A STUDY OF THE COURSE OFFERINGS IN SMALL HIGH SCHOOLS IN OKLAHOMA WITH SPECIAL EMPHASIS ON INDUSTRIAL ARTS

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By

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TABLE OF CONTENTS

Chapter — Page

LIST OF TABLES

CHAPTER I

THE PURPOSE AND ORGANIZATION OF THE STUDY

Industrial arts and its forerunners, manual training and manual arts, have undergone many changes during the short period that Oklahoma has had an organized program of education. Originally the period of manual training in Oklahoma was purely a woodshop, and is still in some schools throughout the state. Oklahoma seemed to hardly feel the period of manual arts, but the advent of industrial arts has brought a changing dynamic program into the state. As stated before, many shops are still only woodshops and are still teaching manual training in the basement, while other industrial arts programs have been moved to equal status with the rest of the high school. Some administrators are recognizing the term industrial arts as a field by itself such as the social studies, mathematics and histories. At one time the manual training shop might have been thought of as the place for the ill-fitted boy who could not master academic work, but modern administrators and boards of education are becoming cognizant that the industrial arts shop is a place for the genius and also for the slow learner, that the shop is a place where many problems are raised from the simple to the most complex. Projects vary from simple cutting boards to the

building of electric motors. There is a place in the industrial arts for all students of both sexes. Because of industrial arts' rapid growth, it is difficult for some older industrial art teachers, administrators and those connected with the small high school to understand the present program of industrial arts as it exists today.

Origin and Need for the Study. This study was begun from a suggestion from Dr. DeWitt T. Hunt. The study was made to make available facts and information for administrators in high schools, industrial arts teachers and school board members for the purpose of evaluating their present industrial arts program in terms of the general trend of other shops in Oklahoma. The study might also help those who are responsible for a school curriculum to establish a new industrial arts department in those small schools that feel they can benefit from such a department. It can also be used as a basis for determining what the small high school curriculum is offering. Studies of this type should be made periodically in order that those concerned can keep a definite idea of the status of the present program.

Delimitation of the Study. The writer proposes to treat industrial arts on the high school level only. Junior high and elementary schools are not included. No attempt has been made to give a history of industrial arts other than for the purpose of clarifying philosophies and forces that started certain movements in industrial arts in

Oklahoma. The study is confined to small accredited high schools of two hundred or less total enrollment. It is not a comparison with any other state. This study includes separate schools and white schools that are accredited. It does not include Indian schools, parochial or denominational schools. Those high schools that are part of a college or university program were not included, and no industrial school was used in this investigation.

Method of Collecting Information. The information for the study was obtained principally from documents in the school library, Stillwater, and the Department of Education, State Capitol Building, Oklahoma City. The writer spent a number of days at the Department of Education gathering necessary information. The information for the worksheet on page five was taken from the Applications for Accreditment of High Schools. No survey was made. All similar studies reviewed were made from surveys with some documentary findings. The names of industrial arts courses can only be obtained from surveys. Applications for accreditation do not list the name such as general shop, woodwork, art metal, but only as shop, manual training or industrial arts, so that information could not be included in the study.

Definitions of Selected Terms. In making any study that is written for the benefit of others, a common understanding must be reached between the reader and the writer. A few terms mentioned quite frequently in the thesis are defined as follows:

General Education has as its purpose to meet the needs of the individual in the basic aspects of living in such a way as to promote the fullest possible realization of personal potentialities and the most effective participation in a democratic society. (11, page 23)

Secondary Education. The period of education whether public or private which usually consists of grades seven to twelve or nine to twelve during which pupils learn to use independently the tools of learning that they have previously mastered, in which education is differentiated in varying degrees according to the needs and interests of the pupils, and which may be either terminal or preparatory. (7, page 264)

Manual Training is any form of constructive work that serves to develop the powers of the pupil through spontaneous and intelligent self-activity. The power of observation is developed through exacting demands upon the senses, the reason by constant necessity for thought before action, and the will by the formation of habits of patience and careful application. (8, page 15)

Manual Arts is understood as defining hand activities given in school for general education purposes, providing life experiences within the field of industrial activities which may serve as means of concrete expression in other shopwork, as opportunity for discovery of individual abilities and aptitudes, and as sources of information which may serve for educational guidance toward the latter choice of a life career. (14, page 391)

Industrial Arts will be defined as those phases of general education which deal with industry - its organization, materials, occupations, processes and products - and with the problems resulting from the industrial and technological nature of society. (13, page 2)

For the purpose of this study Carter V. Good's definition of secondary education will be generally accepted. However, the period of education will consist of grades

WORK SHEET

A Study of the Course Offerings in Small High Schools in Oklahoma

by Lemuel W. Apala, Elgin, Oklahoma

Summer and Fall, 1951

Name of city_____ School_____

Grades included: 9-12 10-12 Member of NCA: Yes No

Name of Industrial Art Teacher_____

Street Address of Teacher_____

Degree _____ Annual Salary _____

First Teaching Field: Industrial Arts Other:_____
Second Teaching Field: Industrial Arts Other:_____
Type School: White Colored Catholic High School Enrollment_____
Length of Industrial Art period: 45 60 Other_____

Teaching Load of Industrial Art Teacher

Period	Subject Taught	Enrollment
1.		
2.		
3.		
4.		
5.		
6.		
7.		

Subjects Offered in High School

Subject	Units	Subject	Units
English I, II, III, IV		Botany	
Dramatics		Zoology	
Public Speaking		Biology	
Journalism		Geology	
Algebra I, II		Physiology	
Geometry - Plain, Solid		General Science	
Arithmetic		Agri. General, Voc.	
Trigonometry		Home Ec. Gen., Voc., Boys	
Okla. History & Civics		Free Hand Drawing	
History Modern, General, American, Ancient & Modern, European, World, Latin American		Safety Education	
		Driver Education	
		Aeronautics	
Civics		Photography	
Economics		Fundamentals Radio, Auto, Mech., Shopwork, Machine, Elec.	
Sociology			

WORK SHEET, Cont'd.

Subjects Offered in High School

Subject	Units	Subject	Units
Government		Commercial Law	
International Problems		Business English	
Consumer Education		Bookkeeping	
Conservation of Nat'l Res.		Shorthand	
Latin I, II		Typing	
French I, II		Everyday Business	
Spanish I, II		Psychology	
German I, II		Music Theory, Applied, Apprec.	
Physics		Health & Phys. Ed.	
Chemistry		Mechanical Drawing	
Geography Physical, Com.		Industrial Arts	
		Arts and Crafts	
		TOTAL ACCREDITATION	

ten to twelve or nine to twelve instead of seven to twelve as quoted in Good's definition.

Reviews of Similar Studies. In preparation for a study of this type, similar studies were perused. It was found that no exact study of this type was available, but that similar studies that included samples of the whole high school system of Oklahoma were available. Following is a brief outline of other studies:

Marion E. Franklin (29) conducted a study in 1931 to determine the school enrollment, the number of industrial arts teachers, the teacher combinations of industrial arts teachers, the number of schools offering industrial arts courses, and other information of a similar nature. Mr. Franklin made a survey.

A similar survey was made in 1924 by Tearl Singleterry (30) to determine the grades in which industrial arts was offered, size of classes, period lengths, cost of shop equipment, and qualifications of industrial arts teachers.

In 1946, Henry C. Tinkle (33) made a survey and documentary study divided in three divisions: Industrial arts in the Junior high school; Industrial arts in the North Central Association; and accredited high schools not members of the North Central Association. This study was concerned with the enrollment, size of classes, teacher load, teacher salaries, value of shop equipment, value of mechanical drawing equipment, teachers degrees, number of units offered, and length of periods.

A report of the small high schools of Oklahoma as defined in this study has never been made before. Studies listed are mentioned because they are similar in their organization.

Predicted Results of the Investigation. Those persons responsible for the school program may be confronted with the following questions: How many small schools offer courses in industrial arts? How large should a school be in order to offer industrial arts? What other subjects are offered in a small school? What are the industrial arts teacher's salary scales? What is the teaching load of the industrial arts teacher in the small school? What is the average number of students industrial arts teachers instruct? It is the desire of the writer that the answers to these questions and many more can be found in this study with a minimum amount of search.

Analysis of the Plan for Presenting the Material. This study was organized in compliance with an outline. Chapter I gives the reader an insight into the purpose and organization of the study, methods of research, certain definitions common to the study and a certain background. Chapter II furnishes a brief history for the industrial arts program, and its connection with the rest of the teaching fields in the small high school. Chapter III contains certain definitions for industrial arts and recommended philosophies along with the writer's accepted definition and philosophy.

Chapter IV is divided into a study of two areas: the status of small high schools, and the status of the industrial arts teacher. Chapter V includes a summary of the preceding chapters, findings, conclusions indicated by the study and recommendations concerning the findings, and problems for further study that would implement the industrial arts program.

This study should make available data which has not been organized before in a manner by which a busy administrator could get a clear picture of the industrial arts program without a great amount of research.

CHAPTER II

HISTORY OF THE HIGH SCHOOL IN OKLAHOMA

Primitive man went in search of food, clothing and shelter to satisfy a need. As civilization became more complicated, man's list of wants started to multiply in number. Once man had satisfied his physical requirements, his next attempt to overcome the elements about him was to pass to the next generation a record of his progress. This was his first educational matter, written or unwritten. Today, one of man's greatest educational problems is how to best pass this record of past experiences to the next generation in the most humane method possible. Industrial arts is one phase of general education that has taken up the crusade "of orienting everyone, especially in regard to the pertinent aspects of production, consumption and recreation." (13, page vii)

Part A

A Brief History of Early Industrial Arts

The first manual training high school was the Manual Training School of Washington University, established in 1879, in the city of St. Louis, Missouri. Dr. C. M. Woodward organized this school. This followed a long period beginning about 1868 when certain educators were becoming cog-

nizant of a new field in education. Bennett (2, page 337) best describes Dr. Woodward's views on early manual training.

