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SIGNIFICANT ASPECTS OF THE INDUSTRIAL ARTS
PROGRAMS IN THE JUNIOR HIGH SCHOOLS
OF THE FOUR STATE REGION

A Thesis Submitted to the Graduate Division in Partial
Fulfillment of the Requirements for the
Degree of Specialist in Education

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By

Billy Max Bumgardner

KANSAS STATE COLLEGE OF PITTSBURG

Pittsburg, Kansas

July, 1965

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ABSTRACT

The purpose of this study was to determine some of the more significant aspects, with respect to diversification and similarity, of the industrial arts programs in the junior high schools of the four state region of Arkansas, Kansas, Missouri, and Oklahoma for the school year 1963-1964. The major aspects examined were the general organization and programs of the junior high schools; the industrial arts courses and content, and the nature and organization of the industrial arts programs, the types of shops used, the grade levels of instruction, and the opinions of respondents concerning the programs.

Significant findings included the following: (1) Unit shop courses were most widely used; (2) small schools had limited offerings; (3) only a small percentage of the schools made industrial arts courses available to girls; (4) variations of opinion existed concerning the emphasis which should be placed on industrial arts at the junior high school level; (5) course offerings in grades seven, eight, and nine increased as the size of the enrollment increased; (6) a large number of respondents believed that industrial arts shops were adequately equipped with adequate space facilities; and (7) the major areas of industry, common to the programs, ranked according to frequency, were wood, metal, and drawing.

The general conclusion drawn from this study was that no basic minimum core of industrial arts exploratory experiences existed in the junior high schools of the region, experiences that would assure a transfer student of receiving the same basic industrial arts content from one school to another.

The lack of such a basic core, or the variation in programs, exists in curricula, course content, physical facilities, duration of instruction, instructional staff utilization, course titles, shop types, grade level of experiences, ratings, and philosophy.

As a result of this conclusion, it was recommended that an organization of junior high school industrial arts instructors be formed for the purpose of developing a workable degree of standardization for the industrial arts programs of the region.

CHAPTER I

THE PROBLEM

Most educators in industrial arts would perhaps contend that the field provides an important and effective program of studies for the educational development of the junior high school student. Although adequate programs, in this senses, may be offered in many of the junior high schools, it would nevertheless appear that a wide variation in content, facilities, operational procedures, and even philosophies exists in the industrial arts programs of these schools. If this is true, some of the more significant details with respect to both diversification and similarity should be of interest and value to those concerned with junior high school industrial arts programs.

Industrial arts, like other curriculum areas, should be examined and evaluated periodically. It is by means of research that strong and weak programs are detected, important developments uncovered, similarities and differences noted, and standards for evaluation and improvement developed. It is believed, therefore, that a regional study of the industrial arts programs in the junior high schools of the four state area of Arkansas, Kansas, Missouri, and Oklahoma would be of interest and value in a number of important respects

to those concerned with such programs in this region, and perhaps in other parts of the country. A study of these programs should help determine the role of industrial arts in the total junior high school program.

As a background to this report, the purpose of this chapter is to present a summary statement of the function of the junior high school and of industrial arts; a statement of and an analysis of the problem, including its importance and limitations; a definition of terms cognate to the study; the sources of data and method of investigation; and to review studies relating to the problem.

Function of the Junior High School

The junior high school was partially conceived with the idea of offering early adolescents exploratory experiences. The junior high school was to provide an opportunity for students to obtain the breadth of experiences regarded as important in the lives of modern youth. A joint study conducted on the junior high school explains the fundamental purposes of exploratory experiences at this school level. It states:

Exploratory experiences have several fundamental purposes. First, they contribute to and are an integral part of the general education program... Second, they help students develop present and future social and recreational skills and interests... Third, they provide new experiences which broaden the horizons of boys and girls ... Fourth, exploratory experiences help students

develop new, useful skills... A student has little basis for election of subjects such as art, music, languages, business, manual arts, science, and many others unless he has an experience in each of these subject areas.

Exploration should permeate the entire program of the junior high school. Many experiences such as creative writing, vocational orientation and public speaking can be provided in the core program... Still others should be provided in short courses specifically planned and designed for exploratory purposes.¹

Function of Industrial Arts

The field of industrial arts has definite contributions to make to exploratory types experiences for early adolescents in junior high schools. It is generally accepted that junior high school industrial arts experiences should be broad and exploratory and should provide youth with an understanding of basic areas of industry and technology.

Marshall Schmitt, industrial arts specialist in the U. S. Office of Education, considers the function of industrial arts in the junior high schools as:

The industrial arts as an integral part of the junior high curriculum (grades 7, 8, and 9) provides boys and girls with the opportunity to experience work in many different aspects of industry. Laboratory of industries, woodworking, metalworking, ceramics, drawing, textiles, and graphic arts are but a few of the broad subject matter courses that may be offered.

¹The Southern Association of Colleges and Secondary Schools, The Junior High School Program (A Joint Study Conducted by the Commission on Secondary Schools and the Commission on Research and Service. Atlanta: The Southern Association of Colleges and Secondary Schools, 1958), p. 31.

The basic industrial processes, including tools, machines, and materials with their related human problems constitute the course of curriculum content. Emphasis in this program is breadth of industrial understanding and experience in as many activities as feasible.²

The sampling of a variety of industrial type exploratory experiences by these students at the junior high school level is one way in which they may locate and develop their interests and aptitudes.

Statement and Analysis of the Problem

In the junior high schools of the four state area of Arkansas, Kansas, Missouri, and Oklahoma, industrial arts programs appear to be, by observation and general concensus, somewhat diversified. The nature and extent of these programs do not seem to be fully known. It would appear that much of the content and organization of such programs is limited while other programs appear to be broad in scope. There seems to be no apparent continuity of opportunity in the same type of industrial arts program for a student transferring from one school to another.

This study undertakes to determine some of the more significant aspects with respect to both the diversification and similarity of the industrial arts content and organization existing in the junior high schools of the four state region.

²Schmitt, Marshall L., "Why--The Industrial Arts," Industrial Arts and Vocational Education Magazine, May, 1961. pp. 50-51.

It also proposes to determine, at least in part, to what degree these programs are influenced by such factors as:

(1) the relationship between the junior high school program and industrial arts, (2) the content, nature and organization of the industrial arts courses, and (3) the attitudes expressed by the respondents concerning industrial arts programs under their supervision.

In the development of this study, the three foregoing major items will be approached through the following more detailed points as they are subordinate to the particular major elements. This takes on the form of an analysis of the problem and is presented in outline form below. The outline closely parallels the order of items as they appear in the questionnaire and the succeeding chapters of the text:

- I. The junior high schools participating in the study.
 - A. Identification of the respondents.
 - B. Sizes of the schools by size of enrollments.
 - C. Administrative organization of the schools.
 - D. Number of years the schools have been organized.
 - E. Schools not having industrial arts programs.
 - F. Number of years in which the industrial arts programs had been established in the schools.
 - G. A comparison of the length of academic and shop classes.
 - H. Utilization of the industrial arts instructor in the schools.
- II. Content, nature and organization of the industrial arts programs.
 - A. Length of courses offered in weeks.
 - B. Titles of courses offered.
 - C. Areas of industry covered in courses.
 - D. Types of industrial arts organizational plans.
 - E. Grades in which industrial arts courses were offered.
 - F. Courses required or elective, for boys and girls.
 - G. Structure of the courses.

- III. The administrators' and industrial arts instructors' views concerning the industrial arts programs.
- A. Emphasis which should be placed on the industrial arts program.
 - B. How the industrial arts programs were rated.
 - C. Comparison of ratings made and the amount of emphasis which is needed on the programs.
 - D. Comparison of ratings made and the number and types of shops organized in the programs.
 - E. Opinions concerning adequacy of space and facilities for the program.
 - F. Comments made by the respondents concerning their individual industrial arts programs.

Value of the Study

This study should be of value in its presentation of the existing facts as found in the nature of the content and organization of the junior high school industrial arts programs surveyed. By comparing the various programs on the principal points that were studied, this study should provide some ideas relative to common practices and standards concerned with junior high school industrial arts. Such standards and practices could be of use in evaluation of existing programs as well as in the development of new ones. The data, as they have been ascertained in this study, are recorded so that conclusions bearing upon the various aspects of these programs may be drawn.

Twenty per cent of the population in the United States actually change residence every year.³ This mobility of

³Venn, Grant, "Needed: A New Relationship between Education and Work." School Shop Magazine, (April, 1965), p. 42.

individuals from city to city and from state to state means that many junior high school students are transferred from school to school. It was pointed out in the foregoing that some diversity of industrial arts content apparently exists in many junior high schools. If there is little continuity between the industrial arts experiences which the student has received and those to which he will go, it would imply that there is a problem of program continuity among these schools. If basic industrial arts exploratory experiences could be agreed upon and established as basic required experiences in any junior high school industrial arts program, more continuity could be developed between the junior high school programs of various cities and between the schools in the individual states. Also, the transition from a junior high school to a senior high school industrial arts program could be made more meaningful.

Another important reason for attempting a study of industrial arts programs in the junior high schools of a four-state area is the apparent fact that no studies such as this have been made, particularly in the four-state region of Arkansas, Kansas, Missouri, and Oklahoma.

Limitations of the Study

This study of the industrial arts programs in the junior high schools of the four state region was subject to the

following limitations:

1. The junior high schools in the state of Arkansas, Kansas, Missouri, and Oklahoma.
2. The Industrial arts programs as they existed in these schools during the school year 1963-1964.
3. The industrial arts courses offered in grades seven, eight and nine only.
4. Data obtained through the questionnaire.

Definitions of Terms Used

In order to avoid any confusion which might arise as a result of encountering unfamiliar terms, key terms used in this study are defined as follows:

Industrial Arts. Feirer and Lindbeck, in a few words, provide, for purposes of this report, an adequate definition of the term industrial arts. They state:

By definition, industrial arts is the broad study of tools, materials, equipment, processes, products and occupations of industry, pursued for general educational purposes in the shops and laboratories of schools. The key words in this definitive statement are pursued for general educational purposes, for this truly is the element which distinguishes industrial arts from other facets of industrial education. Industrial arts is held to be general education because it enriches the education of all the students in the total school program. Though it has certain pre-vocational values, its prime mission at present is not to provide vocational specialization for students.

Instead, through industrial arts, students receive orientation to the problems and nature of the highly industrialized technical society in which we live.⁴

⁴Feirer, John L., and Lindbeck, John R., Industrial Arts Education, Washington, D. C., The center for Applied Research in Education, Inc., 1964. p. 15.

Shop. A facility especially designed and equipped with the necessary tools and machines to provide a specific or group of industrial type exploratory experiences to students.

Unit Shop. A shop in which only one area of instruction is carried on. Example: An electric welding, general drafting or sheetmetal shop.

Limited general shop. A type of shop organization providing activities and facilities which are limited to work with a single basic material, or to a closely related group or family of industries such as metal work (forging, foundry, welding, machine shop, sheet metal); or woodwork (handtool woodworking, machine woodworking, cabinet making, woodfinishing, and others).

Comprehensive general shop. A type of shop organization which provides equipment and facilities for activities in two or more industrial areas such as woods, metals, electricity, drafting, power mechanics, graphic arts, and plastics.

Laboratory of arts and industries. A type of shop in which a large number of areas are represented such as woods, metals, plastics, printing, electricity, photography, crafts, and other areas.

Technology, industrial. The branch of knowledge which deals with the accumulated knowledge and skills used in industry.

Sources of Data and Method of Investigation

The instrument used for the collection of data for this survey was the questionnaire. The advantages and disadvantages of the questionnaire technique as a source of information is readily recognized. It was selected as the practical means by which the information could be obtained from each school surveyed in the four state area. The task of personal interviews with the individuals concerned in each school, or the direct observation and study of each program, would not have been practical from the standpoint of time and financial considerations.

The data for this study were obtained from returned questionnaires sent to 362 schools in Arkansas, Kansas, Missouri, and Oklahoma listed as junior high schools in Patterson's American Education.⁵ A percentage of 68.8 or 248 schools responded, five of which were no longer classified as junior high schools; twenty-eight of the remaining junior high schools which had industrial arts programs in operation. For purposes of clarification of presentation, and for the analysis of data, these 215 schools were grouped into three categories classified by the size of pupil enrollments. This grouping is discussed in chapter II.

⁵Patterson's American Education, Vol. LVII. Educational Directories Inc., Mount Prospect, Illinois. 1961.

A review of the latest available literature was made to discern the present philosophies of educators in the areas of junior high school education and industrial arts education. As far as possible studies directly relating to the problem were reviewed.

Related Studies

An extended search of literature in the field of industrial arts education and its relation to the junior high school revealed that no studies of this nature had been conducted in the region of Arkansas, Kansas, Missouri, and Oklahoma. Several separate studies of junior high school industrial arts programs in these individual states had been completed over ten years ago, which in itself made their relevance to this study questionable in terms of current conditions.

The remaining sources of related literature reviewed were those dealing with studies made of the junior high school industrial arts programs in the individual states with which this study was concerned. A discussion of these studies was limited to those which could be obtained from the Porter Library at Kansas State College of Pittsburg, Pittsburg, Kansas, and those which were obtained through this library on inter-library loan. A review was also made of information contained in abstracts of dissertations concerned with the states involved in this study.

In 1964 Moody⁶ made a study of industrial arts printing in the four-state region of Arkansas, Kansas, Missouri, and Oklahoma, dealing with the secondary schools of these four states. This survey was limited to the study of printing in grades nine through twelve.

Davenport⁷ conducted a survey in 1959 in which an analysis of the status and needs of industrial arts in the public secondary schools of Arkansas was made. This study, dealing with both the junior and senior high schools of Arkansas revealed that out of 46 responding secondary schools, industrial arts was being taught by 64 industrial arts instructors. It also revealed that 62.5 per cent of these schools offering industrial arts programs offered comprehensive general shop courses. What percentage of these programs were in junior high schools was not indicated in this study. An earlier study, made by Cassidy⁸ in 1949, revealed a much smaller percentage of industrial arts programs existing in the secondary schools of Arkansas. No other recent studies had been made

⁶Moody, Homer, "The Status of Industrial Arts Printing in the Region of Arkansas, Kansas, Missouri, and Oklahoma," (Unpublished Master's problem, Kansas State College of Pittsburg, Pittsburg, Kansas, 1964).

⁷Davenport, Joe U., "An Analysis of the Status and Needs with Suggestions for Improvement of Industrial Arts in the Public Secondary Schools of Arkansas." (Unpublished Doctoral Dissertation, University of Arkansas, 1959).

⁸Cassidy, Frank E., "Industrial Arts in Arkansas," (Unpublished Master's thesis, Oklahoma Agricultural and Mechanical College, Stillwater, Oklahoma, 1949).

of the industrial arts programs in the junior high schools of Arkansas.

