms?		
8. methods of ventilating darkened rooms? ..		
9. others _____		

Consider collectively your yes responses under "B" above and check the following course or courses which provided planned learning opportunities for these related knowledges:

(a) Audio-visual___, (b) Student teaching___,
(c) Student teacher seminar___, (d) Methods___,
(e) Others_____.

C. Did your teacher education curricula provide your 1956 graduates opportunities for understanding instructional value of:

	Yes	No
1. three-D materials such as objects, specimens, models, etc.?		
2. graphic materials such as posters, charts, maps, and graphs?		
3. 3¼" by 4" lantern slides using cellophane, clear glass with wax pencil, silhouettes, India ink, and etched glass?		
4. motion picture photographic techniques such as time-lapse photography, microphotography, animation, and slow motion?		

	Yes	No
5. types of sound motion pictures such as documentary films, feature films, and instructional films?		
6. chalkboard?		
7. flat pictures and types of mountings? ..		
8. arts and crafts such as wood carving, leather tooling, etc.?		

Consider collectively your yes responses under "C" above and check the following course or courses which provided planned learning opportunities for these related knowledges:

(a) Audio-visual___, (b) Student teaching___,
(c) Student teacher seminar___, (d) Methods___,
(e) Others_____.

II. COMPETENCIES (SKILLS)

A. Did your teacher education curricula provide your 1956 graduates opportunities to develop skill in operation of:

	Yes	No
1. 16mm sound motion picture projector (general skill)?		
(a) setting up a 16mm projector?		
(b) threading a 16mm projector?		
(c) focusing the picture?		
(d) adjusting the sound?		
2. 3¼" by 4" lantern slide projector?		
3. combination of 2" by 2" slide and film-strip projector?		
4. opaque projector?		
5. duplicating equipment?		
6. disc recording equipment?		
(a) turntable playback equipment?		
7. magnetic recording equipment?		
8. public address equipment?		
9. micro-projector?		
10. tachistoscope (flash-o-meter)?		
11. others_____		

Consider collectively your yes responses under "A" above and check the following course or courses which provided planned learning opportunities for these related competencies:

(a) Audio-visual___, (b) Student teaching___,
(c) Student teacher seminar___, (d) Methods___,
(e) Others_____.

B. Did your teacher education curricula provide your 1956 graduates opportunities to learn how to:

	Yes	No
1. change lamps in projection equipment (general skill)?		
2. change the exciter lamp (sound)?		
3. clean and oil projection equipment?		
4. clean recorder and cutting heads?		
5. clean and repair broken motion picture film?		
6. repair broken magnetic recorder tape? ...		
7. care of chalkboard surface?		
8. others_____		

Consider collectively your yes responses under "B" above and check the following course or courses which provided planned learning opportunities for these related competencies:

(a) Audio-visual___, (b) Student teaching___,
(c) Student teacher seminar___, (d) Methods___,
(e) Others_____.

C. Did your teacher education curricula provide your 1956 graduates opportunities to become competent in:

	Yes	No
1. making a community survey for possible field trips?		
2. arranging classrooms for best viewing and listening?		
3. using criteria for selecting materials? .		
4. preparing a class to use audio-visual materials?		
(a) recognizing a need for a type of materials?		
(b) culminating reports, projects, etc.?		
5. developing follow-up activities?		
6. evaluating materials?		
7. developing effective listening habits? ..		
8. compiling audio-visual materials for a unit of teaching?		
9. organizing field trips and excursions? ..		
10. conducting a field trip?		
11. transferring pictures to a chalkboard? ..		
12. freehand drawing and lettering?		
13. screening for seeing and hearing deficiencies?		
14. classroom demonstrations?		

	Yes	No
15. dramatization?		
16. others_____		

Consider collectively your yes responses under "C" above and check the following course or courses which provided planned learning opportunities for these related competencies:

(a) Audio-visual___, (b) Student teaching___,
(c) Student teacher seminar___, (d) Methods___,
(e) Others_____.

D. Did your teacher education curricula provide your 1956 graduates opportunities for developing competency (skill) in:

	Yes	No
1. mounting, filing and classifying flat pictures?		
2. mounting, filing and classifying specimens and objects?		
3. making maps, charts and posters?.....		
4. preparing feltboards and feltboard materials?		
5. constructing models?		
6. preparing displays?		
(a) locating and selecting materials? ...		
(b) arranging materials for display?		
7. preparing exhibits and dioramas?		
8. making duplicating stencils?		
9. preparing 3¼" by 4" handmade lantern slides?		
(a) making typewritten cellophane slides?		
(b) making silhouette slides?		
(c) making India ink slides?		
(d) making etched glass slides?		
10. preparing 2" by 2" handmade slides?		
11. producing photographic pictures?		
12. producing simple motion pictures?		
13. making recordings?		
14. producing filmstrips?		
15. producing radio programs?		
16. producing television programs?		
17. developing and printing still pictures? .		
18. others_____		

Consider collectively your yes responses under "D" and check the following course or courses which provided planned learning opportunities for these related competencies:

(a) Audio-visual___, (b) Student teaching___,
(c) Student teacher seminar___, (d) Methods___,
(e) Others_____.