> Professor Woodward's vision was of shopwork being placed on the educational plane with other school subjects. He saw the mechanic arts analyzed, pedagogically organized and taught under the guidance of the same principles that have influenced methods of teaching sciences, mathematics and even the languages. The mechanic arts so taught were not to teach trades. (Thus he avoided the current fear in teaching shopwork in schools.) The products were to have no market value; therefore the shop must be supported in the same way as science laboratories.

Manual Training at Public Expense. On March 3, 1884, the first manual training high school to be supported at public expense was opened in Baltimore, Maryland. This was followed by the Philadelphia Manual Training School, the second high school of this type to be supported at public expense, which was opened in September, 1885. Concerning this period, Bennett (2, page 360) states as follows:

> The decade from 1880 to 1890 was a period of marked progress and of heated discussion. The new type of high school was a popular success from the first. It filled a recognized gap in the American school system; it met a real need. Yet, in doing so, it aroused the active and sometimes highly emotional opposition of some of the more conservative educators who did not recognize the value of manual training in general education and feared the breaking down of the academic standards already established.

Champions of the manual training movement were Francis A. Walker, President of Massachusetts Institute of Technology, Dr. Emerson E. White, Superintendent of Public schools, Cincinnati, and Dr. Calvin M. Woodward, Dean of the Poly-

technic School, Washington University. Among the opposition were such men as Dr. William T. Harris and A. P. Marble, Superintendent of Schools, Worchester. Dr. Woodward was a competent speaker and always carried his fight to the opposition.

General High Schools Introduce Manual Training. The St. Louis Manual Training School enjoyed such success that in many places the general high schools began the introduction of shop work courses such as woodwork and some drawing. The first high school to take such action was the one at Peru, Illinois, in 1884. (2, page 389) During the next ten years from 1883 to 1893 more than fifty cities in the United States introduced manual training. This number had more than doubled by 1900. (2, page 397)

Secondary Schools Reorganized. In 1901 the Boston courses in manual training for the seventh, eighth and ninth grades were published and many schools introduced manual training or manual arts in the upper grammar grades. Upon the recommendation of various educational committees such as the Committee of Ten appointed by the National Council in 1892, and the Committee of Six-Year Courses appointed by the Department of Secondary Education in 1905, a change was brought about in the high schools. These two movements were made in a joint effort to keep the pupils in school that were dropping out during these grades. This reorganization introduced the junior high school which includes the seventh, eighth and ninth grades.

There are about 28,973 secondary schools in the United States today. In these secondary schools industrial arts has found a place and is growing in popularity.

Part B

History of the Early Development in Oklahoma

The ordnance for the government of the Northwest Territory in 1787 provided that Section 16 in every township be set aside for the maintenance and support of a public school system. (25, page 15) In 1848, Section 36 was added to Section 16 for the support and maintenance of a common school system in all the public lands of the United States, out of which states might be erected. Oklahoma was opened to settlement in 1889, under that law.

Conditions Prior to 1889. Prior to the opening of Oklahoma Territory for settlement in 1889, the record of her educational achievements is very fragmentary. The present state of Oklahoma was then known as the Indian Territory. The eastern half of this undeveloped domain was occupied by the five civilized tribes of Indians: Choctaw, Chickasaw, Cherokee, Creek and Seminole, who had received title to certain large tracts of land from the federal government in exchange for their vast holdings in their old homes east of the Mississippi River. Here, in Oklahoma, they settled down to their old tribal customs of government and were living in their own particular way. The beginning of their school system dates back to 1836, which was about the time of their

arrival in Oklahoma. Their schools grew in number very slowly, but in 1889 there were approximately three hundred and twenty-five primary schools and twenty-five academies and seminaries. There were also thirty-five mission schools established among the five tribes by the various Christian churches. (26, page 223)

Status of Western Territory. The western part of the territory was made up of the blanket Indian type with no school system, no educational spirit, and no civilization according to the white settlers interpretation. The federal government and the churches did educational work among them, and in 1892 there were as many as twenty boarding schools and day schools supported by the United States Government. Mission schools in this part of the country afforded instruction for about five hundred Indians. (26, page 224)

Status of the Whites. In the eastern part of the territory the few schools for white settlers prior to 1889 were all supported by local subscriptions and were confined to village settlement. In the western part of the territory there were no white settlers prior to 1889. (26, page 224) When the Cherokee Strip was opened, President Cleveland, under the direction of Congress, added Section 13 for the support of the state educational institutions, and Section 33 for the erection of public buildings for the state. This gave Oklahoma 1,413,862 acres of land for the common or district schools.

The Organic Act. The Organic Act was not passed by Congress until 1890, more than a year after the opening, and during this period the people were without laws, except the original statutes of the United States. The Organic Act provided for a system of free public schools modeled after that of the state of Nebraska. (26, pages 225, 226)

The Enabling Act. The National Government, in the Enabling Act, gave Oklahoma $5,000,000.00 in lieu of Section 16 and 36, which could not be had in the Indian Territory section of the state. The total monetary value for schools was estimated at $38,277,240.00 at this time. This amount can be increased but can never be decreased. Five per cent of the amount gave the children of the common schools $1,913,862 per year, when this state was organized in 1907. (25, page 16)

The State Superintendent. Under the state constitution the State Superintendent of Public Instruction was made an executive officer of the state, and the Department of Education was organized as a branch of the executive department of state government. (25, page 15) Inasmuch as the only schools in the old Indian Territory were in incorporated towns, forty-one counties were practically without schools. The department of education had the responsibility of organizing new schools in these counties. This organizing constituted the bulk of transactions completed by the new office immediately following its formation.

First Manual Training School in Oklahoma. According to a thesis by Teague (32, page 22) a resume of the teaching experiences of H. F. Rusch, written by Mr. Rusch, is quoted and discussed by Dr. DeWitt T. Hunt in an unpublished paper entitled, Industrial Arts in Oklahoma, Past, Present and Future, which states industrial arts entered the schools of Oklahoma in the following manner:

> The first manual training shop organized in the state of Oklahoma was at Jones Male Academy, four miles out of Hartshorne (Indian Territory) in the fall, September, 1903, for the Choctaw and Chickasaw Nations, a division of the five civilized tribes--
>
> Oklahoma City added manual training to its high school curriculum in the fall of 1904 in the basement of the high school building. Mr. Funk, the teacher, with no teaching experience, inaugurated the work.

Manual Training Teachers Organize. The first organization of the manual training teachers, The Oklahoma Manual Training and Drawing Association, met and was organized in December, 1909. This was at a general meeting of the State Educational Association, where all departments as follows had their meetings: Music, Primary, Rural Schools, Kindergarten, Libraries, History, County Superintendents, Grade Teachers, Drawing, High Schools, Patrons Club, City Superintendents, Science Department, Higher Learning, Business Training, and Modern Language. (25, pages 35, 48) Strong manual training departments were established in all state normal schools and teachers were encouraged to take the courses offered where they would be better prepared for teaching in the public schools. (24, pages 84-86)

Department of High School Inspection Created. The Oklahoma Statutes provided for the creation in the office of the State Superintendent of Public Instruction, the Department of High School Inspection in 1919, which had the exclusive and sole authority to define official standards of excellence in all matters, relating to administration, course of study, instruction in the high schools of the state, and accredit those schools in which the specified standards were maintained. The principal duty of the high school inspector was to visit all schools in the state of Oklahoma doing high school work, consult, assist them in standardizing their schools and affiliating them with the state institutions of higher learning. (21, page 4)

Standards for Accrediting. The standards for accrediting secondary schools in Oklahoma and throughout the nation were influenced mainly by entrance requirements of colleges and universities. In the past, the preparation of students for college was considered the major function of the high school. The accreditation of high schools was done through the colleges and universities when standards were first established. The University of Oklahoma was responsible for the accrediting of secondary schools in Oklahoma until 1919 at which time the central accrediting agency was transferred to the State Department of Education through legislative action. (28, page 40)

High Schools Assume Responsibility for Standardizing. In may, 1916, the High School Conference passed the following resolution: (21, page 5)

> The accredited high schools of Oklahoma will accept the rating given high schools by the high school inspector and will require all applicants from non-accredited high schools to pass a thorough-going examination for all credits granted.

The authorized representatives of the higher educational institutions of Oklahoma, who met December 1, 1916, passed the following resolutions: (21, page 5)

> (1) No student entering our schools shall be given a greater number of credits toward graduation than is allowed to the school by the latest bulletin sent out by the university.
>
> (2) No credit will be given for work in non-accredited schools or in non-accredited subjects, except upon a thorough examination in those subjects in which credit is sought.

The above information is furnished to show that the high schools of the state shared their responsibility, and did not wait for the State Department of Education to force them to accept their policies. It was at this time that higher educational institutions removed the barriers to industrial and vocational freedom in high school courses, and agreed to accept students from all accredited high schools including those courses. (21, page 6)

Study of Standards. The State Department of Education realized that an important function of a state agency should be stimulation toward continuous growth and improvement, not merely inspection and admission to membership. Mere accredition was not sufficient; it was simply one step in a continuous process. Since less than half of the high school

graduates were entering college, the Department of High School Inspection recognized the desirability of modifying and changing policies, regulations, standards and procedures for accrediting high schools in keeping with the best interest and needs of boys and girls in the high schools of Oklahoma. The course taken by the Department of Education is best described in an Oklahoma state publication. (28, page 42)

> The first definite action looking toward a study of standards was taken in February, 1932, when the National Association of Officers of Regional Associations entered into a cooperative study of secondary school standards. Following a conference with George F. Zook, then United States Commissioner of Education, the six regional associations accepted the proposals for a "Cooperative Study of Secondary School Standards and Accrediting Procedure."