These Arkansas studies did not reveal any truly pertinent information about the junior high schools industrial arts programs. One major conclusion was drawn from these studies. In comparing the study of Cassidy⁹ made in 1949 to that of Davenport¹⁰ made in 1959, an increase in the number of industrial arts programs for the ten year period was noticeable.

A survey of the industrial arts programs in the junior high schools of the state of Kansas was made in 1959 by Rundle.¹¹ This study provided a partial view of the junior high school industrial arts program in the state. It indicated that the majority of industrial arts courses in these schools were unit shop courses. A portion of this study revealed, that in general, girls were not permitted to enroll in industrial arts classes. The largest number of required industrial arts courses in these schools was found in grades seven and eight.

⁹Ibid. p. 12.

¹⁰Davenport, op. cit.

¹¹Rundle, Kenneth, "The Junior High School Industrial Arts Program in Kansas," (Unpublished Master's problem, Kansas State College of Pittsburg, Pittsburg, Kansas, 1959).

Bell¹² completed a study of Kansas public secondary school industrial arts for the school year 1962-1963. The major findings relevant to this study were as follows:

1. Ninety-five accredited junior high schools in Kansas in 1962-1963 offered industrial arts.
2. Approximately 55 per cent of these junior high schools had pupil enrollments exceeding 499 pupils.
3. Thirty-seven per cent of the junior high schools reported having had industrial arts programs forty years or more. Another 37 plus per cent had industrial arts programs which had been in operation less than ten years.
4. Courses in the junior high school industrial arts programs were composed predominantly of general woodworking, general shop, drafting, and general metals.
5. In the general shop courses the first seven most common activities were in the area of woodworking, drafting, planning, sheet metal, electricity, freehand drawing, and bench metal.
6. The rotating of students through unit shops for introductory purposes was reported in 14 junior high schools with intervals ranging from six to twelve weeks.
7. Woodworking was taught more frequently to seventh grade students. General shop, general metals, drafting, and electricity were taught more often on the eighth grade level than on any other grade level.

Although the above study involved both the junior and senior high school industrial arts programs in Kansas only, definite conclusions were drawn from these findings concerning industrial arts in this state. Bell¹³ concluded that there

¹² Bell, Charles L., "Status of and Need for Industrial Arts in the Public Schools of Kansas with Implications for Teacher Education." (Unpublished Doctoral Dissertation, University of Missouri, Columbia, Missouri, 1964).

¹³ Ibid. p. 13

were both over-developed and under-developed industrial arts programs in the state of Kansas and an imbalance within these programs. He also concluded that woodworking had been over-emphasized as an industrial arts activity and as a general shop activity. Evidence presented in this study seemed to indicate that many unit shops were not true unit shops but were, in fact, general shops.

In making a study of the industrial arts programs of the junior high schools of the state of Missouri in 1958, Ward¹⁴ discovered that unit and general shop courses were offered in these programs, the general shop being the most predominant type of course. The areas of industry most frequently covered in the general and unit shops in these junior high schools were: metal, wood, crafts, and drawing and planning. In the unit shop courses, crafts ranked first in frequency of occurrence. Electricity was the area of industry least offered in both the unit and the general shop courses. Most of the industrial arts instructors favored girls enrolling in shop courses but many of the administrators of these schools were against this practice. In schools which permitted girls to take industrial arts courses, only a few of the girls were actually enrolled.

¹⁴Ward, Travis C., "Status and Offering of Industrial Arts Courses in the Junior High Schools of Missouri," (Unpublished Master's thesis Northeast Missouri State Teachers College, Kirksville, Missouri, 1958).

The most recent survey of industrial arts programs in the junior high schools of the state of Oklahoma was made in 1954 by Alford.¹⁵ Tabulated results of 139 industrial arts programs revealed that 53 schools required industrial arts for boys in grade seven, 76 schools required industrial arts in grade eight, while 37 offered industrial arts courses as elective in this same grade. The largest number of schools offering industrial arts courses as elective in the ninth grade totaled 84 out of 139 schools. A tabulation of the type of shops in which these industrial arts courses were organized was based on 57 schools. Out of the 57 schools there were 37 unit shops and 20 general shop courses offered. The largest number of activities included in the unit and general shop courses ranked according to the frequency of their occurrence were: (1) hand woodwork, (2) mechanical drawing, (3) machine woodwork, (4) leather, and (5) metal.

In 1953, a survey was conducted by Henson¹⁶ on the national level in which he surveyed the industrial arts programs of 34 junior high schools located in cities ranging in population size of from 200,000 to 400,000. This study was made

¹⁵ Alford, Booker T., "Industrial Arts in Oklahoma Junior High Schools in 1954." (Unpublished Master's thesis, Oklahoma Agricultural and Mechanical College, Stillwater, 1954).

¹⁶ Henson, Ira D., "A Status Study of Industrial Arts Offerings in a Number of Urban Communities in the United States." (Unpublished Master's thesis, University of Florida, Gainesville, Florida, 1953).

in order to obtain reliable data concerning industrial arts offerings in the selected urban areas of the United States. The major findings pertaining to this particular study were as follows:

1. The 6-3-3 plan of school organization was the type found in most of the schools surveyed.
2. Approximately 49 per cent of the junior high schools offer industrial arts in grades seven, eight, and nine.
3. Sixty per cent of the boys and 12 per cent of the girls in these schools were enrolled in industrial arts.
4. All of the respondents indicated that industrial arts was essential at the junior high school level.
5. The following areas of industry, ranked according to their frequency of occurrence, were covered in the courses: (a) graphic arts, (b) woods, (c) drawing, (d) general metals, (e) general shop, (f) electricity, (g) transportation, and (h) others.
6. The types of shops in which these courses were offered were almost evenly divided among the unit, and the general shop.

The philosophies of the junior high school and industrial arts closely parallel one another with respect to exploration, offering students a wide variation of experiences. Through this study certain factors will be developed in an attempt to discover the characteristics of the junior high school industrial arts programs surveyed. Data obtained through this study may provide a basis for improvement of many existing junior high school industrial arts programs and could provide also a basis for establishing such in those schools where none presently exist.

CHAPTER II

THE JUNIOR HIGH SCHOOLS PARTICIPATING IN THE SURVEY

In the preceding chapter, the statement of the problem, the method of investigation, the definition of terms, and a review of related studies were given. It was indicated in the discussion of the statement and analysis of the problem that three major elements would be developed in the presentation of the data: (1) an identification of the organization and programs of the responding junior high schools; (2) the content, nature, and organization of the industrial arts programs in these schools; and (3) the opinions of the respondents concerning the respective industrial arts programs under their jurisdiction. Each of these major items will be examined and developed in separate chapters.

The purpose of this chapter is to provide an additional understanding of the nature and ramifications of the problem, as it was investigated by means of the questionnaire, by presenting data relative to the development of the first major item. The questions to be answered under this division are the following:

1. Who completed the questionnaire?
2. What was the size of the pupil enrollment of the responding schools?
3. What was the administrative organizational plan of the responding schools?
4. How many years had the schools been in operation?

5. What was the status of industrial arts in those schools reporting no such program existing?
6. How many years had the present industrial arts programs existed in the responding schools?
7. What comparison if any, exists between the length in minutes of academic and shop classes?
8. To what degree are the industrial arts instructors utilized as "full-time" and "part-time" instructors in industrial arts?

The total number of schools to which questionnaires were sent was 362. Of this total, 248, or 68.8 per cent of the questionnaires were returned. Out of the 248 schools which responded, five were no longer designated as junior high schools. Out of the 243 junior high schools responding, 88.5 per cent, or 215 had industrial arts programs.

Final tabulation of the questionnaires was limited to the responding 215 junior high schools which had industrial arts programs. The total number and per cent of questionnaires tabulated from this survey provide a representative sampling from which an accurate depiction may be obtained to illustrate a typical industrial arts program in the junior high schools of the four state region. Not only was a sufficient number and percentage of responses to the questionnaire desirable but, an adequate sampling of the various size schools within this four-state region was attempted in order to develop as compendious a representation as possible of the existing industrial arts programs in the junior high schools in this region of the United States.

For convenience in treating the data, the 215 responding junior high schools having industrial arts programs were grouped into three categories according to the size of enrollment of pupils in the schools. Seventy-two schools having the smallest enrollments were classified as small junior high schools and therefore were placed in Category I. This category contained junior high schools with enrollments ranging from 78 to 325 pupils. The average enrollment size of these schools was approximately 196. Category II contained the next largest size enrollments ranging from 330 to 740 pupils. The average enrollment for this group was approximately 513 pupils per school. Category III contained the last 66 designated enrollments grouped because of their larger enrollments. Five schools were also placed in this category which did not have the enrollment designated. Further investigation revealed the pupil enrollment of these schools to be above 1,100. Therefore, these five schools were placed in group three, thus making a total of 71 schools in the last grouping. These schools ranged in enrollment size from 750 to 1,700 pupils. The average enrollment for these schools was 1,036 pupils.

The respondents were asked to indicate in the questionnaire the number of pupils enrolled in their school. This data made it possible to group these schools into the three

categories mentioned above and illustrated below:

Category	Number of Schools	Pupil Enrollments
I	72	78 - 325
II	72	330 - 740
III	71	750 - 1700

School Positions of the Respondents

The first item of the questionnaire was unnumbered and was designed to reveal the school position of the respondent. The questionnaire was mailed specifically to the administrators of the junior high schools. Of 248 schools responding, 208, or 83.8 per cent of the respondents were administrators. Thirty-three, or 13.3 per cent were industrial arts instructors, or supervisors. Seven, or 2.8 per cent did not indicate their title or position.

Enrollment Size and Administrative Organization of Schools

Items numbered one and two of the questionnaire were designed to furnish information concerning the size of enrollment and plan of organization of the schools. The tabulation in Table I illustrates the number of schools responding, the particular plan of organization, and the size of pupil enrollments classified into three categories as either small, medium, or large schools.

The typical educational plans of the junior high schools responding were the 6-3-3 and 6-2-4 plans. Seventy-five and nine tenths per cent of these schools were organized on the

6-3-3 plan, that is six grades in the graded schools with grades seven, eight and nine in the junior high school and the tenth, eleventh, and twelfth grades organized in the senior high school program. Fourteen per cent of the junior high schools had two grades, that is, the seventh and eighth grades in the junior high schools; thus being organized on

TABLE I

THE SCHOOLS DESIGNATED AS SMALL, MEDIUM, OR LARGE ACCORDING TO SIZE OF ENROLLMENT AND TYPE OF SCHOOL ORGANIZATION PLAN

Category I (Small)

(72 Schools - Enrollments 78 to 325)

Plan	Ark.	Kans.	Mo.	Okla.	Total	Per Cent
6-3-3	0	9	3	37	49	68.0
6-2-4	0	8	2	5	15	20.8
6-4-2	0	1	0	1	2	2.8
6-6	1	1	0	0	2	2.8
4-4-4	0	1	0	0	1	1.4
4-2-6	0	1	0	0	1	1.4
4-8	0	0	1	0	1	1.4
Other	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>1</u>	<u>1.4</u>
TOTAL	1	21	6	44	72	100.0

TABLE I (cont'd)

Category II (Medium)

(72 Schools - Enrollment 330 to 740)

Plan	Ark.	Kans.	Mo.	Okla.	Total	Per Cent
6-3-3	8	21	6	17	52	72.3
6-2-4	0	2	8	2	12	16.7
6-4-2	0	0	1	0	1	1.4
6-6	0	1	1	0	2	2.8
5-3-4	0	0	0	1	1	1.4
7-2-3	0	1	0	1	2	2.8
Undesignated	<u>2</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>2</u>	<u>2.8</u>
TOTAL	10	25	16	21	72	100.0

Category III (Large)

(71 Schools - Enrollments 750 and Over)

Plan	Ark.	Kans.	Mo.	Okla.	Total	Per Cent
6-3-3	8	21	18	15	62	87.3
6-2-4	0	0	5	0	5	7.1
6-4-2	0	0	2	0	2	2.8
6-4-4	<u>0</u>	<u>1</u>	<u>1</u>	<u>0</u>	<u>2</u>	<u>2.8</u>
TOTAL	8	22	26	15	71	100.0

the 6-2-4 plan. Very few of the junior high schools were organized on the 6-4-2 plan, that is, where four grades were included in the junior high schools and two grades in the senior high school program. Most of the responding junior high schools in the four-state regional survey were organized on the 6-3-3 plan.

The number of responding schools having the 6-2-4 plans appeared to decrease as the enrollment size of the school increases. Fifteen of these particular schools were those responding from the State of Missouri. Data from the Kansas schools revealed ten schools with this plan while Oklahoma indicated seven such school plans.

Approximate Age of the Responding Schools

Responses from item number three of the questionnaire provided data on the approximate age of the schools. Table II shows that approximately 45 per cent of these schools were organized over thirty years ago. Over 27 per cent of the schools had been organized within the past ten years. This might be indicative of the fact that within the past ten years there has been an apparent increase in the organization of more junior high schools across the nation. This might be attributed to several factors; two of which are (1) the increase in the school population and (2) that many school districts have reorganized their school systems.

TABLE II

APPROXIMATE NUMBER OF YEARS THE SCHOOLS HAVE BEEN ORGANIZED

Years Organized	Ark.		Kans.		Mo.		Okla.		Total	
	No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent
0 - 4	3	9.1	4	5.6	8	15.1	4	4.4	19	7.6
5 - 9	8	24.2	12	16.6	16	30.1	13	14.4	49	19.8
10 - 14	2	6.1	7	9.7	5	9.4	7	7.8	21	8.4
15 - 19	3	9.1	2	2.8	2	3.8	8	8.9	15	6.1
20 - 24	1	3.0	1	1.4	1	1.9	3	3.3	6	2.4
25 - 29	1	3.0	2	2.8	4	7.6	5	5.5	12	4.8
30 - 34	3	9.1	4	5.6	5	9.4	8	8.9	20	8.1
35 - 39	2	6.1	16	22.2	5	9.4	6	6.7	29	11.6
40 - Over	5	15.6	19	26.4	5	9.4	32	35.6	61	24.8
Unanswered	<u>5</u>	<u>15.6</u>	<u>5</u>	<u>6.9</u>	<u>2</u>	<u>3.8</u>	<u>4</u>	<u>4.4</u>	<u>16</u>	<u>6.4</u>
Total	33	100.0	72	100.0	53	100.0	90	100.0	248	100.0

The Schools with No Industrial Arts Programs

Items four and five of the questionnaire deal specifically with an affirmative or negative response and a reason for the specific answer to the question which asked the respondent to indicate if an industrial arts program existed

in his school at the present time. Out of the 243 responding schools, 28 indicated that no such program existed in their schools. Approximately one half, or 14 of the responding schools not having such programs in their schools indicated there had never been a program established.