ONE MORE THING PLEASE

From the following courses, check those which were required of all teacher education graduates of your school qualifying for either elementary or secondary Oklahoma teaching certificates:

(a) Audio-visual___, (b) Methods (general or special)___,
(c) Student teaching___, (d) Student teacher seminar___.

Add other required teacher education courses, providing each contributed planned learning opportunities for any significant block of the above knowledges and competencies: _____

_____

_____

_____

Thanks

APPENDIX D

LETTER OF TRANSMITTAL, QUESTIONNAIRE TO GRADUATES OF COLLEGES AND UNIVERSITIES, AND FOLLOW-UP POSTAL CARD

Dear Teacher:

As a professional educator you are aware of the need for continuous evaluation of curricula. You will be interested to know that we, at the University of Oklahoma, are now engaged in research designed to evaluate the pre-service audio-visual experiences offered through the teacher education curricula of state supported colleges and universities in Oklahoma.

You have been selected as one of several teachers who might be willing to give your reactions to the enclosed questionnaire. The success of this study is dependent upon the information you can supply; and since the number receiving this instrument is relatively small, your response is badly needed. No reference will be made to your name, to the school in which you teach or to the college from which you graduated. Also I would like to point out that the information you give will be used to evaluate pre-service teacher education in Oklahoma and not you. In other words, the study seeks to learn to what degree the teacher education program has prepared you in particular knowledges and competencies.

The enclosed questionnaire is a simple rating scale consisting of statements representing audio-visual knowledges and competencies judged to be needed by beginning teachers. You are urged to complete the questionnaire whether you have had a special course in audio-visual education or not. Your program of teacher education may have provided some or all of these learning experiences elsewhere in the curriculum.

It would be greatly appreciated if you could contribute a few minutes of your time to rate the enclosed items and promptly return the questionnaire to this office.

Sincerely,

Harry P. Zimmerman
Graduate Assistant

QUESTIONNAIRE
ON
TEACHER EVALUATION OF PRE-SERVICE EXPERIENCES FOR PROVIDING KNOWLEDGES AND COMPETENCIES IN AUDIO-VISUAL EDUCATION

Name_____ School_____

If you teach in Elementary, give grade_____

If you teach in Jr. High or Sr. High, give main subject_____

The statements below represent audio-visual knowledges and competencies judged by some to be needed by beginning teachers.

You are asked to rate each item listed, in terms of the degree to which you possessed the knowledge or competency at the time you began your professional classroom work.

Directions: Please consider each item and then indicate your reaction by placing a check (X) in the appropriate column using the following code:

1 - Adequate knowledge or competency
2 - Limited knowledge or competency
3 - No knowledge or competency

I. KNOWLEDGES

A. As a beginning teacher I had knowledge of:

	1	2	3
1. different kinds of audio-visual equipment (filmstrip and slide projectors, opaque projector, recorders, etc.			
2. the mechanism of audio-visual equipment (What makes them run? How is the sound reproduced? etc.)			
3. projection equipment optics (Projection, condensor lenses)			
4. cost and sources of audio-visual equipment			
5. fundamentals of classroom acoustics			
6. types of projection screens (surfaces and mountings)			
7. light control techniques for darkening classrooms			
8. methods of ventilating darkened rooms ...			
9. list other needed knowledges_____			

B. As a beginning teacher I had knowledge of basic principles underlying use of audio-visual materials including:

1	2	3

1. the place of audio-visual materials in learning .....
2. the best materials for a specific teaching purpose .....
3. research and reference material in audio-visual education .....
4. historical development of the audio-visual movement .....
5. list other needed knowledges _____

_____

C. As a beginning teacher I had knowledge of the educational value of teaching materials including:

1	2	3

1. three-D materials such as objects, specimens, models, and mock-ups .....
2. graphic materials such as posters, charts, maps and globes, graphs, and cartoons .....
3. 3¼" by 4" lantern slides using cellophane, clear glass with wax pencil, silhouettes, India ink, and etched glass ...
4. motion picture photographic techniques such as time-lapse photography, microphotography, animation, and slow motion .
5. types of sound motion pictures such as documentary films, feature films, and instructional films .....
6. chalkboard .....
7. flat pictures and types of mountings ....
8. arts and crafts such as wood carving, leather tooling, paper mache, and weaving .....
9. list other needed knowledges _____