The purpose of the study was to find the characteristics of a good secondary school, the practicable means and methods that may be employed to evaluate the effectiveness of a school in terms of its objectives, the means and processes used to develop a good school into a better one, and how regional associations can stimulate secondary schools to continuous growth. The Department of High School Inspection assumed the responsibility of leadership in promoting the use of this cooperative study with the purpose in mind of improving regulations, standards and procedures for accrediting Oklahoma high schools. This study was culminated by a publication in provisional form, of the 1938 edition of the Evaluative Criteria.

Part C

Current Industrial Arts Program

In the sixty-two years that Oklahoma has had any form of public school system, the state has had as many as eight hundred and seventy-four accredited high schools. According to the Annual High School Bulletin (22, page 3) there were eight hundred and twenty-one accredited high schools for the year 1950-1951. The trend has been towards consolidation, therefore the number of schools will probably decrease for a number of years. By consolidating, the schools have more funds available for producing a larger physical plant.

General Policies for Accrediting High Schools. The Annual High School Bulletin (22, pages 30, 31) contains certain general policies and regulations for accrediting high schools. A brief summary of these general policies and regulations are presented as follows.

A visit is made to each school in Oklahoma, if possible by a high school inspector, for the purpose of obtaining a firsthand view of the program the school has and its operation. Accreditation is based primarily on scholarship, instructional conditions maintained in the elementary grades, stability and permanency of the school organization, and the type of instruction rather than the number of units offered. New schools are not accredited if fewer than one hundred

pupils are enrolled in high schools and the elementary grade contains less than three teachers.

Small High School. The small high school is not defined but is taken into separate consideration in the Annual High School Bulletin, (27, pages 26, 27) Some statements of policy concerning the small school are quoted.

> The following factors should be considered in deciding what subjects are to be included in the curriculum: (1) the financial ability of the district, (2) the needs of the individual pupils, (3) the demands of the community, (4) the number of pupils in high school, (5) the number of teachers available, (6) the building facilities, (7) the books, supplies and equipment available, and (8) the condition of the elementary department.
>
> The curriculum should contain vocational and pre-vocational courses wherever possible. Such courses as home economics, vocational agriculture, industrial arts, etc., are practical and valuable additions, which should be made to the usual narrow and academic offerings of the small high school. These courses are relatively expensive but, if a sufficient number of pupils are interested, the per capita cost may be greatly reduced.

Teacher Certification. The certification requirement of teachers is one method of up-grading teachers in high schools. The present policy of certification is published in Laws and Regulations: (23, pages 1-3)

Requirements for all Certificates

1. To receive a certificate an applicant shall:
   a. Be at least twenty years of age or a graduate of an accredited four-year college or university.

b. Have college credit in American history and government and Oklahoma history as a part of his required general education. The requirement in Oklahoma history may be met by submitting evidence of credit in a one-semester high school course or by state examination. In the case of an applicant for an initial temporary certificate, the requirement in Oklahoma history may be waived for one year.

c. Supply all of the necessary information required on the official application blank.

d. File a certified transcript of the college record, including a summary of the high school record, as a part of the application.

e. File a certificate from a licensed physician that the applicant is in good health and free from any communicable disease.

2. The application for a certificate shall be accompanied by a statement by the official responsible for the direction of teacher education in the respective institution of higher learning regarding the applicant's character and general fitness to be licensed as a member of the teaching profession.

Standard Teaching Certificates

1. The granting of life certificates to teach in Oklahoma shall be discontinued.

2. In lieu of the Life Certificate there shall be issued the Standard Teaching Certificate upon application based upon the same requirements effective for the Life Certificate at the time of the adoption of these regulations. Such standard certificate shall be valid for a period of five years from the nearest thirtieth day of June preceeding or following the date of issuance, provided that no standard certificate shall be issued on less preparation than is required for a standard bachelor's degree.

3. The validity of a Standard Teaching Certificate shall be regularly extended upon application for terms of five years by proper endorsement by the State Board of Education, provided:

a. That evidence is submitted of at least three years of satisfactory school experience during the last five-year period of validity of the certificate.

b. That the Standard Teaching Certificate has not been invalid for more than five years.

4. If the applicant cannot meet the requirements for the extension of the validity of a Standard Teaching Certificate, he must meet the then existing requirements for an original certificate.

Temporary (One-Year) Teaching Certificates

1. The Temporary (one year) Secondary Teaching Certificate shall be issued upon application on a minimum of ninety semester hours of college credit including at least eight semester hours of college credit in professional education courses that will apply toward fulfilling the professional education requirements for the Standard Secondary Teaching Certificate.

2. Temporary (one-year) teaching certificates shall be renewed upon application for the following school year, provided:

a. The holder of the certificate has completed a minimum of eight semester hours of residence college credit earned within a period of fourteen months from the beginning of the school fiscal year for which the certificate was issued; and,

b. That such credit shall apply toward fulfilling the requirements for the Standard Teaching Certificate; and,

c. That the total number of semester hours of college credit applied toward meeting the requirements for a certificate shall include not less than eight semester hours of college credit in professional education.

In addition, there are certain general requirements

(23, page 17) to be met by the industrial arts teacher.

(Semester Hours)

EDUCATION COURSES:	21
COURSES IN TEACHING FIELD:	
Bench Woodwork	4
Cabinet Making	4
Wood & Metal Finishing	2
Industrial Arts Design	2
Care of Shop Equipment	2
Working Drawings	2
Machine Drawings	2
Architectural Drawing	2
Electives in Shop Work	4
TOTAL	24
OTHER REQUIRED COURSES:	
English	8
American History and Government	6
Oklahoma History or ½ unit in high school or 70% in State examination)	2
MINIMUM IN ALL SUBJECTS	124
MINIMUM DEGREE	A. B. or B.S

Oklahoma Industrial Arts Association. Every department of teachers that take pride in their profession are organized into a professional group. The Oklahoma Industrial Arts Association serves this purpose in Oklahoma. The association was organized in 1943 when industrial art teachers of Oklahoma were attending the First Annual Industrial Arts Clinic at Lake Carl Blackwell, Stillwater. Regular membership is held only by industrial art teachers and industrial art supervisors. College students majoring in industrial arts may hold student membership cards. This organization is affiliated with the American Industrial Arts Association on a national level. The American Industrial Arts Association was organized "to derive, define and foster the professional ideals of industrial arts as general education." (20, pages 161, 162) This association is a

department of the National Education Association and is a member of the American Council on Education.

Evaluative Criteria. A recent 1950 Evaluative Criteria (5, pages 123-130) places major importance on the following points for evaluation in industrial arts.

I Organization
II Nature of Offerings
III Physical Facilities
IV Direction of Learning
V Outcomes
VI Special Characteristics of Industrial Arts.

This is the first time the North Central Association has taken a specific evaluation of the industrial arts program.

According to a 1946 thesis by Tinkle (33, page 63) there were four hundred and nine industrial arts teachers at that time in the Oklahoma public schools, and a teacher shortage existed which was aggravated by poor pay, and the fact that teachers were not being trained fast enough. Many teachers were going into industry where pay was better. Since 1946 there have been two blanket increases in salary which total eight hundred dollars. After the first pay increase of five hundred dollars, Teague, (32) in a recent thesis, reports that there were five hundred and thirty-four teachers in 1949. This is an increase of one hundred and twenty-nine teachers. The results of the three hundred dollar pay increase cannot be determined at this early date.

Tinkle also states that the following conditions exist in the public school industrial program:

1. Teachers are teaching with little preparation.

2. Industrial arts is being taught in more small schools than previously.

3. The class enrollment is being reduced, thus a teacher can give some individual instruction.

4. The general shop is recommended for schools which offer but one or two units of credit in industrial art courses.

More progress may have been made along some of these lines recently, but any progress that is made in a state industrial arts program is dependent on the philosophy adopted by that program.

CHAPTER III

A PROPOSED PHILOSOPHY OF INDUSTRIAL ARTS FOR SECONDARY SCHOOLS IN OKLAHOMA

Many phenomena have existed since time began, but man evolved through many generations before discovering many of those things. This has been the case with industrial arts. Many of the objectives of industrial arts have existed practically as long as man. At an early date man learned to hunt for food, self-protection and was alert to improvement of his way of life by changing his environment. This was such a simple way of life that the father and later the chiefs of the tribes taught the children these duties. Then came the advent of fire and the many discoveries that accompanied the discovery. Teaching became too difficult for the fathers and the chiefs, so the children were placed under the supervision of the teachers, who became specialists in their line of work. (15, page 179) Ancient teachers, as well as modern teachers, had certain objectives and means for accomplishing those objectives. Today, no teacher can do a good job of teaching without having certain definite aims and a plan for reaching those aims.