TABLE III

RESPONSES OF TWENTY-EIGHT JUNIOR HIGH SCHOOLS HAVING NO
INDUSTRIAL ARTS PROGRAMS

Response	Ark.	Kans.	Mo.	Okla.	Total
"There has never been a program in our school"	8	1	2	2	13
"There was a program at one time but it was discontinued"	1	1	0	1	3
"At present there are plans being made to organize such a program in our school"	2	0	3	1	6
Unanswered	<u>2</u>	<u>1</u>	<u>0</u>	<u>3</u>	<u>6</u>
Total	13	3	5	7	28

Three schools indicated a discontinuance of the industrial arts programs due to either reorganizing and placing the program in the senior high school, or replacement of the program with that of a vocational course. One school indicated it had discontinued the program because of a lack of interest. Whether this lack of interest was on the part of the administration, student, or community was not indicated

by responses to the question. The above table illustrates the results of the tabulations made from items four and five of the questionnaire.

Number of Years the Industrial Arts
Program Had Been in Operation

Question six of the questionnaire was designed to furnish data showing the length of years in which the industrial arts programs in the schools responding had been in operation. Table IV indicates that a large percentage of schools have programs in operation organized within the past 14 years. Over 33 per cent of these programs had been organized for a period of 25 years or more. Approximately 14 per cent of the respondents did not indicate the age of their industrial arts programs.

Also indicated in Table IV is the approximate number of years in which industrial arts programs had been in operation in the individual states of Arkansas, Kansas, Missouri, and Oklahoma. The largest number of schools in Arkansas had such programs in operation in the past ten years. Approximately one half of the schools responding from the state of Kansas indicated industrial arts programs in operation for the past 30 years or more. One half of Missouri's responding schools indicated that such programs had been in operation from one to 14 years. Oklahoma schools indicated that approximately one half of their industrial arts programs had been in operation in the past 15 to 29 years.

TABLE IV

LENGTH OF YEARS IN WHICH INDUSTRIAL ARTS PROGRAMS
HAVE BEEN ESTABLISHED IN THE SCHOOLS

Years Organized	Ark.		Kans.		Mo.		Okla.		Total	
	No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent
0 - 4	4	21.0	4	5.8	3	6.3	1	1.2	12	5.6
5 - 9	6	31.5	7	10.3	14	29.2	11	13.8	38	17.7
10 - 14	2	10.5	6	8.3	7	14.5	8	10.0	23	10.7
15 - 19	1	5.3	4	5.9	0	- -	11	13.8	16	7.4
20 - 24	1	5.3	2	2.9	4	8.3	17	21.2	24	11.2
25 - 29	0	- -	4	5.9	3	6.3	11	13.8	18	8.4
30 - 34	1	5.3	6	8.8	6	12.5	6	7.5	19	8.8
35 - Over	1	5.3	26	38.2	3	6.3	5	6.2	35	16.3
Unanswered	<u>3</u>	<u>15.8</u>	<u>9</u>	<u>13.2</u>	<u>8</u>	<u>16.6</u>	<u>10</u>	<u>12.5</u>	<u>30</u>	<u>13.9</u>
Total	19	100.0	68	100.0	48	100.0	80	100.0	215	100.0

Table IV shows the number and percentage of industrial arts programs in the responding junior high schools which have been organized for a particular period of time. Twenty-nine to 31 per cent of the schools in Arkansas and Missouri have organized industrial arts programs within the past five to nine years. A percentage of 38.2 per cent of the industrial

arts programs in the responding schools of Kansas have been established over 35 years. Oklahomas' responding junior high schools indicate that 21.2 per cent of their industrial arts programs were organized from 20 to 24 years ago. Noticeable also in Table IV is the 21 per cent of industrial arts programs which have been organized in Arkansas within the past four years.

A comparison of the ages of the junior high schools and the ages of the industrial arts programs in these schools appears in two graphs, Figures 1 and 2. These two graphs were developed from the numbers and percentages used in Tables II and IV.

Figure 1 graphically illustrates two major periods of time in which a large percentage of the junior high schools were organized. This is indicated by two large peaks which arrange themselves in time blocks of five to nine years and a time period of over 40 years. The low points of this particular graph indicated that a small number of junior high schools were organized from 20 to 24 years ago.

By comparing the peaks and low points in the graph in Figure 1 with those in Figure 2 it was noted that a close relationship existed between these two major high points. Figure 2 indicates that a large per cent of industrial arts programs were organized during the period of five to nine years ago and over 35 years ago. This implies that industrial arts

Per cent

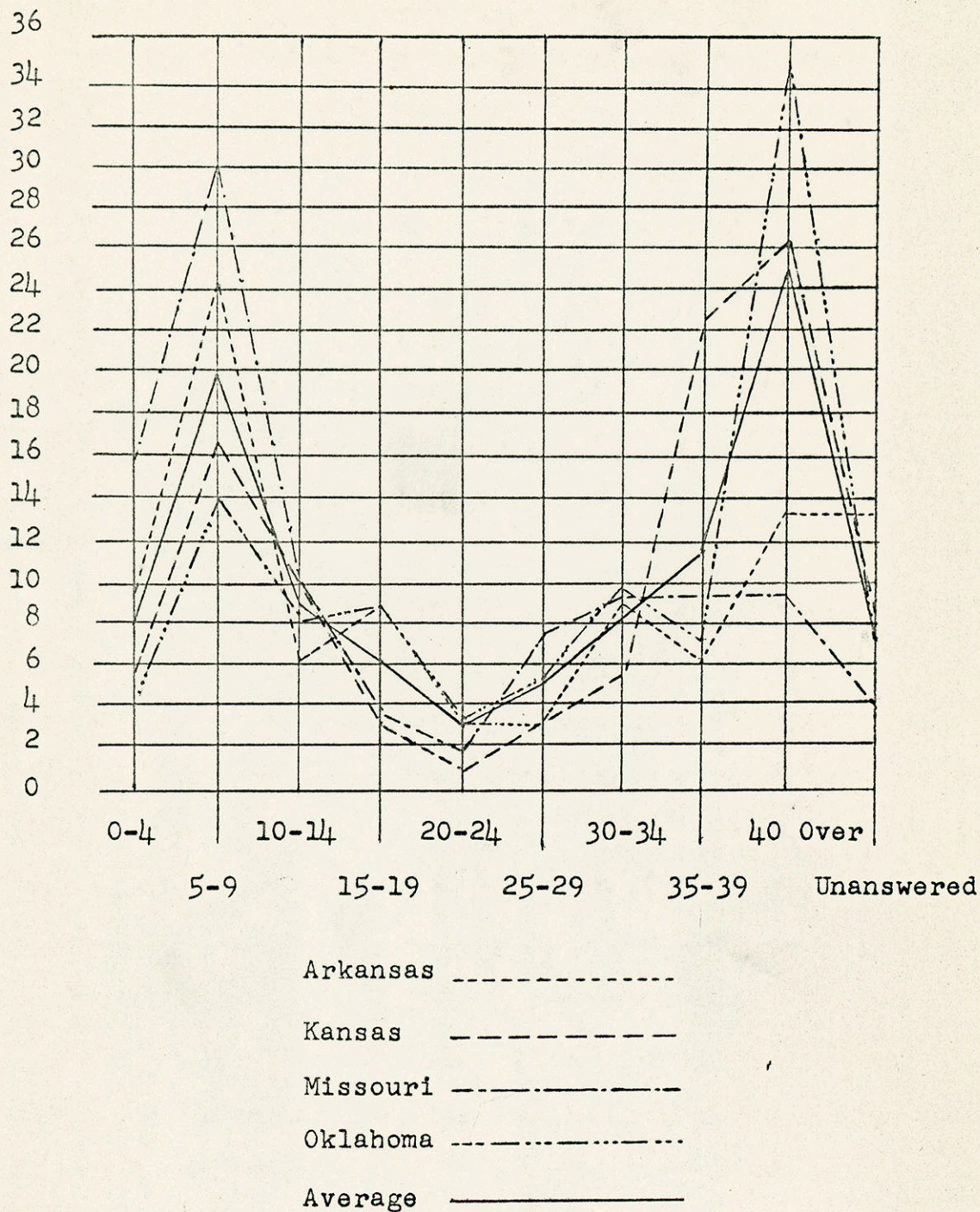


FIGURE 1

AGE OF THE SCHOOL PROGRAMS SURVEYED ILLUSTRATING
 THE PERCENTAGE OF EACH IN THE FOUR STATES

Per cent

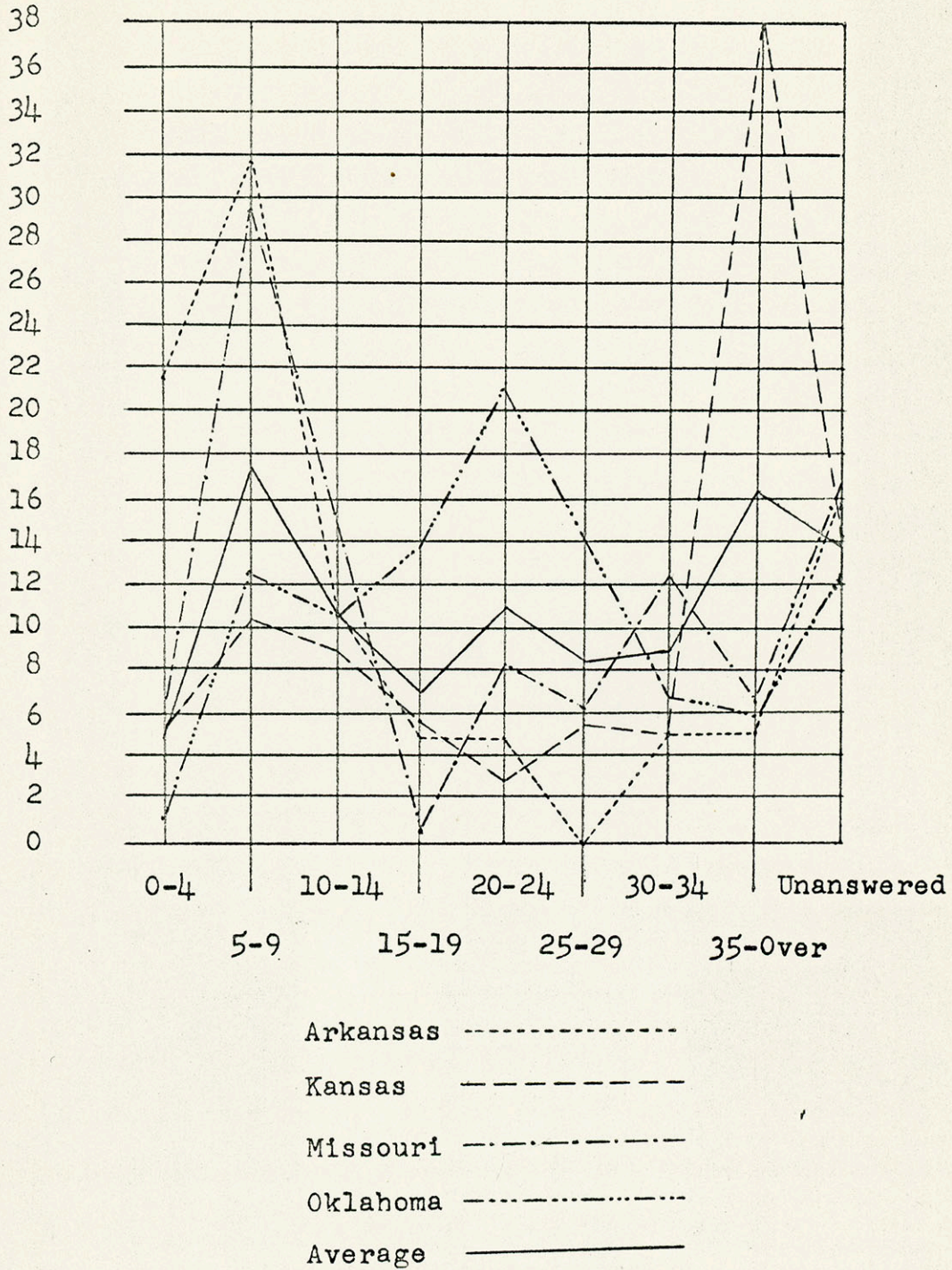


FIGURE 2

AGE OF INDUSTRIAL ARTS PROGRAMS SURVEYED ILLUSTRATING
THE PERCENTAGE OF EACH IN THE FOUR STATES

programs in these schools were organized at the time the junior high schools were established. A third high point appearing in Figure 2 indicates a number of industrial arts programs in the responding schools of Oklahoma were organized after the junior high schools were established. This peak arranges itself with the 20 to 24 year period.

It will be noted that an apparent general parallelism exists between the ages of the industrial arts programs and the ages of the schools for the four-states organized within the past 15 to 19 years, with the exception of Oklahoma. Industrial arts programs organized within a period of 20 to 24 years in Oklahoma increased in number in relation to the junior high schools organized during this same period. The parallelism which exists, noticeably within the past 14 years indicates that junior high schools included industrial arts at the time the programs were organized.

Length of Academic and Industrial Arts Class Periods

The reason for presenting items seven and eight in the questionnaire was to discern what difference, if any, exists between the length in minutes of academic and industrial arts class periods. The findings, as indicated in Table V, would substantiate to a reasonable degree that most academic and industrial arts class periods are of the same relative length in minutes. Although the foregoing may be apparently true

TABLE V

AVERAGE LENGTH IN MINUTES OF ACADEMIC AND INDUSTRIAL ARTS
CLASSES IN 215 JUNIOR HIGH SCHOOLS

	Arkansas		Kansas		Missouri		Oklahoma	
Length of Classes in Minutes	Academic	Shop	Academic	Shop	Academic	Shop	Academic	Shop
40 - 44								
45 - 49	0	0	3	2	2	2	0	0
50 - 54	1	1	9	8	11	11	1	1
55 - 59	15	15	41	42	30	30	46	46
60 - 64	1	1	10	10	3	2	14	13
65 - 69	0	0	0	0	0	0	2	2
70 - 74	0	0	0	0	0	0	13	13
75 - 79	0	0	0	0	0	0	1	1
90	0	0	0	1	0	0	0	0
115	0	0	0	0	0	1	0	0
120	0	0	0	0	0	0	0	1
Undesig- nated	<u>2</u>	<u>2</u>	<u>5</u>	<u>5</u>	<u>2</u>	<u>2</u>	<u>3</u>	<u>3</u>
Total	19	19	68	68	48	48	80	80

there was a difference in the length of the class periods in some of the schools of the four states. Table V illustrates this variation between the states surveyed. The length of most class periods fell within the range of 55 to 59 minutes in length. A few schools in Kansas and Missouri indicated an academic and industrial arts class length of 50 to 59 minutes in length. Kansas and Oklahoma indicated some academic and industrial arts class periods of 60 to 64 minutes in length. Thirteen schools in the state of Oklahoma surveyed had class periods ranging from 70 to 74 minutes in length.