_____

Please check the pre-service course or courses which you feel gave you the understanding necessary for gaining the knowledges rated as (1) adequate preparation, and (2) limited preparation:

Audio-visual course _____ Methods course _____

Student teaching_____ Other _____

II. COMPETENCIES (SKILLS)

A. As a beginning teacher I had competency in operation of audio-visual equipment listed below:

	1	2	3
1. 16mm sound motion picture projector (general skill)			
(a) setting up a 16mm projector			
(b) threading a 16mm projector			
(c) focusing the picture			
(d) adjusting the sound			
(e) rewinding the film			
2. 3¼" by 4" lantern slide projector (overhead and/or horizontal)			
3. filmstrip projector			
(a) converting filmstrip projector to 2" by 2" slide projector			
4. opaque projector			
5. duplicating equipment			
6. disc recording equipment			
(a) turntable playback equipment			
7. magnetic recording equipment			
8. public address equipment			
9. micro-projector			
10. tachistoscope (flash-o-meter)			
11. list other needed competencies not included above _____			

B. As a beginning teacher I had competency in maintenance of audio-visual equipment including:

	1	2	3
1. changing lamps in projection equipment ..			
2. changing the exciter lamp (sound)			
3. cleaning and oiling projection equipment			
4. cleaning recording and cutting heads			
5. cleaning and repairing broken motion picture film			
6. repairing broken magnetic recorder tape .			
7. care of chalkboard surface			
8. list other needed competencies not included above _____			

Code: 1 - Adequate competency
2 - Limited competency
3 - No competency

C. As a beginning teacher I had competency in utilizing audio-visual materials including:

	1	2	3
1. making a community survey for possible field trips			
2. arranging classrooms for best viewing and listening			
3. using criteria for selecting materials for a learning situation			
4. preparing a class to use audio-visual materials			
(a) recognizing a need for a type of material			
(b) involving students in establishment of objectives to be gained from the materials used			
5. developing follow-up activities			
(a) conducting a discussion			
(b) culminating reports, projects, etc...			
6. evaluating materials which contribute to the objective of the learning situation .			
7. developing effective listening habits ...			
8. compiling audio-visual materials for a unit of teaching			
9. organizing field trips and excursions ...			
10. conducting a field trip			
11. transferring pictures to a chalkboard ...			
12. freehand drawing and lettering on the chalkboard			
13. screening for seeing and hearing deficiencies			
14. classroom demonstrations			
15. dramatization			
16. list other needed competencies not included above _____			
_____			

D. As a beginning teacher I had competency in production of the following audio-visual materials including:

	1	2	3
1. mounting, filing and classifying flat pictures			
2. mounting, filing and classifying specimens and objects			
3. making maps, charts and posters			

Code: 1 - Adequate competency
2 - Limited competency
3 - No competency

	1	2	3
4. preparing feltboards and feltboard materials			
5. constructing models			
6. preparing displays			
(a) locating and selecting materials			
(b) arranging materials for display			
7. preparing exhibits and dioramas			
8. making duplicating stencils			
9. preparing 3¼" by 4" handmade lantern slides			
(a) making typewritten cellophane slides			
(b) making silhouette slides			
(c) making India ink slides			
(d) making etched glass slides			
10. preparing 2" by 2" handmade slides			
11. producing photographic pictures			
12. producing simple motion pictures			
13. making recordings			
14. producing filmstrips			
15. producing radio programs			
16. producing television programs			
17. developing and printing still pictures ..			
18. list other needed competencies not included above _____ _____			

Please check the pre-service course or courses which you feel gave you the understanding necessary for gaining the knowledges rated as (1) adequate preparation, and (2) limited preparation:

Audio-visual course _____ Methods course _____

Student teaching _____ Other _____

Code: 1 - Adequate competency
2 - Limited competency
3 - No competency

Thanks

Norman, Oklahoma
W. W. C., Box 4013

Dear Colleague:

A few days ago I sent you a letter describing a research project we are conducting at the University of Oklahoma. This letter also requested that you fill out a questionnaire and return it to us. The response has been good. However, since the number of teachers used is relatively small, your cooperation is most important.

I know you are a busy person, but the few minutes required to fill out the questionnaire will give you an opportunity to make a professional contribution to the program of teacher education in Oklahoma. Won't you please let us have your immediate response?

Thanks,

Harry P. Zimmerman