Part A

A Background for Industrial Arts in American Schools

Industrial arts is thought of as a new area in education, but it is the oldest form of education known to common man. Industrial arts dates back more than 2,000 years before the birth of Christ. The stone tablets recently excavated at Ur in Chaldea reveal the laws under which young people learned how to do things. The Code of Hammurabi provides another example of early practices. (1, page 12) Formal schooling did not adopt industrial arts at first because the people that attended these schools did not feel a need for this type of education. Common laborers were not able to attend these schools, and common labor was looked down on because the man of means and money did not toil with his hands. However, the ancient Jews taught their children about Jehovah, and secondly, instruction in a trade or other vocation. (1, page 13) The early Christian monks, in following the teachings of Jesus and the Disciples, decided that labor should be required of everyone. Aside from the monasteries, apprenticeship became the chief educational institution for the middle class youth. The master teacher took as many pupils as he could keep, inform and teach. (1, pages 21, 22)

The Rennaissance. The invention and early development of the art of printing, the revival of classical learning which included the teachings of Aristotle, Plato and Socrates; and the protestant reformation in Germany, beginning early in the sixteenth century, changed the

teaching methods. (1, page 30) Martin Luther advocated that the state take up education and divorce it from the church. Luther's curriculum would have retained the church teachings and added other courses in agreement with the state. Rabelias was in favor of the church keeping the school but broadening the curriculum. These teachings were not as important at that time as were their followers who studied their works. (1, page 31) At the opening of the seventeenth century, educational thought was affected by the philosophical writings of Francis Bacon. Bacon advocated that man search the present and not the past for his teachings. Bacon is first credited with using the term "manual arts." John Amos Comenius advocated that both sexes attend school. Education was to be divided into four periods of six years each: infant school in the home for the first six years; venacular school in every village from six to twelve years; secondary school in every province for selected students from twelve to eighteen years of age; and a university in every kingdom for continuing education beyond the age of eighteen years. (1, page 37) During the rennaissance, many of the present day objectives were suggested by the leading reformers of education of that period. Comenius suggested vocational guidance, John Locke saw that one value of handwork was worthy use of leisure time, Sir William Petty wrote a pamphlet on education in 1647

with an aim of consumer appreciation. Jean Jacques Rosseau, an educational reformer about the middle of the eighteenth century, advocated that a boy learn a trade for an appreciation of others and not for making a living. These objectives could readily be added to those of primitive man.

Recent Foreign Developments. Because of the industrial revolution in Europe, in the early part of the nineteenth century, there arose a need for trained personnel. This brought about a period of philanthropy. Industrial schools under many different names appeared, mechanic institutes, industrial lyceums and some schools took the names of their founders. Most prominent among these schools were Pestalozzi's orphanage, where experiments were carried out by trying to link handcraft with formal training, and Fellenberg's Academy, which represented administration and organization in school systems. Pestalozzi's great contribution was his methods of teaching. (1, pages 128-126)

The Russian plan of tool instruction was inaugurated by Della Vos at the Imperial Technical Institute of Moscow, Russia, in 1868. The purpose of this school was to train engineers and skilled workers for building railroads. This was the first attempt to organize vocational industrial education for groups as compared with individusls under the apprenticeship plan. Some production work on

real jobs and articles existed, but most of the products were of no intrinsic value and none contained the element of boy interest. (6, page 43)

A distinctive type of manual training in Germany was developed by Dr. Waldemar Goetze. This type of manual training was characterized by a number of features, such as making articles of intrinsic value, individual instruction, methodical organization of content, teachers podagogically trained, student interest capitalized on and the learning experience was emphasized as much as the content. (6, page 45)

Sweden had a social movement in education known as sloyd. The social aim was to help raise the moral standards of boys, which were thought to have deteriorated with the advent of the factory system of production and consequent decline of home sloyd. Training was planned to give directed expression to the normal activities of early youth and to give training in certain desirable habits.

Other foreign countries had forms of early industrial arts forerunners, but they did not affect the present industrial arts program in the United States as the Russian, German and Swedish movements. These three movements had a marked influence on the evolving philosophy of industrial arts in the secondary educational program of the United States.

Industrial Arts in American Secondary Schools. Industrial arts in the United States is not so old that it had a chance to adapt an old system, but was formulated from fairly recent beliefs and practices. Historically, industrial arts in public education has had its greatest development thus far on secondary school levels. Here it has passed through two, somewhat well-defined, periods of professional growth, and is now in the midst of a third. (18, page 13) The period of manual training began about 1872, when C. M. Woodward started a workshop in Washington University. This development came about when Professor Woodward found, by chance, that his students knew very little about tools. This was the first instance in which shopwork was taught without a vocational objective, and simply for its value in education. (2, page 318)

Dr. John D. Runkle, president of the Massachusetts Institute of Technology, observed the Russian exhibit at the Centennial Exposition in Philadelphia in 1876. Here, Dr. Runkle found the answer for his engineering students who had no practical shop knowledge. Shops were organized at the Massachusetts Institute of Technology as laboratories for the engineering students. It was found that engineering students who had shop courses added to their academic work were better trained and better fitted for any occupation which they might wish to follow. (8, pages 10, 11)

Professor Woodward outgrew his facilities in 1887,

and under the influence of a new vision in shopwork started the Manual Training School of Washington University. This new vision was undertaken after a study of the Russian plan of manual training.

Nature of Manual Training. The nature and influence of manual training on industrial arts is quoted from Friese: (6, pages 46,47)

> In the St. Louis school, the teaching of mechanical processes was carried on through the media of exercises and models of some intrinsic value but frequently lacking in boy interest. In this respect the courses developed were much like those of the Russian plan. The making of articles of greater interest to the students was a later development, coming chiefly, as it did, from the sloyd and "manual arts." Manual training courses for a considerable period retained a series of set exercises (to be followed in a sequence) as the form of course organization. Recognition of individual differences was also of later development. The handwork was largely in wood, and some metal, and in mechanical drawing.
>
> Influences of Manual Training. The following influences of manual training were felt for a long time, and some are still felt: The philosophy of transfer of training, or ability to transfer skills and habits from one subject to another, either within the field of manual training or from it to academic fields, was an accepted but unproved aim.
>
> Manual training was conceived largely as woodwork and at times as some metal work.
>
> A course of study was formed on the basis of series of set exercises or problems followed in sequential order.
>
> The original lack of pupil interest in the articles made was not sensed and corrected for a number of years. Articles of interest to pupils and provisions for individual differences began to appear during the end of the period in which educational handwork was called manual training.

Manual Arts. The manual arts period is best described by Morris M. Proffitt: (18, pages 13, 14)

> The second period of development was named "manual arts" by Bennett in 1894. While the emphasis was still on skill, the philosophy was extended to include the making of both useful and well-designed articles, still principally by hand. The introduction of Sloyd work from Sweden during 1888 in Boston by Larsson had a distinct influence on American practice. Following this, considerable work was developed in the schools in arts and crafts. This, of course, was wholesome, but all the time there was something going on in American life that was being missed by school programs, namely, the phenomenon of industry itself.

Industrial Arts. An article by Robert A. Hardin gives an insight to the third period: (16, page 224)

> Charles R. Richards was perhaps the first to suggest the term "industrial arts," which he did in an article in the Manual Training Magazine in October, 1904, and so named the third period in industrial-arts development. In refering to this change, he stated that "we are rapidly leaving behind the purely disciplinary thought of manual training.... Now we are beginning to see that the scope of this work is nothing short of the elements of industries fundamental to modern civilization."

Among those that felt the influence of industry in the school program was Bonser, who wished to retain that which was good about the old, but add certain new concepts to the program. Industrial arts began to call for a diversity, rather than a specialization of skills. Industrial arts became a part of general education.

Part B

The Purposes of Industrial Arts in Oklahoma High Schools

Oklahoma is a very young state. During her short lifetime, from 1889 to the present day, the state has evolved through many stages, but more quickly than most of her neighbors. Because the Indian is a minority race and because other nationalities came to make Oklahoma their homes, no race of people dominated the culture. Therefore, the educational program adopted those established educational values it desired and rejected the undesirables. With the early advent of the oil industry a wilderness became an industrial area overnight, and an Indian's ancient culture orientated itself to the melting pot of which it had become a part. To keep step with the environment, educational leaders felt a need for a change. It was only natural that an industrial arts program should come into its own.

Definitions of Selected Terms. To promote understanding, the following definitions of industrial arts are discussed.

In the schools, industrial arts should have a place that is equal to its importance outside of school. In their everyday lives people are constantly coming in contact with products of industry, but they are generally completely unaware of how well the product is made, how beautiful the product is, or what it is made from. Industrial arts in a school program attempts to bring industry into the school

in a laboratory form, not for the skill that it teaches, but as an insight into the related subjects to an industrial process. Bonser and Mossman define industrial arts (3, page 5) in their book Industrial Arts for Elementary Schools, as a part of general education:

> A study of the changes made by man in the forms of materials to increase their values, and of the problems of life related to these changes.

Industrial arts is not a special subject, but a part of general education, and as such must foster a portion of the aims of general education. By placing industrial arts in the public schools an attempt has been made to analyze industry in terms of general education. Gordon O. Wilber stresses this point (13, page 2) in Industrial Arts in General Education:

> Industrial arts will be defined as those phases of general education which deal with industry - its organization, materials, occupations, processes, and products - and with the problems resulting from the industrial and technological nature of society.

No academic subject has been able to stress exploration as industrial arts. It emphasizes exploration in many areas of industry with little emphasis on skills. The product is the student and the subject is a wide sample of industry. John F. Friese (6, page 7) defines industrial arts in terms of its relationship with vocational industrial education:

> One division of the "practical arts" with character and purposes associated with general education. To the extent that the exploratory or occupation-finding aim is

> emphasized, it is a much-needed prerequisite of vocational industrial education. Each must complement the other in the selection of and preparation for entrance upon wage-earning trade and industrial pursuits. It also has other important contributions to make toward the general education of all students irrespective of their future vocations.

Objectives for Industrial Arts. Definitions are meaningless unless they are expanded in terms of objectives. The present secondary school system was analyzed by a commission appointed by the National Education Association for the purpose of reorganizing the high school. The conclusion of this report (17, page 5) was printed in 1928. This commission was organized because it was felt that the secondary schools were not serving the needs of youth. The commission analyzed and established the seven cardinal principles of secondary schools as a guide to general education. They are as follows:

1. Health
2. Command of fundamental processes
3. Worthy home membership
4. Vocation
5. Citizenship
6. Worthy use of leisure time
7. Ethical character.