Utilization of the Industrial Arts Instructors

Question nine, ten, and eleven of the questionnaire were designed to obtain data on the number of "full-time" and "part-time" industrial arts instructors. Also it was desirable to determine the number of junior high school industrial arts instructors teaching some industrial arts courses in a senior high school.

The data in Table VI illustrates to a certain degree that the number of two and three "full-time" industrial arts teacher combinations increase as the size of the enrollments enlarges from Category I to Category III. The table also shows a decrease in the number of "full-time" industrial arts instructors, but an increase in the number of "part-time" industrial arts instructors in the smaller schools. It would

TABLE VI

NUMBER OF FULL AND PART TIME INDUSTRIAL ARTS INSTRUCTORS
IN THE SCHOOLS CLASSIFIED BY CATEGORY

Industrial Arts Instructors Teaching Only Industrial Arts Subjects						
Number of Instructors per School						
Category	Responding Schools	1	2	3	4	5
I	72	47	8	1	0	0
II	72	48	23	8	2	0
III	<u>71</u>	<u>15</u>	<u>25</u>	<u>10</u>	<u>12</u>	<u>1</u>
Total	215	110	56	19	14	1

Industrial Arts Instructors Teaching Industrial Arts and Other Subjects					
Number of Instructors per School					
Category	Responding Schools	1	2	3	4
I	72	34	4	0	1
II	72	15	11	0	0
III	<u>71</u>	<u>15</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	215	64	30	0	1

TABLE VI (cont'd)

Industrial Arts Instructors Teaching Regularly in a Junior High School Who Also Teach Industrial Arts in a Senior High School Program					
Number of Instructors per School					
Category	Responding Schools	1	2	3	4
I	72	46	8	0	0
II	72	33	5	2	0
III	<u>71</u>	<u>7</u>	<u>1</u>	<u>1</u>	<u>1</u>
Total	215	86	14	3	1

appear that as the school enrollment becomes smaller more industrial arts instructors are being utilized to teach industrial arts in a senior high school program and also to teach other subjects in the junior high school programs. The small number of instructors teaching only industrial arts "full-time" in the large schools, Category III, could indicate an inadequacy in some of the industrial arts programs.

Summary

In the findings presented in this chapter certain factors were evident. The majority of the respondents were administrators. The favored educational plan of school organization throughout the four states was the 6-3-3 plan. Approximately 50 per cent of the responding 215 schools had been organized over a period of 30 years. Generally speaking, the age of the various industrial arts programs and the age of the junior high schools paralleled one another. There were an increasing number of schools and industrial arts programs which had been organized within the past 10 to 15 years.

The length of academic and industrial arts class periods in minutes showed little variation. Variation in the length of the periods from school to school was noticeable. The majority of "full-time" industrial arts instructors were employed in the medium and large schools classified by enrollment size. The smaller schools utilize many of their industrial arts instructors for teaching other subjects.

CHAPTER III

CONTENT, NATURE AND ORGANIZATION OF THE INDUSTRIAL ARTS PROGRAMS SURVEYED

Introduction

The objectives of this chapter are to examine the curricula, the nature of the courses, and the types of organization of the industrial arts programs in order to point out some of the more significant details with respect to both diversification and similarities among the industrial arts programs in the junior high schools surveyed.

Length of Courses in Weeks

The length of industrial arts courses offered in grades seven, eight, and nine in the schools surveyed were based largely on periods of eighteen or thirty-six weeks. Table VII shows the number and percentage of schools in each category having courses ranging in three groupings; viz, courses ranging from six to 12 weeks, 18 to 20 weeks, and 27 to 40 weeks in length. This table reveals that 50 per cent, or 337 courses out of the 669 courses offered in the 215 schools surveyed, were 27 to 40 weeks in length. It will also be noted that approximately 29 per cent of the total number of courses were found to range in length from 18 to 20 weeks.

TABLE VII

NUMBER, PERCENTAGE, AND LENGTH OF INDUSTRIAL ARTS COURSES IN WEEK IN 215 JUNIOR HIGH SCHOOL PROGRAMS CLASSIFIED BY CATEGORY								
Course Length	Category I		Category II		Category III		Totals	
	No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent
6 - 12	1	.1	6	.8	41	6.1	48	7.2
18 - 20	27	4.1	55	8.2	109	16.3	191	28.6
27 - 40	91	13.6	99	14.8	147	22.0	337	50.3
Not Designated	<u>24</u>	<u>3.6</u>	<u>42</u>	<u>6.3</u>	<u>27</u>	<u>4.1</u>	<u>93</u>	<u>13.9</u>
Total	143	21.4	202	30.1	324	48.5	669	100.0

Those schools having the largest number and percentage of courses ranging in length from 27 to 40 weeks appear in the large schools, Category III. It will be noted that almost 50 per cent of the total number of courses in the 215 schools surveyed were offered in these larger schools.

In order to determine in what grades the major portion of the various groups of courses, in terms of length in weeks occurred, Table VIII was constructed. It illustrates the number and percentage of courses grouped in the same manner as those courses in Table VII, with the exception that the

percentage and number of courses offered in each grade according to their length in weeks is presented. It will be noted that 43.2 per cent of the courses were those offered in grade nine.

TABLE VIII

NUMBER, PERCENTAGE, AND LENGTH OF INDUSTRIAL ARTS COURSES
IN WEEKS IN 215 JUNIOR HIGH SCHOOL PROGRAMS
CLASSIFIED BY GRADES

Course Length	Grade 7		Grade 8		Grade 9		Total	
	No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent
6 - 12	29	4.4	13	1.9	6	.9	48	7.2
18 - 20	55	8.2	93	13.9	43	6.5	191	28.6
27 - 40	45	6.7	103	15.3	189	28.3	337	50.3
Not Des- ignated	<u>12</u>	<u>1.7</u>	<u>30</u>	<u>4.5</u>	<u>51</u>	<u>7.7</u>	<u>93</u>	<u>13.9</u>
Total	141	21.0	239	35.7	289	43.2	669	100.0

The largest percentage of six to 12 weeks courses appears in grade seven. Grade eight shows a narrow percentage of difference in courses of 18 to 20 weeks in length and those courses of 27 to 40 weeks in length. This percentage was between 13.9 and 15.3. Approximately one-third of the total number of courses (28.3 per cent) were those in the 27 to 40 weeks group and occur in grade nine.

Titles of Courses Offered

An apparent variety of course titles in industrial arts appeared in the data obtained from 215 junior high schools. Table IX gives the titles of the 669 courses in the three groups of schools classified in enrollment categories.

The small schools, Category I, listed most frequently the course titles of shop, general shop, industrial arts, and woodwork. The number of titles of courses increase as the size of the enrollment enlarged. Category II, medium size enrollments, listed most frequently the course titles of general shop, woodwork, and industrial arts in that order. General shop and woodworking were the two most frequently listed titles offered in large schools, Category III.

The various course titles of industrial arts subjects revealed through the data obtained from the responding 215 junior high schools made identification of a particular course sometimes difficult. As noted in Table IX, the titles of these courses ranged from such titles as "industrial arts," "shop," "industrial exploration," "prevocational," to titles of individual courses apparently covering one area of industry such as those titles: "wood," "plastics," "metals," etc. It was almost impossible to distinguish what some of the courses in industrial arts involved by observing only the titles. But having the individual who completed the questionnaire check

TABLE IX

NUMBER AND TITLES OF INDUSTRIAL ARTS COURSES OFFERED IN THE
SCHOOLS CLASSIFIED BY CATEGORY

Category I		Category II	
Title of Course	No.	Title of Course	No.
Woodwork	21	Woodwork	38
Woodshop	3	Woodshop	3
Machine Woodwork	1	Machine Woodwork	1
Hand Woodwork	1	Hand Woodwork	1
Industrial Arts	24	General Woodwork	3
Shop	29	Woods	2
General Shop	25	Industrial Arts	29
Limited Gen. Shop	1	Industrial Educ. Shop	8
Arts and Crafts	6	Composite Gen. Shop	1
Crafts	9	General Shop	45
Leather Craft	4	Composite Shop	1
Mech. Drawing	11	Prevocational	1
Drafting	1	Arts and Crafts	5
Metal Work	2	Crafts	8
Metals	1	Jewelry	1
Farm Mechanics	1	Mech. Drawing	11
Farm Shop	1	Drafting	12
Not Designated	2	Drawing	6
Total	143	Metalwork	3
		Metals	6
		Metal Shop	3
		General Metal	3
		Welding	1
		Power Mechanics	1
		Auto Mechanics	1
		Printing	1
		Electricity	1
		Electronics	1
		Total	202

TABLE IX (cont'd)

NUMBER AND TITLES OF INDUSTRIAL ARTS COURSES OFFERED IN THE
SCHOOLS CLASSIFIED BY CATEGORY

Category III

Title of Course	No.	Title of Course	No.
Woodwork	9	Industrial Crafts	2
Woodshop	1	Bookcraft	2
Woodworking	46	Ceramics	2
Wood	6	Plastics	1
General Woodwork	1	Exploratory	1
Cabinet Making	1	Prevocational	5
Prevocational		Mechanical Drawing	17
Woodworking	1	Drawing	7
Industrial Arts	14	Drafting	21
Industrial Ex-		Prevoc. Drafting	1
ploration	1	Metalwork	15
Industrial Motion	1	Metals	19
Shop	19	Sheetmetal	8
General Shop	58	General Metals	1
Comp. Gen. Shop	2	Prevoc. Metals	1
Basic Tools of		Metalcraft	1
Industry	1	Printing	13
Arts and Crafts	3	Graphic Arts	3
Crafts	16	Electricity	15
Leatherwork	5	Electronics	1
Leathercraft	2	Prevoc. Elect.	1
Sub		Sub	
Total	<u>187</u>	Total	<u>137</u>
	Sub Total <u>187</u>		
	Sub Total <u>137</u>		
	Total <u>324</u>		

the area of industry which was being covered in the particular course, the task of identifying the possible course content was made somewhat easier.

In Category I, 18 separate course titles were listed. The largest number of courses offered in this category were designated as either "shop," "industrial arts," or "general shop." The area of the woodworking industry carried such titles as "woodwork," "woodshop," "machine woodwork," and "hand woodwork." The area of drawing involved such titles as "mechanical drawing," and "drafting." Crafts were listed under such titles as "arts and crafts," "crafts," and "leathercraft." The metal industries were covered apparently, in such courses as "metal work," and "metal." Farm mechanics" was listed under two titles, "farm shop," and "farm mechanics."

Out of the 202 separate courses that were listed in the medium size schools in Category II, there were a total of 27 titles of industrial arts courses obtained from the data. The largest number of titles bearing somewhat the same general title or inferring a similar type shop class were the 87 "general" courses listed under such titles as "industrial arts," "industrial education," "shop," "composite shop," "general Shop," and "prevocational." There were five different titles of industrial arts courses

listed under what might be termed as an industrial arts course covering the area of metal work. The titles were: "metalwork," "metals," "metalshop," "general metal," and "welding." There were six different titles given to the area of industry known as the woods industry. "Woodwork" was the most common title which appeared in the data. The area of drawing had three titles. These were "mechanical drawing," "drafting," and "drawing."

The large variety of course titles in the three groups of schools classified by enrollment size, indicated a variety of a number of courses in various areas of industry, although, in many instances it would have been difficult to positively identify the areas covered in these courses, had the respondent not been asked to identify the particular areas of industrial exploratory experiences involved in the course.

Interesting to note are three titles which appear as being offered in the large schools. These particular titles do not appear in any of the other two categories of schools classified by enrollment size. Some of the titles appearing in Category III which were not revealed in the other two groups of schools were "industrial exploration," "industrial motion," "exploratory and basic tools of industry." There were seven titles for the

area of wood; six titles for the area of metals; three for crafts; nine for those courses which might be termed as general in nature. One title in the crafts field which apparently did not occur in the other two categories, was that of "industrial crafts." Table IX shows the various course titles.

The area of industry in which the above industrial arts course titles might be placed is shown in Table X. Discernment may be readily made of the variety of course titles which were arranged under a particular area of industry. The arrangement was made after checking the various items of data concerned with each course title and the areas of industry checked by the respondents which indicated the particular area that the course covered.

Those course titles which were grouped under the area of "general," were those which covered two or more areas of industry. The largest number of industrial arts course titles were those which were grouped under the heading of "general."

The course titles which inferred a craft and art relationship were grouped together under the heading of "arts and crafts." Other course titles were grouped under other areas of industry and are noted in Table X.

Areas of Industry Emphasized in the Courses

An industrial arts program in any junior high school might offer one course, specializing in one particular area

TABLE X

NUMBER AND TITLES OF INDUSTRIAL ARTS COURSES OFFERED IN
THE SCHOOLS CLASSIFIED BY MAJOR AREAS OF INDUSTRY

Area	Title of Course	Number of Courses Offered
<u>Woods</u>	Woodwork.....	68
	Woodworking.....	46
	Woodshop.....	7
	Wood.....	6
	General Woodwork.....	4
	Machine Woodwork.....	2
	Woods.....	2
	Cabinet Making.....	1
	Prevocational Woodwork.....	1
	Hand Woodwork.....	2
	Total	139
<u>General</u>	Industrial Arts.....	67
	Industrial Exploration.....	1
	Industrial Motion.....	1
	Industrial Education.....	2
	Basic Tools of Industry.....	1
	Shop.....	56
	General Shop.....	128
	Comprehensive General Shop.....	2
	Limited General Shop.....	1
	Composite Shop.....	1
	Composite General Shop.....	1
	Exploratory.....	1
	Prevocational.....	6
	Total	268
<u>Drawing and Planning</u>	Mechanical Drawing.....	39
	Drafting.....	34
	Drawing.....	13
	Prevocational Drafting.....	1
	Total	87

TABLE X (cont'd)

Area	Title of Course	Number of Courses Offered
<u>Electricity and Electronics</u>	Electricity.....	19
	Prevocational Electricity.....	1
	Electronics.....	2
	Total	22
<u>Printing</u>	Printing.....	14
	Graphic Arts.....	3
	Total	17
<u>Arts and Crafts</u>	Arts and Crafts.....	14
	Crafts.....	33
	Jewelry.....	1
	Industrial Crafts.....	2
	Book Craft.....	2
	Ceramics.....	2
	Plastics.....	1
	Leathercraft.....	6
	Leatherwork.....	5
	Total	66
<u>Farm Mechanics</u>	Farm Mechanics.....	1
	Farm Shop.....	1
	Total	2
<u>Power Mechanics</u>	Power Mechanics.....	1
	Auto Mechanics.....	1
	Total	2
<u>Metal</u>	Metalwork.....	20
	Metals.....	26
	Metalshop.....	3
	General Metal.....	4
	Prevocational Metal.....	1
	Sheetmetal.....	8
	Metalcraft.....	1
	Welding.....	1
	Total	64
<u>Not Designated</u>	2
	Total Areas.....	9
	Total Courses Offered.....	669
	Total Number of Titles.....	53

of industry, or it might offer many. It could offer a general shop course covering two or more areas of industrial experiences. Not all schools offer the same courses nor do all junior high schools offer the same type of industrial exploratory experiences in courses with the same titles.