Gordon O. Wilber in Industrial Arts and General Education (13, page 15) sums these objectives into three principal aims:

1. To transmit a "way of life" an important feature of our way of life in the fact that it is democratic.

2. To improve that way of life, the most feasible method being by training for effective critical thinking.

3. To meet the needs of individuals in basic aspects of living.

If the objectives of industrial arts are to be defensible, it is essential that a direct relationship exist between them and the objectives of general education. Wilber makes a plain and defensible position for the industrial art program: (13, pages 42, 43)

1. To explore industry and American industrial civilization in terms of its organization, raw materials, processes and operations, products and occupations.
2. To develop recreational and avocational activities in the area of constructive work.
3. To increase an appreciation for good craftsmanship and design, both in the products of modern industry and in artifacts from the material cultures of the past.
4. To increase consumer knowledges to a point where students can select, buy, use and maintain the products of industry intelligently.
5. To provide information about, and - insofar as possible - experiences, in order that students may be more competent to choose a future vocation.
6. To encourage creative expression in terms of industrial materials.
7. To develop desirable social relationships, such as cooperation, tolerance, leadership and followership, and tact.
8. To develop a certain amount of skill in a number of basic industrial processes.

Louis V. Newkirk feels that all grades should have the same objectives but that a different emphasis should be placed on the aim or objective as the grades change. Industrial arts is also classed as a part of general

education in the following objectives listed by Newkirk: (10, pages 7-13)

> Develop the ability to plan and build projects using a variety of tools and construction material in a workmanlike manner.
>
> Give experiences that will increase understanding of modern industry and that will lay the foundation for and help determine vocational interest.
>
> Develop the ability to read and make working drawings, charts and graphs.
>
> Develop the ability to recognize quality and design in the products of industry.
>
> Develop the ability to maintain and service in a safe and efficient manner the common products of industry.
>
> Provide an objective medium for expression in mathematics, science, language, arts and social sciences.
>
> Develop an interest in crafts as a valuable medium for creative expression in leisure time.
>
> Give experiences that will develop social understanding and the ability to work effectively as a leader or as a member of the group.

The objectives of industrial arts should not be vague and remote. They should be thought of in terms of specific general educational changes in a pupil. A committee composed of ten leading industrial arts men over the United States made a choice of the following objectives for industrial arts. (19, page 51) The committee decided that a given situation may add to the list they have approved.

> 1. Interest in Industry.-To develop in each pupil an active interest in industrial life and in the methods and problems of production and exchange.
>
> 2. Appreciation and Use.-To develop in each pupil the appreciation of good design and workmanship, and the ability to select, care for, and use industrial products wisely.

3. Self-discipline and Initiative.-To develop in each pupil the habits of self-discipline, and resourcefulness in meeting practical situations.

4. Cooperative Attitudes.-To develop in each pupil a readiness to assist others and to join happily in group undertakings.

5. Health and safety.-To develop in each pupil desirable attitudes and practices with respect to health and safety.

6. Interest in Achievement.-To develop in each pupil a feeling of pride in his ability to do useful things and to develop worthy leisure-time interests.

7. Orderly Performance.-To develop in each pupil the habit of an orderly, complete, and efficient performance of any task.

8. Drawing and Design.-To develop in each pupil an understanding of drawings, and the ability to express ideas by means of drawing.

9. Shop Skills and Knowledge.-To develop in each pupil a measure of skill in the use of common tools and machines, and an understanding of the problems involved in common types of construction and repair.

A Policies Committee of Oklahoma Teachers representing the Oklahoma Industrial Arts Association determined that the following objectives should govern the industrial art program in Oklahoma. (20, pages 161, 162)

(1) Industrial Arts is complementary to other school subjects and provides opportunities to apply knowledge learned in other school subjects.
(2) Develops an appreciation of applied knowledge and skills.
(3) Provides a knowledge of industrial drawing, the language of industry, and methods of expressing ideas by means of drawings.
(4) Contributes a later vocational efficiency.
(5) Stimulates students' knowledge and appreciation of good design.
(6) Instills a satisfaction in personal creative achievement.
(7) Develops the ability to analyze a job into its processes and organize them into correct procedure.

(8) Contributes to consumer knowledge and induces an appreciation of the value of industrial materials and the need for their conservation.
(9) Trains in industrial and home safety (including fire prevention)
(10) Acquaints students with industrial information and induces a recognition of the standards of industrial attainment.
(11) Develops avocational interests.
(12) Trains individuals to be more resourceful in dealing with the material problems of life.
(13) Stimulates correct attitudes toward an orderly shop and home and their environment.
(14) Aids in making avocational choices.
(15) Develops qualities of leadership.
(16) Develops cooperative attitudes in work habits.
(17) Develops an appreciation of the divinity and importance of the occupation of one's neighbor.

Each of the named objectives stress that the industrial art program is only effective when it advances some portion of the objectives of general education. A set of objectives that are exact cannot be arrived at, but must be formed for each and every situation. Each teacher must formulate his own objectives.

Part C

Personal Philosophy

In each small school in Oklahoma that offers industrial arts there will be a certain teacher's philosophy, good or bad. The industrial arts teacher can improve his philosophy by writing down each objective and analyzing it to see if the objective accomplishes what it should for the community that he serves. Not only should the

objectives be written, but there should also be a program or method for accomplishing these objectives.

Accepted Definition. Industrial arts is a part of general education, and as such must be interpreted in that sense. Industrial arts is a part of our everyday life, both industrially speaking and in the different things that are simple and can be accomplished in the home. Industrial arts is a part of the past as well as the present, and will be a living part of the future. Bonser's first interpretation of industrial arts is a definition every teacher should know: (3, page 5)

> A study of the changes made by man in the forms of materials to increase their value, and of the problems of life related to those changes.

Accepted Objectives. Those objectives (20, pages 161, 162) that were accepted and formulated by the policies commission of the Oklahoma Industrial Arts Association are recommended as those objectives which should dominate the small high schools of Oklahoma. Where it is possible to equip a shop, it is felt that in the small high schools emphasis should be placed on objective (4), contribute to later vocational efficiency. This is an objective which has permeated throughout the high school curriculum. Not only does industrial arts provide for later vocational efficiency, but practically every course in high school adds to this phase of education. Industrial arts merely fits into the modern school program to satisfy the many needs of the child in the completion of his education.

Controlling Conditions. The limiting conditions of an industrial arts program in a small school are sometimes funds. Some schools have a certain type of industrial arts program because a former teacher already had a program functioning. Some programs are such because the administrators of a school wanted that type of program. Many Oklahoma shops are following their present program because the teachers are inadequately prepared to instigate a different program for industrial arts. Some schools have no shops at all because they are unable to obtain trained teachers. In a few high schools the controlling factor is the other course offerings, such as trade and industries. For those schools industrial arts is usually a pre-vocational course. The main limiting factor should be the type of community the school is to serve, and the individual schools educational objectives.

CHAPTER IV

THE SMALL HIGH SCHOOL

Listed in the previous chapter are a number of objectives of leaders in the field of industrial arts and their relations to the objectives of general education. This chapter will give the status of the industrial arts program and furnish information on the teachers of industrial arts in the small high schools.

Part A

Status of the Small High School

Industrial arts has been accepted generally in the small high schools of Oklahoma. The industrial arts program was originally begun in the high school, although now it plays an important part in the junior high school program. Two hundred and ninety-five small high schools of Oklahoma offer industrial arts in their curriculum. This is almost one-half of the small high schools. Since the end of the 1949-1950 school year, thirty-eight small schools have added industrial arts to their curriculum, even though industrial arts is not required in the high school.

Approved Small High Schools. Table I shows a list of all the approved small high schools that have industrial arts, the names of the industrial arts teachers,

and whether the school has three or four years in its high school. If the school and town are the same, only the town will be shown.

Table I

List of Small High Schools in Oklahoma Offering Industrial Arts in 1950-1951

School and Location	Industrial Arts Teacher	Number of Years
Ada, Byng	N. R. Wade	4
Afton	W. T. Walker	3
Alex	Guy Brewer	4
Allen	A. G. Pipkin	4
Alluwee	L. F. Morse	4
Altus, Lincoln	Jesse Stewart	4
Anadarko, Lincoln	James Hilliard	4
Apache	Ben Ballard	3
Arcadia, Dunbar	C. R. Wilson	4
Ardmore, Douglas	H. L. Taylor	4
Arnett	O. B. Seeds	4
Asher	Borden Wallace	4
Avant	J. J. Potter	4
Avard	Larry Martin	4
Balko	T. L. Palmer	4
Bartlesville, Douglas	John Thomas	4
Battiest	Robert Wade	4
Beggs	George Rackleff	4
Begga, Wheatley	C. J. Holmes	4
Bennington	J. B. Baldwin	4
Blackburn	Clifford Bevins	4
Blair, Warren	Mack Armstrong	4
Blanchard	O. C. Barnes	3
Blanchard, Bridge Creek	W. N. Russell	4
Blanchard, Middleburg	Floyd Dunning	4
Bluejacket	Herbert Collins	4
Boise City	N. J. Wilson	4
Bokoshe	F. J. Wann	4
Boswell	Genoa Tidwell	3
Bowlegs	Herman Moore	4
Braggs	Ricel Keith	4
Braman	D. V. Vest	4
Bristow, Lincoln	L. N. Jordan	4
Bromide	J. J. Fryhover	4
Buffalo	B. J. O'Donnell	4
Burlington	Maurice O'Quinn	4
Butler	John Bell	3
Caddo	Kenneth Morgan	3

Table I, Continued.