Table XI shows the differences in the industrial areas emphasized in the industrial arts courses of the 215 junior high schools surveyed. The industrial area of wood ranks first in all of the four states with which this study was concerned. This was the area which was most frequently checked by the respondent as being covered in the courses listed. The area of drawing holds second place rank according to data obtained through the questionnaire. The variation of areas emphasized begins with the third rank. All states but one have metals ranked in third place, while Oklahoma held crafts as third. Other comparisons are shown on Table XI.

TABLE XI

FREQUENCY BY RANK OF THE AREAS OF INDUSTRY COMMON TO THE INDUSTRIAL ARTS COURSES OFFERED IN THE SCHOOLS SURVEYED								
Rank	Ark.	No.	Kans.	No.	Mo.	No.	Okla.	No.
1.	Wood	32	Wood	156	Wood	97	Wood	119
2.	Drawing	29	Drawing	122	Drawing	92	Drawing	78
3.	Metal	27	Metal	90	Metal	90	Crafts	49

TABLE XI (cont'd)

Rank	Ark.	No.	Kans.	No.	Mo.	No.	Okla.	No.
4.	Elec- tricity	19	Elec- tricity	57	Crafts	55	Metal	39
5.	Crafts	14	Plastics	35	Plastics	50	Elec- tricity	23
6.	Home Mech.	9	Home Mech.	27	Elec- tricity	50	Pla- stics	15
7.	Other	9	Crafts	27	Home Mech.	25	Home Mech.	14
8.	Plastics	8	Print- ing	15	Elec- tronics	18	Other	13
9.	Print- ing	5	Other	12	Print- ing	17	Power Mech.	12
10.	Power Mech.	4	Elec- tronics	8	Power Mech.	14	Print- ing	9
11.	Elec- tronics	3	Power Mech.	7	Other	14	Farm Mech.	7
12.	Farm Mech.	1	Farm Mech.	22	Farm Mech.	4	Elec- tronics	3

Number and Type of Industrial Arts Shop

Organizational Plans

Industrial arts courses are taught in classes classified according to the content and manner in which they are presented. The major types of industrial arts organizational plans

are the unit, limited general, comprehensive general shop, and the laboratory of arts and industries. These organizational plans were identified and defined in chapter one.

A junior high school industrial arts program may utilize one or more of the above industrial arts organizational plans to accomplish its goals. The types and number of industrial arts organizational plans used in the responding 215 junior high school industrial arts programs with which this study was concerned, and the grades in which these plans were used is illustrated in Tables XII and XIII. Table XII concerns itself primarily with the number and types of industrial arts courses organized in each of the three grades in the schools grouped according to states.

Table XII reveals that a majority of comprehensive general shop courses were organized in those schools responding from the states of Arkansas and Missouri. A larger portion of unit organized courses exist in those schools responding from Kansas and Oklahoma. The major portion of the number of the comprehensive general course plans were offered in grades eight and nine in Arkansas and Missouri. The unit industrial arts course plan occurred more frequently in grade nine in Oklahoma, while it occurred in grades eight and nine in Kansas. The average number of industrial arts courses per school for the responding junior high schools of Arkansas was 2.1. An average of 3.1 courses per school were indicated for the 68

TABLE XII

NUMBER AND TYPES OF INDUSTRIAL ARTS COURSES ORGANIZED IN GRADES
SEVEN, EIGHT, AND NINE IN THE SCHOOLS SURVEYED IN ARKANSAS,
KANSAS, MISSOURI, AND OKLAHOMA

Arkansas (19 Schools)				
Types of Courses Organized	Grade Seven	Grade Eight	Grade Nine	Total Courses
Unit	2	1	0	3
Comprehensive General	1	10	14	25
Limited General	2	4	4	10
Laboratory of Arts and Industries	0	0	0	0
Total	5	15	18	38
Average Number of Courses per School	2			

Kansas (68 Schools)				
Types of Courses Organized	Grade Seven	Grade Eight	Grade Nine	Total Courses
Unit	25	52	56	133
Comprehensive General	13	18	21	52
Limited General	26	23	31	80
Laboratory of Arts and Industries	3	4	2	9
Total	67	97	110	274
Average Number of Courses per School	3.1			

TABLE XII (cont'd)

Missouri (48 Schools)				
Types of Courses Organization	Grade Seven	Grade Eight	Grade Nine	Total Courses
Unit	12	12	17	41
Comprehensive General	15	33	29	77
Limited General	12	17	10	39
Laboratory of Arts and Industries	0	1	0	1
Total	39	63	56	156
Average Number of Courses per School	3.2			

Oklahoma (80 Schools)				
Types of Courses Organization	Grade Seven	Grade Eight	Grade Nine	Total Courses
Unit	17	24	52	93
Comprehensive General	3	17	20	40
Limited General	9	20	30	59
Laboratory of Arts and Industries	1	2	2	5
Undesignated	0	0	0	2
Total	30	64	105	199
Average Number of Courses per School	2.5			

responding Kansas schools. The responding Missouri industrial arts programs averaged 3.2 courses per school, while Oklahoma's

schools average 2.5 courses per school.

Table XIII was organized to present similar information to that of Table XII but, was arranged according to data presented from the schools classified as to their size of pupil enrollment. The small schools in Category I utilized the first three plans of course organization nearly evenly. The larger number of courses in Category II were limited general courses, with the comprehensive general courses following closely in frequency of occurrence. Category III definitely shows a trend towards the use of the unit type course plan. The average number of courses per school when averaged together and classified into the three categories indicated that the smaller schools averaged 1.9 courses per school, the medium size schools averaged 2.8 courses per school, and the larger schools had 4.6 courses per school as an average.

The grades in which these course plans were found in the three categories can also be discerned from Table XIII. The largest number of unit courses occurs in Category III, the larger schools. These schools having the larger enrollments have almost one-half of the total number of courses offered in the 215 schools which responded.

Grades in Which Industrial Arts Courses
Were Offered

Industrial arts courses may be offered in one, two, or

TABLE XIII

NUMBER AND TYPES OF INDUSTRIAL ARTS COURSES ORGANIZED IN
GRADES SEVEN, EIGHT, AND NINE IN THE SCHOOLS
SURVEYED CLASSIFIED BY CATEGORY

Types of Courses Organized	Category I (72 Programs)			Total Courses
	Grade Seven	Grade Eight	Grade Nine	
Unit	7	14	28	49
Comprehensive General	5	17	23	45
Limited General	9	17	13	39
Laboratory of Arts and Industries	3	3	2	8
Total	24	52	67	143
Average Number of Courses per School				1.9
Types of Courses Organized	Category II (72 Programs)			Total Courses
	Grade Seven	Grade Eight	Grade Nine	
Unit	9	17	32	58
Comprehensive General	12	30	27	69
Limited General	18	26	30	74
Laboratory of Arts and Industries	0	1	0	1
Total	39	74	89	202
Average Number of Courses per School				2.8
Types of Courses Organized	Category III (71 Programs)			Total Courses
	Grade Seven	Grade Eight	Grade Nine	
Unit	40	58	65	163
Comprehensive General	15	31	34	80
Limited General	22	21	32	75
Laboratory of Arts and Industries	1	3	2	6
Total	78	113	133	324
Average Number of Courses per School				4.6

three grades in a junior high school. The student may be permitted to enroll for one, two, or all three years in such courses. The grades in which industrial arts courses are offered to students in the junior high schools of the four state area surveyed should be of some significance to those interested in this study.

Table XIV will illustrate to some degree the percentage of the total number of schools surveyed in the four state area offering industrial arts courses in any one of grades seven, eight, or nine. In these schools, 51 per cent offered industrial arts courses in grade seven, 80 per cent in grade eight, while 82.5 per cent offered such courses in grade nine. It would appear that as the enrollment size increased the percentage of schools offering courses in all three grades increased.

TABLE XIV

NUMBER AND PER CENT OF SCHOOLS CLASSIFIED BY CATEGORY OFFERING INDUSTRIAL ARTS COURSES IN GRADES SEVEN, EIGHT AND NINE						
	Grade Seven		Grade Eight		Grade Nine	
	No.	Per Cent	No.	Per Cent	No.	Per Cent
Category I	22	30.4	47	65.3	54	75.0
Category II	33	45.8	61	84.6	58	80.5
Category III	46	64.6	64	90.2	63	88.6
Total	101	51.3	172	80.0	175	82.5

In comparing the percentages of schools of the individual states certain trends were apparent. These are illustrated in Table XV.

TABLE XV

NUMBER OF SCHOOLS OFFERING INDUSTRIAL ARTS COURSES IN GRADES SEVEN, EIGHT, AND NINE IN THE FOUR STATES OF ARKANSAS, KANSAS, MISSOURI, AND OKLAHOMA							
	Total Schools	Grade Seven		Grade Eight		Grade Nine	
		No.	Per Cent	No.	Per Cent	No.	Per Cent
Arkansas	19	5	26.3	14	73.6	17	89.5
Kansas	68	52	75.0	65	95.5	55	80.9
Missouri	48	25	52.2	45	93.6	33	68.6
Oklahoma	<u>80</u>	<u>19</u>	<u>23.7</u>	<u>48</u>	<u>60.0</u>	<u>70</u>	<u>87.5</u>
Total	215	101	51.3	172	80.0	175	82.5

It will be noted in Table XV that Arkansas and Oklahoma offer few industrial arts courses in grade seven. It would appear that 52 per cent of the responding schools in Missouri offer seventh graders industrial arts courses while 75 per cent of the schools responding from Kansas offer these courses in grade seven. From the data obtained for this study it is apparent that Kansas would rank first in its course

offerings in industrial arts to eighth graders, if compared to the other three states with which this study was concerned. Missouri follows second in this respect, in that 93.6 per cent of these schools offer such courses in grade eight. 73.6 per cent of the 19 schools responding from Arkansas offer industrial arts courses in grade eight, while 60 per cent of the 80 schools in Oklahoma offered such courses in grade eight. With the exception of Missouri, 80 to 90 per cent of the other three states offered industrial arts courses in grade nine. The Missouri schools indicated that approximately 68.6 per cent offered such courses in grade nine.

To graphically illustrate the specific combinations of grades in which industrial arts is offered in the 215 schools surveyed, Table XVI was constructed.

TABLE XVI

COMBINATIONS OF GRADES IN WHICH INDUSTRIAL ARTS COURSES WERE OFFERED ILLUSTRATING THE NUMBER AND PER CENT OF SCHOOLS CLASSIFIED BY CATEGORY							
Grade Combinations	Category I		Category II		Category III		Total
	No.	Per Cent	No.	Per Cent	No.	Per Cent	No. Per Cent
7,8,9	16	22.3	29	40.4	39	54.9	84 39.1
8 and 9 Only	13	18.2	20	27.8	17	23.8	50 23.2
9 Only	25	34.8	9	12.6	6	8.4	40 18.6

TABLE XVI (cont'd)

Grade Combination	Category I		Category II		Category III		Total	
	No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent
7 and 8 Only	6	8.3	0	- -	5	7.5	11	5.1
8 Only	12	16.4	12	16.4	2	2.7	26	12.1
7 and 9 Only	0	- -	0	- -	2	2.7	2	.9
7 Only	<u>0</u>	<u>- -</u>	<u>2</u>	<u>2.8</u>	<u>0</u>	<u>- -</u>	<u>2</u>	<u>.9</u>
Total	72	100.0	72	100.0	71	100.0	215	100.0

This table illustrates that in the small schools, Category I, industrial arts was offered in grades seven, eight, and nine in 22.3 per cent of the 72 schools in that category. Almost 35 per cent of these schools offered such courses in grade nine only, while approximately 18 per cent had courses offered only in grades eight and nine.

Forty per cent of the medium size schools, Category II, offered industrial arts in grades seven, eight, and nine. Approximately 28 per cent, or 20 out of the 72 schools, offered such courses in grades eight and nine. Twelve schools or 16.4 per cent, offered courses in grade eight only.

In the large schools classified in Category III, the

frequency of industrial arts course offerings in all three grades increased in number. Thirty-nine, or approximately 55 per cent of the schools offered such courses in all three grades. Almost 24 per cent of the schools offered industrial arts courses in grades eight and nine only; 12 per cent offered courses in grade nine only, while 12 per cent offered such courses in only grade eight.

Courses Required or Elective for Boys and Girls

Boys may be permitted to enroll in industrial arts courses for periods ranging from one semester to three school years. These courses may be elective or required. Girls may also have the opportunity to enroll in such courses in some junior high schools, these particular courses being either required or elective, depending on the industrial arts program in the school. Tables XVII and XVIII illustrate to some degree the number of required and elective courses made available to boys and girls in the 215 schools.

Table XVII indicated that in the small school category, courses in industrial arts offered to boys were generally required in grade seven, although there were apparently 23 courses offered altogether, seven of which were indicated as being elective. The number of required courses in grade eight in this category were two times the number of elective courses. Grade nine in this category indicated four times as many elective courses as there were required for boys.

In Category II, the medium size schools, an even number of industrial arts courses were offered as either elective or required for boys in grade seven. Almost twice as many courses were offered in grade eight as were offered in grade seven. This total number of courses offered was almost evenly divided between elective and required courses. With the exception of two courses, apparently all of the courses in the ninth grade in this particular category were elective for boys.

In the large schools classified in Category III, the number of industrial arts courses offered to boys in grade seven as elective or required were approximately the same. Grade eight had more courses designated as elective than required. The largest number of elective courses for boys were the 212 courses offered in grade nine. This number was well over one-third of the total number of courses offered in this particular category or in the large schools.

Table XVIII illustrates to some degree the apparent opportunities which girls have in industrial arts courses.

Out of the 215 school industrial arts programs surveyed which offered 669 courses, 76 were those in which girls were permitted to enroll. Out of the 76 courses offered to these girls, 65 were elective and 11 were required. Note in Table XVIII, half of these courses were offered to girls in grade nine, that is, approximately 52.6 per cent. The

TABLE XVII

NUMBER OF COURSES IN INDUSTRIAL ARTS OFFERED TO BOYS IN
GRADES SEVEN, EIGHT, AND NINE OF THE SCHOOLS
CLASSIFIED BY CATEGORY

Category I				
	Grade Seven	Grade Eight	Grade Nine	Total Courses
Required	16	33	12	61
Elective	<u>7</u>	<u>15</u>	<u>52</u>	<u>74</u>
Total	23	48	64	135

Category II				
	Grade Seven	Grade Eight	Grade Nine	Total Courses
Required	19	39	2	60
Elective	<u>19</u>	<u>36</u>	<u>81</u>	<u>136</u>
Total	38	75	83	196

Category III				
	Grade Seven	Grade Eight	Grade Nine	Total Courses
Required	34	42	7	83
Elective	<u>39</u>	<u>63</u>	<u>110</u>	<u>212</u>
Total	73	105	117	295

TABLE XVIII

NUMBER OF COURSES IN INDUSTRIAL ARTS OFFERED TO GIRLS IN
GRADES SEVEN, EIGHT, AND NINE OF THE SCHOOLS
CLASSIFIED BY CATEGORY

Category I				
	Grade Seven	Grade Eight	Grade Nine	Total Courses
Required	1	1	1	3
Elective	<u>4</u>	<u>5</u>	<u>11</u>	<u>20</u>
Total	5	6	12	23

Category II				
	Grade Seven	Grade Eight	Grade Nine	Total Courses
Required	1	2	1	4
Elective	<u>2</u>	<u>4</u>	<u>8</u>	<u>14</u>
Total	3	6	9	18

Category III				
	Grade Seven	Grade Eight	Grade Nine	Total Courses
Required	1	2	1	4
Elective	<u>6</u>	<u>7</u>	<u>18</u>	<u>31</u>
Total	7	9	19	35

particular group of schools offering the highest number of courses to girls apparently was Category III which was the larger schools classified by size of enrollment.