School and Location	Industrial Arts Teacher	Number of Years
Calumet	R. B. Parnell	4
Camargo	Jack Richardson	4
Cameron	A. B. Ragland	4
Caney	Elton Carter	4
Canton	Max Scarce	4
Canute	L. P. Thacker	4
Carmen	Bob Sumpter	4
Carnegie	R. K. Phelps	3
Carter	E. A. Mize	3
Cashion	Floyd Spencer	4
Catoosa	James Lyons	3
Chattanooga	Gerald Gravlee	3
Chickasha, Friend	F. M. Freseder	4
Chickasha, Lincoln	Frank Rogers	3
Choctaw, Dunjee	C. L. Sloss	4
Clinton, Excelsior	C. L. Woodward	4
Cloud Chief, Cowden	C. F. Hildebrand	4
Colbert	Eldridge Ancel	4
Colcord	Rex Buchanan	3
Coleman	R. L. Edwards	4
Collinsville	Frank Welch	4
Colony	George W. Bennett	4
Copan	George Gourd	4
Cordell	Millard England	3
Council Hill	Joe Lemley	4
Coyle	Nelson Gregory	4
Crawford	Delbert Staude	4
Cromwell	J. I. Walls	4
Custer, Independence	Lloyd Graham	4
Cyril	Robert Helsel	3
Dacoma	D. W. Hall	4
Davenport	Lee McMakin	4
Davis	Arnold Bazmore	3
Davis, Woodland	R. C. Moore	4
Devol	Freizer Pierce	4
Dewey	C. W. Hankins	3
Duncan, Douglas	J. A. Davis	4
Durant, Cobb	D. R. Harvey	4
Dustin	E. P. Krausse	4
Eagletown	L. E. Savage	4
Earlsboro	D. H. Crews	4
Edmond, Deer Creek	W. H. Lawson	4
Elgin	L. W. Apala	3
Elk City, Lincoln	N. D. Fredrick	4
Elk City, Merritt	C. L. Sides	3
Elmore City	Paul Sandman	4
Enid, Booker T. Washington	Herman Patterson	4
Erick	J. M. Gamble	4
Elkhard, Kansas, Yarbrough	Norval Fields	4
Fairfax	L. A. Pascoe	4

Table I, Continued.

School and Location	Industrial Arts Teacher	Number of Years
Fanshawe	J. M. Taff	4
Fay	H. A. Hourer	4
Fitzhugh	G. G. Calvert	4
Fletcher	C. M. Ridgeway	3
Forgan	Murrill Kerns	4
Fort Gibson	A. J. Henson	3
Fort Smith, Arkansaw, Pocola	Marion Wortham	4
Foss	Jack Gilley	4
Fox	Carl Roblyer	3
Francis	Kenneth Murphy	4
Gage	Buford Beard	4
Gans	David Croslin	3
Garber	I. A. Holder	3
Gate	Donald Pannell	4
Geary	Allen Long	3
Gene Autry, Lincoln	W. F. Gibbs	4
Glenpool	Emile Delsigne	4
Goodwell	A. L. Milburn	4
Granite	H. C. McCall	3
Grove	Forrest Sark	3
Guthrie, Favor	Burton Dickenson	4
Haileyville	W. T. Olive	3
Hammon	Daniel Ediger	3
Harje	A. D. Kezer	4
Harrah	Joe Richards	4
Heartshorne	Bennie Funderburg	3
Heartshorne, Phyllis Wheatley	J. E. Lewis	4
Hastings	Calvin Clary	4
Haworth	Milburn Power	4
Healdton	J. T. Holland	3
Helena	J. W. Hoy	4
Hickory	M. J. Bashara	4
Higgins, Texas, Bishop	M. C. Jackson	4
Hillsdale	D. B. Niles	4
Hollis	Blant McGee	3
Hominy, Mound Valley	Elden Wagner	4
Hominy, SRA, Wildhorse	L. E. Murray	4
Hugo, Goodland	Roy Dronnen	4
Hulbert	W. B. Parsons	3
Idabel, Booker T. Washington	Z. O. McRae	4
Indianola	Marvin Hogue	3
Jefferson	H. E. Johnson	4
Jenks	J. W. Swofford	4
Jones	Heywood Beckham	4
Kansas	L. H. Bennett	3
Kaw City	J. W. Young	4
Kenefic, Nida	Donald Thompson	4
Ketchum	Fred Clough	4

Table I, Continued.

School and Location	Industrial Arts Teacher	Number of Years
Keys	W. T. Jones	4
Keystone	Arthur Smith	4
Kingfisher	Jack Edge	3
Kingfisher, Douglas	Charles King	4
Kinta, Louisville	G. D. Alexander	4
Konawa	A. D. Thomas	3
Lambert	Paul Koppetz	4
Lawton, Douglas	E. E. Stewart	4
Leedley	W. D. Hibler	4
Leflore	R. E. Scott	3
Lenapah, Douglas	Kabby Mitchell	4
Lexington	S. L. Powell	3
Lindsay	Allen Matthews	3
Loco	Lloyd Conover	4
Lone Grove	Don Nolen	4
Longdale	L. K. Platt	4
Lookeba, Sickles	Joe Williams	4
Luther, Washington	Lance Cudjoe	4
Manchester	Buford Albright	4
Maramec	Doyle Smith	4
Marietta	H. W. McKinney	4
Marietta, Douglas	L. K. Jackson	4
Maud	Glenn Rhoades	4
May	Thomas Oliver	4
McCurtain, Independence	B. L. Shaw	4
McMan, Dundee	Bert Lana	4
Mill Creek	H. O. Allen	4
Minco	George Jeter	4
Moore	L. E. Kelley	3
Moreland	H. B. Towns	4
Morris	Hershel Long	4
Morris, Liberty	Arland Price	4
Mountain View	Kenneth Adams	3
Mounds, Liberty	O. T. Foister	4
Muldrow	Amos Torbett	3
Mulhall	Jesse Stokes	4
Muskogee, DuBois	C. E. Thomas	4
Nash	E. M. Whorton	4
Nolagoney	W. C. Harrison	4
New Lima	W. Z. Duncan	4
Noble	J. D. Allison	3
Nowata, Lincoln	L. M. Rogers	4
Oakwood	V. G. Fruit	4
Ochelata	W. R. Bailey	4
Okeene	A. D. Simpler	4
Okemah, Excelsior	M. K. Underhill	4
Oklahoma City, Crooked Oak	Stanley Bean	3
Okmulgee, Grayson High	Cal Johnson	4
Oktaha	Eiland Rainwater	4

Table I, Continued.

School and Location	Industrial Arts Teacher	Number of Years
Oolagah	Stanley Wells	4
Orlando	C. T. Clodfelter	4
Osage	R. E. Bryan	4
Panama	C. D. Clay	3
Panola	Thomas Pate	4
Pawhuska, Booker T. Washington	B. T. Alford	4
Pawnee	Lawrence Cudjoe	4
Perkins	E. D. Hubbard	4
Pernell	Malcomb Floyd	4
Perry, Blaine	W. O. Mason	4
Picher	Vernon Gill	3
Piedmont	Harold Collett	4
Pittsburg	E. F. Coker	4
Ponca City, Attucks	Zebedee Hunter	4
Pond Creek	B. E. Vanzant	4
Pontotoc	Gene Ross	4
Porter	Charles Langley	3
Prague	T. J. Fullerton	3
Preston	V. A. Clarkson	4
Prue	N. C. Gladd	4
Purcell	R. T. Teel	3
Putnam	J. C. Vester	4
Quapaw	August Bergman	3
Quay	L. O. Holeman	4
Randlett	L. J. Lucas	4
Red Bird, Miller Washington	E. E. Jenkins	4
Reed	W. H. Winters	4
Rentiesville	Alonzo Marshall	4
Roydon	Jack Baggett	4
Ringling	C. D. Foster	3
Ripley	J. R. Coffee	4
Roosevelt	Bert Mosier	3
Roosevelt Consolidated Eight	Carl Nikkel	4
Ryan, Irving	T. C. Beare	4
Ryan, Union Valley	Clifford Baude	4
Saline	B. G. Brown	3
Sallisaw, Central High	Gilbert Green	4
Sand Springs, Booker T. Washington	J. W. Howell	4
Sapulpa, Booker T. Washington	H. W. Crowell	4
Savanna	Carl Tannehill	4
Sayre	Sherman Freer	3
Sayre, New Liberty	Francis Goosetree	4
Selman	Marvin List	4
Seminole, Booker T. Washington	C. W. Easley	4
Seminole, Pleasant Grove	E. L. Whitten	4
Seminole, Strother	Jesse Slavin	4
Sharon	E. L. Shryock	4

Table I, Continued.

School and Location	Industrial Arts Teacher	Number of Years
Shattuck	W. C. Jones	4
Shidler, Webb	F. L. Patterson	4
Smithville	E. W. Hamby	4
Spiro	Carl Pollard	3
Spiro, Douglas	Eugene Scott	4
Stafford	H. L. Stallings	4
Sterling	Edmond Franklin	4
Stillwater, Washington	James Ballard	4
Stilwell, Cave Springs	John Thurber	4
Stonewall	Vernon Younts	4
Strang	B. J. DeGrav	4
Stroud	L. A. Gilham	4
Sulpher	Foy Stout	3
Sumner	J. P. Wheeler	4
Taft, Motor	Harold Aldridge	4
Talala	Wayne Cravens	4
Talahina	Leo Treadway	4
Tatum	A. C. Hill	4
Temple	Ray Roblyer	3
Terlton	M. F. Park	4
Texhoma	Haskell Bilbrey	4
Thomas	C. J. Ross	3
Tipton	Ralph Garnett	3
Tishomingo	W. H. Shaw	3
Tishomingo, Booker T. Washington	Ernest Watley	4
Tryon	Conrad Schreiner	4
Tulsa, Berryhill	Lee Armstrong	4
Tupelo	Clifton McKay	4
Turpin	J. L. Williford	4
Tudkahoma	Guy Parker	4
Tryon	Lester Nieman	4
Valliant	Paul Branscum	4
Vanoss	N. E. Umphers	4
Velma, Velma Alma	John Harden	3
Vian	Paxon Stennett	4
Vian, Douglas	G. W. Smith	4
Wakita	R. D. Stermont	4
Walters	J. D. Norton	3
Wanette	F. L. Hudson	4
Wapanucka	T. B. Sullivan	4
Warner	B. C. Huckleberry	4
Washington	O. E. Bradley	4
Watonga	U. B. Stevenson	3
Waukomis	Carol White	4
Wayne	Charles Godard	3
Weatherford	A. L. Lee	3
Webber Falls	Tom Keen	3
Weleetka	R. C. Harlin	3

Table I, Continued.

School and Location	Industrial Arts Teacher	Number of Years
Weilston, Dunbar	L. R. Austin	4
Westville	Sam Guess	3
Wewoka, Douglas	W. T. Parker	4
Wewoka, Butner	T. G. Taylor	4
Whitesboro	Bob Long	4
Wilburton	W. C. Roberts	4
Willow, Ocima	Earl Hager	4
Wilson	Ernest Dry	4
Wister	J. W. Peery	3
Woodward, Tangier	J. W. Maddox	4
Wyandotte	C. R. Howerton	3
Wynona	Bentley Shockley	4
Yale	I. D. Malone	4
Yukon	James Harris	3

Course Offerings. Table II lists the course offerings in the two hundred and ninety-five schools, the frequency in which the course is offered, and the per cent of total number of courses for which the small schools are accredited. English, American history, mathematics and a laboratory science are required courses for graduation and accreditation in all high schools. Vocational Home Economics or Agriculture may be substituted for the laboratory science. The courses offered the greatest number of times are listed first.

Table II

Course Offerings

Course	Frequency
English	295
History	295
Algebra	294
Industrial Arts	291
General Science	274

Table II, Continued.

Course	Frequency
Oklahoma History	272
Typewriting	269
Home Economics	266
Geometry	241
Biology	235
Shorthand	196
Bookkeeping	192
Agriculture	160
Public Speaking	157
Problems in Democracy	154
Composite Mathematics	150
Physical Geography	137
Commercial Geography	136
Music	126
Driver Education	115
General Business	98
Arithmetic	63
Economics	61
Mechanical Drawing	55
Business English	51
Commercial Law	50
Chemistry	47
Spanish	33
Psychology	32
Physics	30
Trigonometry	17
Safety Education	16
Physical Education	14
Free Hand Drawing	12
Latin	12
Trade and Industrial Education	11
Conservation of Natural Resources	11
Consumer Education	8
Civics	6
Psysiology	4
French	4
Pre-Flight	2
Cosmotology	1
German	1

Total Enrollment. Two hundred and fifty-two of these schools were white schools and forty-three were separate. The smallest accredited high school had an eight-pupil enrollment. This was a four-year high school. The smallest

three-year high school has an enrollment of sixty-one pupils. Table III shows that fifty-three and seven tenths per cent of the schools have a total enrollment of from thirty-one to ninety pupils.

Table III

Total Enrollment in Small High Schools

Enrollment	4-year Schools	3-year Schools	Frequency	Per cent of total Number of Schools
Less than 10	1	0	1	.3
11-20	3	0	3	1.0
21-30	13	0	13	4.4
31-40	29	0	29	9.8
41-50	24	0	24	8.2
51-60	23	0	23	7.9
61-70	25	5	30	10.2
71-80	20	6	26	8.8
81-90	17	9	26	8.8
91-100	11	4	15	5.1
101-110	9	10	19	6.5
111-120	4	12	16	5.4
121-130	5	3	8	2.7
131-140	13	3	16	5.4
141-150	8	3	11	3.7
151-160	3	6	9	3.1
161-170	2	4	6	2.0
171-180	2	1	3	1.0
181-190	8	3	11	3.7
191-200	3	3	6	2.0
TOTAL	223	72	295	100.0%

Total Accreditation. The total accreditation for these schools ranged from fifteen and one-half to thirty-nine and one-half units. There were thirty-two white schools and six separate schools who were members of the North Central Association. The total accreditation for the North Central Association schools ranged from nineteen and one-half units to thirty-nine and one-half units. Table

IV lists the number of units for which the schools in this study were accredited.

Table IV

Total Accreditation

Units	Frequency	Percent of total Number of Schools
12-15 1/2	4	1.3
16-19 1/2	60	20.3
20-23 1/2	102	34.6
24-27 1/2	56	19.0
28-31 1/2	44	15.0
32-35 1/2	22	7.4
36-39 1/2	7	2.4
Total	295	100.0%

Units of Industrial Arts Offered. Table V shows the number of units of industrial arts offered in the small schools. Mechanical drawing courses are compiled in this table. Where one-half unit is shown the course is called home mechanics. In many of the three-year schools industrial arts is offered in mixed classes, such as ninth and tenth, or ninth through twelfth grades.

Table V

Units of Industrial Arts Offered

Number Units Offered	4-Year Schools	3-Year Schools	Frequency	Percent of Total Number of Schools
1/2	3	0	3	1.0
1	67	20	87	29.5
2	104	29	133	45.1
3	36	20	56	19.0
4	12	3	15	5.1
5	1	0	1	.3
Total	223	72	295	100.0%

Size of Industrial Arts Classes. Two hundred and sixty-six schools of the two hundred and ninety-five reported the number of pupils in each class. There was a total of six hundred and nine classes in these schools. This means there was an average of two and three tenths classes per school. Class enrollment ranged from two to thirty-three pupils per class. Table VI shows that sixty-eight and nine tenths per cent of the total classes ranged in enrollment from eight to seventeen students.

Table VI

Size of Industrial Arts Classes

Number of Pupils Per Class	Frequency	Percent of Total Number of Classes
2-3	8	1.3
4-5	32	5.3
6-7	53	8.7
8-9	80	13.1
10-11	89	14.6
12-13	91	14.9
14-15	87	14.3
16-17	73	12.0
18-19	39	6.4
20-21	24	4.0
22-23	22	3.6
24-25	5	.8
26-27	3	.5
28-33	3	.5
Total	609	100.0%

In all cases where there were junior high schools with the high schools the industrial arts teacher is expected to teach both the high school and the junior high school industrial arts classes. In many schools the classes are combined. The course duration in high schools

must be thirty-six weeks to count toward graduation.

Part B

Industrial Arts Teachers in Small Schools

The shortage of industrial arts teachers seems to be solved as of this year. However, a shortage of trained and well-qualified teachers still exists. A trained industrial arts teacher for a small school must have a broad background. Pope (30, page 23) states the general shop is the answer for the small school where one teacher is employed. Louis V. Newkirk, (9, page 22) in Organizing and Teaching the General Shop, sets forth an opinion of the training necessary for a general shop teacher.

> The general shop teacher needs shop training as intensive as seems practical in the usual four years allotted to the completion of undergraduate work. The specific-subject teacher needs the general cultural training required of all teachers but he also needs a complete mastery of the subject matter of his individual course. The general shop teacher, on the other hand, is not called upon to teach a vocation - he must give a course embodying rich opportunities for exploration and guidance. He needs at least a beginning course in drawing, electrical work, sheet metal work, woodwork, plumbing printing, forging, foundry, concrete work, auto mechanics, finishing and design. He should also have a course in occupations and careers.

Teaching Fields. In addition to the industrial art requirements, a teacher in a small school is generally expected to teach at least one other subject and sometimes more. Table VII contains the teaching field combinations that the teachers in this study have. Fifty-nine per cent

of the teachers have teaching fields of industrial arts, mathematics and history. In addition to these teaching fields reported, fourteen of these teachers are superintendents and fifty-eight are principals.

Table VII

Teaching Fields

Combinations	Certificates	Temporary	Frequency	Percent of total Number of Schools
Industrial Arts	100	12	112	38.0
Ind. Arts, Math	34	2	36	12.2
Ind. Arts, History	23	3	26	8.8
Ind. Arts, Social Science	16	1	17	5.8
Ind. Arts, Science	15	1	16	5.4
Ind. Arts, Elementary	14	1	15	5.1
Ind. Arts, Physical Education	14	1	15	5.1
Ind. Arts, Driver Education	14	0	14	4.8
Ind. Arts, Commercial	10	1	11	3.71
Ind. Arts, Agriculture	7	1	8	2.7
Ind. Arts, History, Mathematics	2	1	3	1.0
Ind. Arts, Physical Education, History	2	1	3	1.0
Ind. Arts, Biology	2	0	2	.7
Ind. Arts, Music	1	1	2	.7
Ind. Arts, Science, Mathematics	1	1	2	.7
Ind. Arts, Arts	1	0	1	.33
Ind. Arts, Speech	1	0	1	.33
Ind. Arts, Mathematics, Chemistry	1	0	1	.33
Ind. Arts, Science, Commercial	1	0	1	.33
Ind. Arts, Science, Biology	1	0	1	.33
Ind. Arts, Science, History	1	0	1	.33
Ind. Arts, Agriculture, Biology	1	0	1	.33

Table VII, Continued.

Combinations	Certificates	Temporary	Frequency	Percent of total Number of Schools
Ind. Arts, Biology, Physical Education	1	0	1	.33
Ind. Arts, Driver Education, Physical Education	1	0	1	.33
Ind. Arts, Biology, Chemistry, Physics	1	0	1	.33
Ind. Arts, English, Mathematics	0	1	1	.33
Ind. Arts, History, English, Mathematics	0	1	1	.33
Ind. Arts, Social Science, Physical Education	0	1	1	.33
Total	265	30	295	100.0%

Industrial Arts Teachers Salaries. The salaries of all teachers except four are listed in Table VIII. The nine teachers that have salaries of less than two thousand dollars per year do not have degrees or work only part time. The higher salaried group, thirty-three hundred dollars and above, is accounted for as follows: eleven superintendents, sixteen principals, ten coaches, one trade and industrial education teacher, and one teacher with a master's degree who teaches only industrial arts. Eleven teachers with masters degrees are paid above state schedule. These salaries range from twenty-four hundred to thirty-three fifty for teachers that teach industrial arts only. The salaries above state aid ranged from one hundred to six hundred and fifty dollars above schedule.