Method of Structure Used In Organizing the Courses

Many various methods are utilized by the industrial arts instructor to organize and structure the content of the course. Table XIX was so constructed to illustrate the apparent methods used in the industrial arts programs of the 215 responding junior high schools in the four state area of Arkansas, Kansas, Missouri, and Oklahoma.

TABLE XIX

METHOD OF STRUCTURE USED IN ORGANIZING THE COURSES

Method of Structure of the Course	Number of Schools Responding Classified by Category				Per Cent
	I	II	III	Total	
Textbook	33	22	22	77	35.8
Outline	26	24	42	102	47.4
Non-structured	13	11	8	32	14.8
Other	2	7	5	14	6.5
No Answer	8	6	4	18	8.3

Table XIX would tend to indicate that the industrial arts courses in the 215 schools in the four state area are largely structured on an outline form. The percentage of respondents indicating that the courses were structured on the textbook used in the particular course was 35.8 per cent. Approximately 15 per cent indicated that the courses were non-structured. In most cases, more than one of the various methods was checked, which would imply a combination of structuring methods in most of the schools.

The Nature of the Industrial Arts Courses

Some industrial arts courses lend themselves to a large amount of text work, while other courses utilize the project as the major vehicle by which the objectives of the specific courses are carried out. Table XX indicated that a certain amount of combining the various items in structuring the courses was evident, although the apparent trend is towards the use of the project in class work.

Table XX illustrates that administrators and industrial arts instructors indicated to a large degree that their industrial arts courses were organized generally around the project work in the classes. The percentage of respondents indicating this fact was 93.2 per cent. The percentage of respondents indicating that some testing and experimentation with materials, was approximately 24.4 per cent. Of the responding schools surveyed, 14.8 per cent indicated their

TABLE XX

THE NATURE OF THE INDUSTRIAL ARTS COURSES IN THE SCHOOLS
CLASSIFIED BY CATEGORY

Nature of the Industrial Arts Courses	Number of Schools responding Classified by Category			
	I	II	III	Total
Largely project work	68	65	67	200
Mostly textbook work	8	13	11	32
Some experimentation	17	18	19	54
Some testing of materials	18	22	13	53
Some Production line work	6	6	8	20
No Answer	8	6	4	18

industrial arts programs involved mostly textbook work. A few schools indicated that some line production work was involved in their industrial arts courses. Approximately four per cent did not respond to this particular item on the questionnaire.

It will be noted that in many cases above, more than one of the above items was checked in response to the questionnaire. In other words, many of the industrial arts courses apparently include not only a large portion of project work but also various amounts of the other factors

listed here as well.

Summary

In reviewing the foregoing information the following summarization was made: The number of courses which a particular industrial arts program offers depends largely on the school's enrollment size. Approximately 50 per cent of the courses were 27 to 40 weeks in length. The titles of the courses offered in the 215 industrial arts programs varied. Many of the course titles did not reveal the particular area or areas of industry covered. The three areas most common to these 669 industrial arts courses were: wood, drawing, and metals in that rank of order. All four types of shop organizational plans were used throughout the 215 schools; the unit and comprehensive general shop plans being favored.

The industrial arts courses were offered in all three grades, but a majority were found to exist in grades eight and nine. The majority of elective courses were offered in grades nine. Many of the larger schools offered such courses in all three grades.

Industrial arts for girls in these 215 junior high schools was very limited. Those schools offering girls such courses generally offered them in grade nine.

The structure and nature of the industrial arts courses varied from school to school. Not one, but several factors determined the structure and nature of most of the programs,

although data would point to the major use of the course outline form as a means of course structure and the use of project work as the vehicle around which the shop class work was organized.

CHAPTER IV
ATTITUDES OF ADMINISTRATORS AND INDUSTRIAL
ARTS INSTRUCTORS

The support which administrators and industrial arts instructors give the industrial arts programs determines, in part, the type of program which exists. The opinions of these individuals reflect the type of program existing in the particular school.

The purposes of this chapter is to determine the general attitude which administrators and industrial arts instructors had toward industrial arts in the junior high school and to what extent this thinking reflected the organization and type of industrial arts program in operation. To this end, the following points in the order indicated, will be developed: (1) the emphasis which the respondents believed should be placed on industrial arts in the junior high school, (2) how these individuals rated their programs (3) a comparison of these ratings in relation to the opinions concerning the amount of emphasis which should be placed on industrial arts, (4) a comparison of the ratings as related to the number and types of shops organized, (5) opinions as to the adequacy of the space and facilities of the shops, and (6) comments concerning the industrial arts programs.

Emphasis Which Should Be Placed on Industrial Arts

Item 12 of the questionnaire asked the respondent to indicate the amount of emphasis which should be placed on industrial arts at the junior high school level. The three choices of answers were: "more," "sufficient," and "less." The answers to this item were tabulated and summarized in Table XXI in two forms. The first arrangement of figures indicates the number of responses of the schools classified according to size of enrollment. The second form is arranged to illustrate the number and percentage of the response from each of the individual states.

The responses were almost evenly divided between the choices of "more" and "sufficient." Fifty-seven to 59 per cent of the respondents from the medium and large schools indicated that "sufficient" emphasis was placed on the program. The percentage from the small schools was almost evenly divided between "more" and "sufficient." Two and eight tenths per cent of the small schools indicated that "less" emphasis should be placed on junior high school industrial arts.

Observation of the second portion of Table XXI shows that 84.3 per cent of the respondents of the junior high schools in Arkansas believed that "more" emphasis should be on industrial arts. Between 61 and 67 per cent of the responses from Kansas and Missouri indicated that "sufficient"

emphasis was placed on industrial arts. The responses from Oklahoma junior high schools were almost evenly divided between "more" and "sufficient" emphasis as will be noted in Table XXI.

TABLE XXI

NUMBER AND PER CENT OF SCHOOLS CLASSIFIED BY CATEGORY AND STATES IN WHICH THE RESPONDENTS INDICATED THE AMOUNT OF EMPHASIS WHICH SHOULD BE PLACED ON INDUSTRIAL ARTS AT THE JUNIOR HIGH SCHOOL LEVEL

Category		More Emphasis	Sufficient Emphasis	Less Emphasis	Total
I	Responses	36	34	2	72
	Per cent	50.0	47.2	2.8	100
II	Responses	29	24	1	72
	Per cent	40.3	58.3	1.4	100
III	Responses	29	41	1	71
	Per cent	40.9	57.7	1.4	100
<hr/>					
<u>Arkansas</u>	Responses	16	3	0	19
	Per cent	84.3	15.7		100
<u>Kansas</u>	Responses	25	42	1	68
	Per cent	36.8	61.2	1.5	100
<u>Missouri</u>	Responses	15	32	1	48
	Per cent	31.3	66.6	2.1	100
<u>Oklahoma</u>	Responses	38	40	2	80
	Per cent	47.5	50.0	2.5	100
Average Percentage		43.7	54.4	1.9	

Respondents' Ratings of the Industrial Arts Programs

Each of the respondents rated his industrial arts program as being either "excellent," "above average," "average," or "below average" in response to item 13 of the questionnaire. As indicated in Table XXII, almost one-half of the respondents indicated "above average" industrial arts programs in their schools. This was 45.6 per cent of the total responses. An average of 22 to 25 per cent of the total respondents indicated that their schools had either "excellent" or "average" industrial arts programs.

TABLE XXII

RATINGS MADE BY THE RESPONDENTS OF INDUSTRIAL ARTS
PROGRAMS IN THE JUNIOR HIGH SCHOOLS OF ARKANSAS,
KANSAS, MISSOURI, AND OKLAHOMA

	Excellent	Above Ave.	Ave.	Below Ave.	No Answer	Per Cent
Arkansas	No. 5	6	6	2	0	19
	Per Cent 26.3	31.6	31.6	10.5		100
Kansas	No. 17	33	15	3	0	68
	Per Cent 25.0	48.6	22.0	4.4		100
Missouri	No. 16	24	6	2	0	48
	Per Cent 33.3	50.0	12.5	4.2		100
Oklahoma	No. 11	35	27	5	2	80
	Per Cent 13.8	43.6	33.8	6.3	2.5	100
Total No.	49	98	54	12	2	215
Ave. Per cent	22.8	45.6	25.1	5.6	.9	100

By individual states, the average per cent of responses to the ratings made by the administrators and industrial arts instructors were rated by the respondents as having "average" to "above average" industrial arts programs. Fifty per cent of the respondents in Kansas indicated the programs were "above average." Fifty per cent of the respondents in Missouri rated the industrial arts programs as being "above average." Forty-three and six tenths per cent of the respondents from Oklahoma indicated "above average" industrial arts programs. An average of 5.6 per cent of the schools from the four states rated the industrial arts program as "below average."

Comparisons of Ratings Made to the Amount of Emphasis
Needed on the Industrial Arts Programs

A comparison of the opinions of the respondents concerning the amount of emphasis which they believed should be placed on industrial arts and the rating made of the industrial arts programs in these schools is illustrated in Table XXIII. A presentation of the data for each of the four states follows:

Arkansas. Eight-six per cent of the schools rating their industrial arts programs as "above average," indicated that "more" emphasis was needed on the program. Sixty per cent of the schools having "excellent" rated programs indicated a need for "more" emphasis. Forty per cent of the schools rating programs as "excellent" indicated that "sufficient" emphasis was placed on industrial arts. All of

the respondents of the Arkansas junior high schools rating "average" and "below average" industrial arts programs indicated that "more" emphasis was needed on such programs.

Kansas. Out of the 68 schools reporting, 34, or 50 per cent of the respondents indicated "above average" industrial arts programs. Sixty-one and eight tenths per cent of these 34 schools indicated that "sufficient" emphasis was placed on industrial arts at the junior high school level. Sixty-nine per cent of the Kansas junior high schools with "average" rated programs indicated "sufficient" emphasis was placed on

TABLE XXIII

NUMBER AND PER CENT OF SCHOOLS IN ARKANSAS, KANSAS, MISSOURI, AND OKLAHOMA IN WHICH THE RESPONDENTS RATED THEIR INDUSTRIAL ARTS PROGRAMS COMPARED TO THE AMOUNT OF EMPHASIS THEY BELIEVED SHOULD BE PLACED ON THE PROGRAM

Arkansas						
	Excellent	Above Ave.	Ave.	Below Ave.	Not Designated	Total
Number	5	7	6	1	0	19
Per cent	26.3	36.9	31.9	5.2		100
More Emphasis	Number 3	6	6	1	0	16
	Per cent 60.0	86.0	100	100		84.2
Sufficient Emphasis	Number 2	1	0	0	0	3
	Per cent 40.0	14.0				15.8
Less Emphasis	Number 0	0	0	0	0	
	Per cent					
Total	Per cent 100	100	100	100	0	100.0

TABLE XXIII (cont'd)

Kansas						
	Excellent	Above Ave.	Ave.	Below Ave.	Not Designated	Total
Number	17	34	13	4	0	68
Per cent	25.0	50.0	19.2	5.8		100
More Emphasis	Number 5	13	4	3	0	25
	Per cent 29.4	38.2	30.7	75.0		36.8
Sufficient Emphasis	Number 11	21	9	1	0	42
	Per cent 64.7	61.8	69.3	25.0		61.7
Less Emphasis	Number 1	0	0	0	0	1
	Per cent 5.9					1.5
Total	Per cent 100	100	100	100	0	100.0
Missouri						
	Excellent	Above Ave.	Ave.	Below Ave.	Not Designated	Total
Number	16	24	6	2	0	48
Per cent	33.3	50.0	12.5	4.2		100
More Emphasis	Number 2	8	4	1	0	15
	Per cent 12.5	33.3	66.7	50.0		31.2
Sufficient Emphasis	Number 14	15	2	1	0	32
	Per cent 87.5	62.6	33.3	50.0		66.6
Less Emphasis	Number 0	1	0	0	0	1
	Per cent	4.2				
Total	Per cent 100	100	100	100	0	100.0

TABLE XXIII (cont'd)

Oklahoma						
	Excellent	Above Ave.	Ave.	Below Ave.	Not Designated	Total
Number	11	35	27	5	2	80
Per cent	13.8	43.6	33.8	6.3	2.5	100
More Emphasis	Number 4 Per cent 36.4	11 31.4	17 63.0	4 80.0	0	36 45.0
Sufficient Emphasis	Number 7 Per cent 63.6	23 65.6	9 33.4	1 20.0	0	40 50.0
Less Emphasis	Number 0 Per cent	1 3.0	1 3.6	0	0	2 2.5
No Answer	Number 0 Per cent	0	0	0	2 100.0	2 2.5
Total	Per cent 100	100	100	100	100	100

industrial arts. Seventy-five per cent of the schools with "below average" rated industrial arts programs indicated a need for "more" emphasis. One school indicating an "excellent" rated industrial arts program noted that "less" emphasis was needed on industrial arts.

Missouri. Approximately 75 per cent of the respondents in the junior high schools of Missouri rating their industrial arts programs as either "excellent" or "above average" indicated that "sufficient" emphasis was placed on industrial arts.

In those schools from which the respondents rated their industrial arts programs as "average," they indicated that "more" emphasis was needed on industrial arts at the junior high level. Out of the approximate 83 per cent of "excellent" and "above average" rated programs, approximately 75 per cent of the respondents from these schools indicated that there was "sufficient" emphasis on industrial arts.

Oklahoma. The largest number, 78.4 per cent, of the respondents from the junior high schools of Oklahoma, rating the industrial arts programs as either "average" or "above average", indicated they were almost evenly divided between a choice of "sufficient" emphasis and "more" emphasis needed on industrial arts. Sixty-three to 66 per cent of the respondents rating their industrial arts programs as either "excellent" or "above average" indicated that "sufficient" emphasis was placed on industrial arts.