Others with masters degrees were principals, superintendents and coaches. Five teachers holding a masters degree were not receiving above the maximum state aid level.

Table VIII

Industrial Arts Teachers Salaries

Salaries	Frequency	Percent of Total Number of Teachers
Not obtained	4	1.3
Less than $2,000.00	9	3.1
$2,000.00 to 2,199.00	11	3.7
2,200.00 to 2,399.00	36	12.2
2,400.00 to 2,599.00	68	23.0
2,600.00 to 2,799.00	56	19.0
2,800.00 to 2,999.00	27	9.2
3,000.00 to 3,199.00	36	12.2
2,200.00 to 3,399.00	23	7.9
3,400.00 to 3,599.00	9	3.1
3,600.00 to 3,799.00	6	2.0
3,800.00 to 3,999.00	4	1.3
4,000.00 to 4,199.00	3	1.0
4,200.00 to 5,000.00	3	1.0
Total	295	100.0%

Degrees of Industrial Arts Teachers. One criterion for determining the quality of teachers that are generally employed in a state or teaching field is the degree held by the teachers of that state or in a particular field. Table IX shows that only six and two tenths percent of the industrial arts teachers in the state's small schools hold temporary teaching certificates with no degree.

Table IX

Degrees of Industrial Arts Teachers

Degrees	Frequency	Percent of total Number of Teachers
Life certificate, no degree	1	.3
Temporary certificate	18	6.2
BS	217	73.5
BA	11	3.7
AB	16	5.4
MS	24	8.2
MEd	2	.7
MA	6	2.0
Total	295	100.0%

Credit Hours in Industrial Arts Teaching Field. To obtain a degree with a standard certificate, effective July 1, 1953, a minimum of twenty-four semester hours college credit in industrial arts or related fields are required. A minimum of sixteen semester hours of credit in industrial arts or related fields is required for a temporary certificate. Most of the teachers' credit hours listed in Table X having less than twenty hours in industrial arts were administrators or coaches. There were only two teachers without degrees who had less than twenty hours in industrial arts.

Table X

Hours in Industrial Arts Teaching Field

Hours	Frequency	Percent of Total Number of Teachers
Less than 6	1	.3
6-10	6	2.0
11-15	10	3.4
16-20	20	6.8

Table X, Continued.

Hours	Frequency	Percent of Total Number of Teachers
21-25	29	9.8
26-30	41	13.9
31-35	39	13.2
36-40	51	17.3
41-45	27	9.2
46-50	13	4.4
51-55	6	2.0
56-60	7	2.4
61-65	9	3.1
66-70	35	11.9
Total	295	100.0%

Teaching Load. According to the high school applications for accreditation there are forty-two schools that used the forty-five minute period and two hundred and twenty-one schools that use the sixty minute period. Thirty-two schools turned in incomplete applications. Table XI shows that eighty-seven and five tenths per cent of the industrial arts teachers teach at least five periods a day or a full days schedule.

Table XI

Teaching Load

Number of Classes	Frequency	Percent of total Number of Teachers
1	4	1.3
2	13	4.4
3	11	3.7
4	9	3.1
5	33	11.2
6-7	225	76.3
Total	295	100.0%

Industrial arts teachers in the small schools of Oklahoma must be very versatile. It is not uncommon to

find a teacher that has one industrial arts class, two mathematics classes, a study hall, general science class, and be principal of a school; or three industrial arts classes, algebra, study hall, coach, and principal. An attempt has been made in this chapter to picture the small school, to emphasize the many interesting activities as they are viewed from the standpoint of the industrial arts teacher. It is the hope of the writer that material here will show the small school industrial arts program as it is, where improvement can be made if there is a need for the improvement.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

This chapter will present a summary of findings and discuss the conclusions of the writer as indicated by the study. Recommendations are suggested concerning the implementation of the findings and also problems for further study. Some readers may prefer to read this chapter as an overview of the entire thesis before attempting a detailed study.

Summary of Findings and Conclusions. Industrial arts has been accepted generally in the small high school and is increasing in popularity. Since the 1949-1950 school year thirty-eight small schools have added industrial arts to their curriculum which brought the total number of small schools offering that subject to two hundred and ninety-five. In Table I the names of those two hundred and ninety-five small high schools, with the industrial arts teachers are listed. The courses which all schools of this study are accredited with are listed in Table II. English, history, mathematics and a laboratory science are required courses for graduation and accreditation in all high schools. A third year of vocational agriculture or a third year of vocational home economics may be substituted for the unit of laboratory science. The four-

year high school requires sixteen units for graduation, and the three-year high school requires twelve.

English, history, algebra, industrial arts, general science, Oklahoma history, typewriting, home economics, geometry, biology, shorthand, bookkeeping, agriculture, public speaking, problems in democracy, composite mathematics, physical geography, commercial geography, music, driver education and general business are the courses generally offered in the small high schools. These courses are offered in eighty-six per cent of the schools studied.

According to Table III the average enrollment for four-year schools is seventy-one students per school, and the three-year total enrollment is one hundred eighteen students. Some four-year high schools are very small with less than twenty students enrolled.

The average total accredited units per school in Table IV is twenty-four units. This is a good average in spite of the information showing that four schools show less than sixteen units.

According to Table V the average number of classes are two, with some schools offering four and five classes of industrial arts.

The sizes of industrial arts classes ranged from an enrollment of two pupils to thirty-three pupils. The average size class in Table VI is thirteen students. Ninety-three classes have less than eight students per class. These classes are probably too small administra-

tively but much individual attention can be provided in classes of this size. Industrial arts units must be thirty-six weeks duration to count toward graduation.

Thirty-eight per cent of the industrial arts teachers shown in Table VII do not have second teaching fields but teach industrial arts only. Mathematics and history are the two combinations generally taught with industrial arts. Industrial arts teachers in the small schools must be very versatile, for some teachers are expected to teach a variety of classes, and also be administrators. Some teachers are teaching too many combinations to teach efficiently in the field of industrial arts.

The salaries of industrial arts teachers are from $1,700.00 to $4,920.00. The average salary shown in Table VIII is $2,740.57. The highest salaries are paid to administrators and coaches. By adding the $300.00 raise to the salaries of all state aid teachers the average industrial arts teacher's salary for the coming year will be over $3,000.00.

According to Table IX there are six and two tenths per cent of the industrial arts teachers who have temporary certificates. Ten and eight tenths of the teachers held masters degrees. All other teachers hold bachelor degrees or have a life teaching certificate.

Some teachers are teaching industrial arts with few credit hours in that field. According to Table X five and seven tenths per cent are teaching with less than six-

teen hours credits in industrial arts. Most of these teachers are administrators and coaches.

According to Pope (30, page 23) the general shop is the answer to the small school where one teacher is employed. Newkirk (9, page 22) gives the general qualifications for the general shop teacher.

The average industrial arts teacher in small schools in Oklahoma has thirty-three hours credit in industrial arts, which is a high average, but twelve and five tenths per cent of the teachers with below twenty-one hours credit couldn't possibly have the necessary background for teaching a general shop.

There were forty-two schools using the forty-five minute class period and two hundred and twenty-one schools using the sixty minute period. Thirty-two schools turned in incomplete reports.

Table XI shows that the average industrial arts teacher will teach a full schedule each day.

Recommendations Concerning the Implementation of the Findings in Industrial Arts Courses. After studying the status of the small high school and industrial arts teachers, the following recommendations are presented.

Because of the size of some schools, they should be consolidated with others where possible. Schools with small enrollment require that each teacher instruct a number of classes where the school can offer enough units to be accredited. It is recommended that all teachers of

industrial arts teach in only two fields. Where a teacher teaches in a number of fields there is generally not time for adequate preparation which is so necessary for good teaching.

Different age groups in classes should not be mixed. This practice may cause discipline problems.

The average class of thirteen students is a small class, but provides for close supervision. The class size is an individual school problem. Industrial arts classes should not be larger than the available space provided. There should be at least seventy square feet of floor space per student. There should not be more students in the class than there are working stations provided.

Teachers who can satisfy only the minimum requirement of sixteen semester hours in industrial arts for a temporary or provisional certificate should be restricted to teaching only those subjects which they have received training in. It is also recommended that all industrial arts teachers have at least a bachelors degree or a life certificate to teach in the near future for only six and two tenths teachers in the small schools are teaching with less than a bachelors degree. This small per cent should either obtain a degree or be replaced.

Shop maintenance is of major importance in an industrial arts program. Therefore, one period a day should

be set aside for the convenience of the teacher for ordering supplies, maintenance of equipment, and accounting procedures.

Recommendations Concerning Problems for Further Study. A thesis of this type cannot be made without the writer becoming cognizant of many problems that would make for further study. Two problems which the writer believes would be of help and most interesting to those concerned with industrial arts are as follows.

A comparison of Oklahoma high school industrial arts teachers' salaries with those of teachers of other subjects in the high school. This study would be in relation to the degree held, and years of experience. The method of collecting information would be both documentary and by a survey.

Another suggested study could be a comparison of attitudes of industrial arts, English, history, science, mathematics, commerce and agriculture teachers towards each other's fields. This study could be conducted on a high school level by the survey method. Each teacher answering the survey would have to make a choice of certain well-chosen statements concerning each field.

The Oklahoma industrial arts program rests on the shoulders of the industrial arts teacher of today. The program is now in a period of professionalization. The extent of success or failure will be decided by the small schools which contain a large per cent of the total

industrial arts teachers, and generally forms a part of every industrial arts teacher's pathway at one time or another during his attempt to serve his fellow man.

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THESIS TITLE: A STUDY OF THE COURSE OFFERINGS IN SMALL HIGH SCHOOLS IN OKLAHOMA WITH SPECIAL EMPHASIS ON INDUSTRIAL ARTS

NAME OF AUTHOR: LEMUEL W. APALA

THESIS ADVISER: C. L. HILL

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