Comparisons of Ratings Made to That of the Number and
Types of Shops in the Industrial Arts Programs

To determine how the industrial arts programs compared with one another, the number and types of industrial arts courses offered in each of the individual groups of rated programs was noted and this compared to the ratings made by the respondents of the schools of the four states with which this study was concerned. Table XXIV shows the results of

these tabulations and are treated in the following text according to the ratings given to the industrial arts programs by the respondents.

"Excellent" rated programs. Nearly 45 per cent of the 188 courses in these 49 "excellent" rated programs were organized as unit shop courses. Almost 35 per cent of the courses were comprehensive general shop courses. Approximately 19 per cent of the courses were limited general shop courses. The largest number of unit shops, 48 each, were from the responding schools of Kansas. The largest number of comprehensive general shops, 29 each, were from Missouri. Four laboratory of arts and industries type of shop courses were from the schools of Kansas and Oklahoma.

"Above average" rated programs. The largest number of unit shops, 138 each, occur in the 334 courses in the 98 industrial arts programs rated as "above average." This percentage was 41.4. Each of the comprehensive and limited general types of shops was represented by approximately 27 to 28 per cent of the total number of courses in these programs. Only five laboratory of arts and industries shop courses were indicated for these programs. Sixty-nine of the 334 courses in this group existed as unit shops in the schools responding from Kansas. Oklahoma junior high schools responding showed their largest number of courses to be unit shops. In Arkansas and Missouri, the largest number of courses were of

TABLE XXIV

NUMBER AND PERCENTAGE OF THE TYPES OF SHOPS ORGANIZED IN
215 JUNIOR HIGH SCHOOL INDUSTRIAL ARTS PROGRAMS OF
ARKANSAS, KANSAS, MISSOURI, AND OKLAHOMA AS RATED
BY THE RESPONDENTS OF THESE SCHOOLS

Forty-nine "Excellent" Rated Programs						
States Number of Programs	Ark. 5	Kan. 17	Mo. 16	Okla. 11	Total 49	Per cent
Types of Shops						
Unit	1	48	15	20	84	44.6
Comprehensive General	8	19	29	9	65	34.6
Limited General	1	14	17	3	35	18.6
Laboratory of Arts and Industries	0	2	0	2	4	2.2
Total	10	83	61	34	188	100.0
Ninety-eight "Above Average" Rated Programs						
States Number of Programs	Ark. 6	Kan. 33	Mo. 24	Okla. 35	Total 98	Per cent
Type of Shops						
Unit	2	69	24	43	138	41.4
Comprehensive General	11	25	39	22	97	28.2
Limited General	4	45	20	25	94	27.3
Laboratory of Arts and Industries	0	4	0	1	5	3.1
Total	17	143	83	91	334	100.0

TABLE XXIV (cont'd)

Fifty-four "Average" Rated Programs						
States Number of Programs	Ark. 6	Kan. 15	Mo. 6	Okla. 27	Total 54	Per cent
Types of Shops						
Unit	0	13	0	22	35	29.9
Comprehensive General	5	8	8	8	29	24.7
Limited General	5	17	1	25	48	41.0
Laboratory of Arts and Industries	0	3	1	1	5	4.4
Total	10	41	10	56	117	100.0
Twelve "Below Average" Programs						
States Number of Programs	Ark. 2	Kan. 3	Mo. 2	Okla. 5	Total 12	Per cent
Types of Shops						
Unit	0	3	2	8	13	46.5
Comprehensive General	1	0	1	1	3	10.7
Limited General	0	4	1	6	11	39.3
Laboratory of Arts and Industries	0	0	0	1	1	3.5
Total	1	7	4	16	28	100.0

the comprehensive general shop type.

"Average" rated programs. Forty-one per cent of the courses in the industrial arts programs were designated as limited general shops. Nearly 30 per cent of the 117 courses in this

group were unit shops. Oklahoma's responding junior high schools indicated that most of their industrial arts courses were unit and limited general shop courses. The largest number of courses in this group for Missouri was the comprehensive general shop type. The responding junior high schools of Kansas rating their programs as "average" indicated that most of these courses were either unit or limited general shop type courses. The six "average" rated programs of the schools of Arkansas indicated an even number each of limited and of comprehensive general shop courses.

"Below average" rated programs. The twelve industrial arts programs rated as "below average" had 13 courses, or 46.5 per cent of the 28 courses listed as unit shops. Thirty-nine and three tenths per cent of the courses were limited general shop courses. Oklahoma's responding schools indicated a large number of courses in this group to be unit shops. The schools from Kansas in this group showed an almost even number of unit and limited general shop courses. Two out of four courses in the schools responding from Missouri were listed as unit shops. One comprehensive general shop course was included in this group, rated as "average" from the state of Arkansas.

In order to determine any emphasis placed on these industrial arts programs, the average number of industrial arts courses per schools was noted in Table XII, page 52, and Table XIII, page 54a. The average number of courses per school

of those classified as small schools in Category I was two courses. This number increased as the enrollment increased. The medium size schools, Category II, averaged 2.8 courses per school and the large schools in Category III, averaged 4.6 courses per school.

In comparing the industrial arts programs by states rather than by size of enrollment, a somewhat different average exists. The schools of Arkansas averaged two courses per school while Kansas schools averaged 3.1 courses per school. Missouri averaged 3.2 courses per school.

The ratings and the particular emphasis stressed by the respondents were compared to the groupings of grades in which the courses were offered. This was done in an attempt to further determine to what degree industrial arts was emphasized in the schools surveyed.

In Table XXV and XXVI the specific grades in which industrial arts courses were offered were grouped into seven groups; viz, the schools offering such in grades seven, eight, and nine; courses offered only in grades eight and nine, courses in grade nine only; grade eight only; grade seven and grade eight only, seven only, and those courses offered in grades seven and nine only. In making the comparisons, the following points were observed, concerning Table XXV:

Twenty-five of the 72 small schools in Category I, or 34.7 per cent, offered industrial arts courses in grade nine

only. Thirteen, or more than one-half of these 25 schools indicated an "average" industrial arts program. Six of the 25 responding schools' industrial arts programs were rated as "above average" while two were rated as "excellent."

Sixteen of the 72 schools in Category I, or 22.2 per cent offered industrial arts in all three grades; viz, grade seven, eight, and nine, yet only four schools indicated an "excellent" rated program, while seven were rated as "above average." Three of the respondents believed that the programs were "average" while two rated the programs as "below average."

Comparisons of the ratings and the grade groups in Category II show that 29 out of the 72 schools, or 40.3 per cent offered industrial arts courses in all three grades. Eight schools indicated "excellent" programs while 16 of these 29 programs were rated as "above average."

In Category III, those schools having the large enrollments, 54.9 per cent or 39, offered industrial arts courses in all three grades. Sixteen of these schools indicated "excellent" programs while 19 indicated "above average" programs in the junior high schools. Thirteen schools with industrial arts programs rated as above average offered industrial arts in grades eight and nine only.

In comparing the opinions of the respondents concerning the amount of emphasis needed on industrial arts and the

TABLE XXV

NUMBER AND PERCENTAGE OF SCHOOLS CLASSIFIED BY CATEGORY
IN WHICH THE RESPONDENTS RATED THEIR INDUSTRIAL ARTS
PROGRAMS COMPARED TO THE COMBINATIONS OF GRADES
IN WHICH INDUSTRIAL ARTS COURSES WERE OFFERED

Category I									
Ratings	7,8,9	8,9 Only	9 Only	8 Only	7,8 Only	7 Only	7,9 Only	Total	Per Cent
Excel- lent	4	2	2	1	0	0	0	9	12.5
Above Ave.	7	7	6	4	2	0	0	26	36.2
Average	3	4	13	7	2	0	0	29	40.3
Below Ave.	2	0	3	0	1	0	0	6	8.3
Undesig- nated	0	0	1	0	1	0	0	2	2.7
Total	16	13	25	12	6	0	0	72	
Per cent	22.2	18.1	34.7	16.7	8.3	---	---	---	100
Category II									
Ratings	7,8,9	8,9 Only	9 Only	8 Only	7,8 Only	7 Only	7,9 Only	Total	Per Cent
Excel- lent	8	4	1	3	0	0	0	16	22.2
Above Ave.	16	8	3	7	0	1	0	35	48.6
Average	4	5	4	1	0	1	0	15	20.9
Below Ave.	1	3	1	1	0	0	0	6	8.3
Total	29	20	9	12	0	2	0	72	
Per cent	40.2	27.8	12.5	16.7	---	2.7	---		100

TABLE XXV (cont'd)

Category III									
Ratings	7,8,9	8,9 Only	9 Only	8 Only	7,8 Only	7 Only	7,9 Only	Total	Per Cent
Excel- lent	16	2	2	1	2	0	1	24	33.8
Above Ave.	19	13	4	0	3	0	1	40	56.4
Average	4	2	0	1	0	0	0	7	9.8
Below Ave.	0	0	0	0	0	0	0	0	
Total	39	17	6	2	5	0	2	71	
Per cent	54.9	23.7	8.4	2.8	7.4	---	2.8		100

grade groupings in which these courses were offered, Table XXVI illustrates the following:

While only 40 per cent of the seventy-two schools classified as small schools offered industrial arts courses in two grade groupings, that is grades seven, eight, and nine and in grades eight and nine only, almost 52 per cent indicated that there should be more emphasis placed on industrial arts in the junior high school.

Forty per cent of the seventy-two schools in category II, or twenty-nine, offered courses in all three grades. Only eight of these schools indicated that more emphasis should be placed on the program. Twenty-one of the schools offering courses in the three grades indicated that there was sufficient emphasis on industrial arts at the junior high school

The largest number of schools in category III offering industrial arts in three grades indicated that there was sufficient emphasis on the program at the junior high school level. Fourteen out of the twenty-nine schools offering these courses in the three grades indicated that more emphasis should be placed on the program.

The findings indicated that although an average of less than 40 per cent of the schools offer industrial arts courses in grades seven, eight, and nine; over 50 per cent

TABLE XXVI

THE NUMBER AND PERCENTAGE OF SCHOOLS CLASSIFIED BY CATEGORY IN WHICH THE RESPONDENTS INDICATED THE EMPHASIS WHICH SHOULD BE PLACED ON THE INDUSTRIAL ARTS PROGRAMS COMPARED TO THE COMBINATIONS OF GRADES IN WHICH THE COURSES WERE OFFERED

Category I								
Emphasis Indicated	7,8,9	8,9 Only	9 Only	8 Only	7,8 Only	7 Only	7,9 Only	Per Total Cent
More	7	5	16	7	2	0	0	37
Sufficient	9	7	8	5	4	0	0	33
Less	0	1	1	0	0	0	0	2
Total	16	13	25	12	6	0	0	72
Per cent	22.2	18.1	34.7	16.7	8.3	--	--	100

TABLE XXVI (cont'd)

Category II								
Emphasis Indicated	7,8,9	8,9 Only	9 Only	8 Only	7,8 Only	7 Only	7,9 Only	Per Cent
More	8	12	5	3	0	1	0	29
Sufficient	21	8	4	9	0	1	0	43
Less	0	0	0	0	0	0	0	0
Total	29	20	9	12	0	2	0	72
Per cent	40.3	27.8	12.5	16.7	--	2.7	--	100

Category III								
Emphasis Indicated	7,8,9	8,9 Only	9 Only	8 Only	7,8 Only	7 Only	7,9 Only	Per Cent
More	14	7	4	1	2	0	1	29
Sufficient	25	10	2	1	2	0	1	41
Less	0	0	0	0	1	0	0	1
Total	29	17	6	2	5	0	1	71
Per cent	54.9	23.7	8.4	2.8	7.4	--	2.8	100

of the respondents indicated that they believed that sufficient emphasis was placed on industrial arts.

Opinions of the Respondents Concerning the Adequacy of Space and Facilities for the Industrial Arts Program

Item 39 and 40 of the questionnaire were designed to show whether industrial arts programs had shops which were

adequately equipped and if adequate space facilities were existing. Table XXVII illustrates the results.

On the average, 62.9 per cent of the respondents felt that their shops were adequately equipped, while 32.4 per cent believed they were not. The remaining percentage of respondents did not answer the question.

TABLE XXVII

NUMBER AND PERCENTAGE OF SCHOOLS CLASSIFIED BY CATEGORY
RESPONDING TO QUESTIONS THIRTY-NINE AND
FORTY OF THE QUESTIONNAIRE

Question: "Do you consider the shops in your school adequately equipped?"					
Category		Yes	No	No Answer	Total Per Cent
I	No. of Schools	39	30	3	72
	Percentage	54.1	41.7	4.2	100
II	No. of Schools	50	18	4	72
	Percentage	69.4	25.0	5.6	100
III	No. of Schools	45	23	3	71
	Percentage	<u>63.4</u>	<u>32.4</u>	<u>4.2</u>	100
	Total	134	71	10	215
	Ave. Per cent	62.3	33.0	4.7	100

TABLE XXVII (cont'd)

Question: "Do you consider the shops as having adequate space facilities?"					
Category	Yes	No	No Answer	Total	Per Cent
I No. of Schools	33	36	3	72	
Percentage	45.8	50.0	4.2		100
II No. of Schools	37	30	5	72	
Percentage	51.4	41.7	6.9		100
III No. of Schools	43	24	4	71	
Percentage	60.6	33.8	5.6		100
Total	113	90	12	215	
Ave. Per cent	52.6	41.8	5.6		100

Comments Made by the Respondents Concerning Their
Industrial Arts Programs

A general attitude towards industrial arts can often be discerned through the comments which an individual makes about a particular program. The comments requested in the questionnaire are somewhat indicative of the general thinking on the part of many of the respondents. The following comments were those of most frequent occurrence, and are grouped by responses from the four individual states with which this study was concerned:

Arkansas.

1. More emphasis should be placed on the program.
2. More emphasis should be placed on the better student.
3. The administration and the teacher can make or break any program.
4. Difficulty in obtaining qualified instructors has prevented our expansion.
5. Need larger participation and larger budget.
6. In the process of expanding current facilities.
7. Evaluation of own projects by students before bringing them to the instructor.

Kansas.

1. Should offer units in additional areas.
2. Low ability students should have a program too.
3. It all depends on the instructor.
4. We have some team teaching in that our students rotate between shops.
5. We have good teachers and a varied program.
6. We need more exploration of different fields on the junior high school level.
7. We need more equipment.
8. Need longer class periods and smaller classes.
9. Now changing the program and what is being offered.

10. As the years go by the industrial arts courses will be improved - the shops remodeled.
11. Industrial arts has suffered at the expense of science and math in the past few years.
12. Our faculty has spent two years developing a course of study. Our shop budget is over 5,000 dollars for supplies.
13. Needs some upgrading in the fields of electronics and graphic arts.
14. Two new courses just introduced - electricity and general shop.

Missouri.

1. Limited facilities.
2. We are in a period of change for the better (we hope)
- We need better facilities, although experiences the students get in this course seem to give a good foundation for high school.
3. Ours is basically a crafts program but an outstanding one.
4. Curricula does not meet the needs of an inter-city school. Too rigid control by city commissioners.
5. A much needed area of the school curriculum.
6. It is for eighth grade boys only.
7. Much interest. We are having more students in shop before and after school than any one shop class.

8. More interest should be placed on industrial arts for the below average student. The program should be expanded for these people because many of these students will go into industry as workers.
9. We try to give our pupils an opportunity to explore practically every area in industrial arts over the seventh and eighth grades. Freshmen then have general shop.
10. In a school where class size is usually thirty-five, shop classes do not exceed fifteen.
11. We are teaching a preparation program to ninth grades for Trades and Industries in the senior high in addition to industrial arts, a terminal course.

Oklahoma

1. Just a good practical program. Those who are interested may continue three years in high school.
2. We have wood. We need plastics, metal and electricity.
3. A greater need for shop in seventh and eighth grade.
4. Good as far as it (industrial arts program) goes.
5. We have all new equipment.
6. Should be improved to help non-academic students.
7. Well pleased with our program.
8. Lack of equipment and space.
9. A variety of experiences for eighth graders. Ninth graders take wood class for stronger students.

10. We need a more comprehensive program. We are not meeting the needs of all our students. Especially those who are not interested in a college preparatory program. I think this is an important reason for a great number of people dropping out of school.
11. We need some types of hand skills. It is essential in a well-adjusted program of education.
12. We feel we have one of the best programs in the state for a school of this size.
13. Expensive equipment makes a shop a hard subject to present to students in small high schools. Most shop teachers I have been associated with are poor in classroom techniques and discipline.
14. Very good program for what is being taught. Not enough areas other than woodworking.
15. Need more room and teachers. The equipment is obsolete.
16. Ninth grade is the first course. We believe it should be offered in the seventh grade.
17. Excellent equipment, housing and instruction.
18. Space is our problem. This is being corrected by a new school in the near future.
19. We are now opening a new junior high school.
20. Objectives are being brought up to date.

Summary

In summary, no general agreement between the respondents as to the amount of emphasis which should be placed on junior high school industrial arts was found to exist. Approximately one-half of the respondents rated their industrial arts programs as "above average," the other half being almost equally divided between those rating such programs as "excellent" and those rating their programs as "average."

An average of less than 40 per cent of the total number of schools responding offer industrial arts courses in three grades; viz, grades seven, eight, and nine; yet, over 50 per cent of the respondents indicated there was sufficient emphasis on industrial arts at the junior high school level.

Almost two-thirds of the respondents believed their shops were adequately equipped. Almost one-half of the respondents indicated that the industrial arts shop facilities were adequate. The comments suggested that the slow as well as the above average student should be provided for in the industrial arts junior high school program. Many of the respondents believed that more areas of industry needed to be explored by the students. Many indicated that changes in their industrial arts programs were taking place.

CHAPTER V

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

Summary

This study was made for the purpose of ascertaining some of the significant aspects of the industrial arts programs, in the junior high schools of the four state region of Arkansas, Kansas, Missouri, and Oklahoma. Limitations were placed upon the problem by omitting some aspects such as titles of texts, qualifications and certification of instructors, salaries and extra-curricular duties, and school shop budgets and expenditures.

The study was based upon the data received from 248 or 68.8 per cent, of 362 questionnaires mailed to junior high schools in the four states. The per cent of respondents that were administrators was 83.9; while a small number, 13.3 per cent, were industrial arts instructors. The schools were divided into three categories: small, medium, and large with average enrollments of 196, 513, and 1,036 pupils respectively.

The findings of this study were used as a basis upon which a general conclusion and recommendations were developed.

1. The majority of the junior high schools in the four state area followed the 6-3-3 school plan of organization.

2. Nearly one-half of the junior high schools in this area have been organized over a period of 30 years.

3. Generally speaking, most of the junior high school industrial arts programs were organized at the time the junior high schools were established.

4. Oklahoma apparently organized a number of industrial arts programs in existing junior high schools 20 to 24 years ago.

5. A large percentage of the industrial arts programs in the schools of Arkansas and Missouri were organized between 1956 and 1960.

6. Of the 28 responding junior high schools that had no industrial arts programs, 46 per cent had never had a program; Twenty-one per cent had plans for a program; and twelve per cent had a program in the past but it had been discontinued.

7. There was no significant difference between the length of academic and industrial arts class periods in the schools. While class period length in minutes varied from school to school, the majority of the periods were from 55 to 59 minutes in length.

8. The course length in weeks varied from school to school. Nearly one-half of the schools had courses ranging from 27 to 40 weeks in length, although the range of the largest number of courses was 36 weeks. Apparently many of the 36 weeks courses were those in which the students were rotated in different areas of the program.

9. Many industrial arts instructors in the small category schools taught other subjects. In the larger schools the

frequency of "full-time" instructors increased.

10. In the smaller schools the titles of industrial arts courses most frequently occurring were: (1) shop, (2) general shop, (3) industrial arts, and (4) woodwork. The most frequently occurring titles in the medium size schools were: (1) general shop, (2) woodwork, and (3) industrial arts. General shop and woodworking were the two titles appearing most frequently in the larger schools.

11. The major areas of industry most common to the industrial arts courses were the following, ranked according to their frequency of occurrence: (1) wood, (2) drawing, and (3) metal. In Oklahoma, crafts instead of metal held third place. Electricity held fourth place in Arkansas and Kansas, while crafts was fourth in Missouri and metal fourth in Oklahoma. After fourth place, there was a variation in rank among areas in the junior high schools of the individual states.

12. Shop, general shop, industrial arts, and woodworking were the most frequently occurring titles of courses. With exception of the last title, it was difficult to determine what the other three titles involved in industrial exploratory experiences.

13. The unit industrial arts course plan was widely used in the schools surveyed. The limited general and comprehensive general courses were approximately even in number, but do not appear in use as often as the unit course plan. The

particular type of industrial arts course plan employed by Arkansas was the comprehensive general. Kansas favored the unit course plan while Missouri appeared to favor the comprehensive general industrial arts plan of organization. Oklahoma, like Kansas, apparently favored the unit course plan.

14. The total number of courses required for boys in the schools surveyed was less than the number of elective courses. Two hundred and four, or 32.6 per cent of the courses were required, while 422, or 67.4 per cent were elective. Eleven per cent of the total courses were required in grade seven. One hundred fourteen, or 18.3 per cent were required in grade eight. A percentage of 3.4 of the courses were required in grade nine.

15. Ten and one tenth per cent of the total number of courses offered were elective in grade seven. One hundred and fourteen courses, or 18.3 per cent, in grade eight were elective. In grade nine, 243 courses, or a percentage of 38.3 of the total were elective.

16. Very few junior high schools offered industrial arts to girls. Out of the 669 courses available, only 76 or 11.3 per cent enrolled girls. Eleven of the 76 courses open to girls were required, while the remaining number were elective. The greatest number of these courses were offered in grade nine.

17. A variation of opinion exists concerning the amount

of emphasis which should be placed on industrial arts at the junior high school level.

18. An average of 73 per cent of the schools surveyed in Arkansas, rating the programs as "excellent" or "above average," indicated that more emphasis should be placed on industrial arts. Seventy-five per cent of the junior high schools responding from Kansas, rating the programs as either "excellent" or "above average," indicated that there was "sufficient" emphasis on industrial arts. Eighty-three per cent of the schools in Missouri, rating the programs as either "excellent" or "above average," indicated that "sufficient" emphasis was placed on junior high school industrial arts. The majority of Oklahoma schools rated the industrial arts programs as "above average" to "average," with forty-nine and five tenths per cent indicating that there was "sufficient" emphasis on the program.

19. In the comparison of the number and types of industrial arts courses organized in the various programs to the rating made of these programs, it was observed that nearly one fourth of the industrial arts programs were rated as "excellent," while almost one-half were rated as "above average." In these two groups of 147 rated programs, comprising approximately 75 per cent of the total programs surveyed, the unit shop course was favored. This type of course accounted for nearly one-half of the courses in these two groups. The

The largest percentage of limited general shop courses occurred in the "average" group of rated industrial arts programs. Almost one-third in this group were comprehensive general shop courses. Approximately one-half of the courses in the "below average" rated industrial arts programs were unit shop courses.

20. Thirty-nine per cent of the schools in the four states offered industrial arts courses in grades seven, eight, and nine. Approximately 23 per cent offered courses in only grades eight and nine. Approximately 19 per cent of the schools offered courses only in grade nine. The largest percentage, (34.7 per cent) of the small junior high schools offered industrial arts courses in grade nine only. Twenty-two per cent offered courses in all three grades in the small school category. The medium size schools indicated a percentage of 40.3 offering industrial arts courses in all three grades in each school. Nearly 28 per cent of the 72 medium size schools offered such courses in grades eight and nine only. The percentage of schools offering industrial arts courses in all three grades increased to nearly 55 per cent in the large schools in Category III. Seventeen of the 71 schools in this category, approximately 24 per cent, offered courses in grades eight and nine only.

21. A large number of respondents indicated that the industrial arts shops were adequately equipped, although a

large majority of them were administrators. Nearly one-half of the respondents of the schools indicated that the industrial arts shops had adequate space facilities.

22. In a large percentage of the schools the project was used as the vehicle around which the courses were organized. The course outline was used, to a large degree in structuring the courses, although, the textbook was also an important means by which the courses were structured. Other vehicles around which courses were structured were the experiment and the testing of materials.

23. The majority of comments indicated that industrial arts was an important phase of education for junior high school students and should be included in all junior high school programs; that the programs should include provisions for the retarded students as well as the exceptional one; and that more areas of industry should be explored in junior high school industrial arts.

Conclusion

To the extent that the facts obtained are accurate, and insofar as the responding schools are representative of the whole, the following general conclusion may be drawn. There seems to be no basic minimum core of industrial arts exploratory experiences established in the junior high schools which would assure a student of receiving the same basic

industrial arts content from one school to another. The lack of such a basic core, or the variation in programs exist in curricula, course content, physical facilities, duration of instruction, instructional staff utilization, course titles, shop types, grade-levels of experiences, ratings and philosophy.

Recommendations

In view of the findings and the stated conclusion, the following recommendations would appear to be in order:

1. A minimum standardization of basic core industrial arts exploratory experiences for the junior high school level should be established.
2. An organization of junior high school industrial arts instructors should be established for the purpose of developing and standardizing a basic industrial arts exploratory program. Such a group should work cooperatively with the teacher education institutions, and administrative groups, in developing such a program.
3. That industrial arts should be made available to all girls during their junior high school years.

Problems for Further Study

As problems for future study the following topics might be profitably investigated:

1. The standardization question relative to the continuity of work in the transfer of students from one school to another.

2. The development of evaluative techniques for use in the study of junior high school industrial arts programs.

3. The views of industry on the basic core of junior high school industrial arts experiences.

4. The influence of junior high school industrial arts experiences on senior high school and occupational interests.

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APPENDIX

PORTER LIBRARY

Dear Principal:

As part of my advanced graduate work at Kansas State College, Pittsburg, Kansas, I am making an approved survey of the course offerings in the industrial arts departments of the junior high schools of the four-state area of Arkansas, Kansas, Missouri, and Oklahoma.

To help refresh your memory, a definition of the different types of industrial arts shop organizational plans are listed that may aid you in completing this questionnaire.

Unit Shop

A shop in which only one area of instruction is carried on. Example:
A welding shop or a sheet metal shop.

Comprehensive General Shop

A shop, usually taught by one instructor, which has several areas in different fields such as woods, metals, electricity, drafting, plastics, etc.

Limited General Shop

A shop limited to one major field such as general metals (forging, foundry, welding, machine shop, sheet metal) or general woodwork (hand woodwork, machine woodwork, finishing, etc.

Laboratory of Arts and Industries

A type of shop in which a large number of areas are represented such as: woods, plastics, printing, electricity, photography, power mechanics, drafting, etc.

Enclosed is a questionnaire on which you may mark the necessary answers. Care has been taken to provide an easy way to answer all items to enable you to more easily complete the form with a minimum of effort and time.

The return of this completed questionnaire on or by May 20, 1964 would be greatly appreciated. Thank you.

Sincerely,

Bill M. Bumgardner
Bill M. Bumgardner M.S.

INDUSTRIAL ARTS COURSE OFFERINGS IN THE JUNIOR HIGH
SCHOOLS OF ARKANSAS, KANSAS, MISSOURI, AND OKLAHOMA

Title of person completing questionnaire _____

1. Enrollment of your junior high school. _____
2. Administrative organization of your school; (Check one)
6-3-3-___; 6-2-4 ___; 6-4-2 ___; Other ____.
3. Approximate number of years the present school has been
organized. (Check one)
1-5; 5-10; 10-15; 15-20; 20-25; 25-30; 30-35; 35-40; Over 40.
____ _
4. Is there an industrial arts program in your school? Yes ___ No ___.
5. If there is no industrial arts program in your school please
answer the following: (Check the appropriate answers)
 - a. There has never been such a program in our school. ____
 - b. There was a program in our school at one time but was
discontinued. ____ Reason for discontinuance: _____
 - c. At present there are plans being made to organize such a
program in our school. ____
6. If the answer to question four was "yes" approximately how
many years has the program been established in your school? ____
7. Length of academic class periods in your school. ____ Minutes.
8. Length of shop class periods in your school. ____ Minutes.
9. Number of industrial arts instructors who teach only indus-
trial arts subjects in your school. ____.
10. Number of industrial arts instructors who teach some indus-
trial arts subjects and other courses in your school. ____.
11. How many of these industrial arts instructors also teach in-
dustrial arts courses in a senior high school program? ____.
12. In general, what is your opinion on the amount of emphasis
which should be placed on industrial arts at the junior high
school level? More emphasis is needed ___; Sufficient
emphasis ___; Less emphasis is needed ____.
13. In your opinion how would you rate the industrial arts pro-
gram of your junior high school? Excellent ___; Above aver-
age ___; Average ___; Below average ____.
14. Comments on the program: _____

Items 15.	16.	17.	18.	19.	20.
<p>Check all items pertaining to the particular grade and courses which you list.</p> <p>List each course offered to boys and girls separately.</p> <p>GRADE 7 Title of Course</p>	Length of Course-Weeks	BOYS Required Elective	GIRLS Required Elective	<p>Areas of Industry Covered in Course</p> <p>Wood Metal Drawing Plastics Electricity Electronics Printing Home Mechanics Power Mechanics Farm Mechanics Crafts Other</p>	<p>Shop Plan</p> <p>Unit Shop Comprehensive General Limited General Shop Laboratory of Arts and Industries</p>
A					
B					
C					
D					
21. GRADE 8 Title of Course	22.	23	24	25.	26.
A					
B					
C					
D					
27. GRADE 9 Title of Course	28.	29	30	31.	32.
A					
B					
C					
D					
E					
F					
33. GRADE 10 Title of Course	34.	35	36	37.	38.
A					
B					
C					
D					
E					
F					