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Name: CHARLES W. SMITH

Institution: Oklahoma State University of Agriculture and Applied Sciences

Location: Stillwater, Oklahoma

Title of Study: INDUSTRIAL EDUCATION IN THE BARTLESVILLE CITY SCHOOLS, 1957-1958

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Scope of Study: This study deals with the summarization of industrial education in Bartlesville, Oklahoma, school system with respect to professional preparation, experience, tenure, and special duties of the teacher. Also, the enrollment, subject content, and use of textbooks of the industrial education classes. The type, size, location of the shops; the evaluation of each shop, and the enrollment of the schools' industrial education programs are included. The information is presented in table form with explanations of each. Included, also, are the conclusion of the study and recommendations for improvements.

Findings and Conclusions: From the study of twelve industrial education teachers, who answered the questionnaire and personal interview, the following information was gathered: There were 1,290 students enrolled in industrial education classes for the year of 1957-58. Half of the twelve industrial education teachers hold a masters degree. Summer employment is made available to the industrial education teachers. Class rooms have ample space and the industrial education program has grown tremendously since 1916 to 1958. The industrial education program is very popular with junior and senior high students. Drafting, auto mechanics and carpentry courses qualify more students for jobs after finishing high school than any other industrial education courses in the Bartlesville city schools.

ADVISOR'S APPROVAL C. L. Hill

INDUSTRIAL EDUCATION IN THE BARTLESVILLE CITY SCHOOLS
1957-1958

INDUSTRIAL EDUCATION IN THE BARTLESVILLE CITY SCHOOLS, 1957-1958

by

CHARLES W. SMITH

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INDUSTRIAL EDUCATION IN THE BARTLESVILLE CITY SCHOOLS,
1957-1958

CHARLES WALTER SMITH

MASTER OF SCIENCE

REPORT APPROVED:

C. R. Hill
Advisor and Acting Head
School of Industrial Arts Education

L. H. Bengtson
Associate Professor
School of Industrial Arts Education

Dean, Graduate School

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In addition to expressing deep respect and admiration for Professor C. L. Hill, Acting Head of the School of Industrial Arts Education, and my adviser, I also wish to acknowledge my indebtedness to him for his invaluable aid.

To my teachers, friends, and counselors, my appreciation is expressed for their advice and encouragement.

To the administrators and heads of the different schools and shops in the Bartlesville City School System, I am grateful for records made available to me.

To my wife, Lois M. Smith, I express my gratitude for her help, patience, understanding, inspiration, and confidence.

To HIM to whom I look for guidance and strength, I give greatest praise and thanks.

C. W. S.

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CHAPTER I

INTRODUCTION

The writer has arranged in chronological order, as nearly as possible, the development of industrial education from primitive man to the present time, and to present a history of industrial education in Bartlesville, Oklahoma.

Professional preparation, experience, tenure, special duties of the teacher, subject content, use of textbooks, physical facilities, courses of study, are also included in this study of the industrial education department.

Needs for the Study. This study has been chosen for the purpose of summarizing the extent of the industrial education program in the Bartlesville, Oklahoma, city school system. The writer feels that this study will be great value to the department as well as to the Superintendent of Schools.

Method of Research. The content of this report was obtained from books and magazines in the Oklahoma State University Library, the writer's personal books, questionnaires to industrial arts teachers, and personal interviews with the head of the Industrial Education Department in Bartlesville, Oklahoma.

Definitions. To assist the reader in understanding the material contained in the study, a glossary of terms follows.

Manual Training. "That phase of industrial training originated to emphasize the importance of making 'good workmen' as well as 'educated intellects'". (4, page 361)

Manual Arts. A change in view following the demand that the "art" and other phases of manual training be developed through having the individual pupils choose and design their own projects. (16, page 4)

Industrial Arts. A phase of general education that concerns itself with the materials, processes and products of manufacture, and with the contribution of those engaged in industry. The learnings come through the pupil's experiences with tools and materials and through his study of resultant conditions of life. (16, page 15)

Industrial Arts Education. A term including all educational activities concerned with modern industry, its raw materials, products, machines, problems and personnel. It includes manual training, manual arts, industrial arts, vocational education, and vocational industrial education. (12, page 1)

Vocational Education. A phase of industrial education concerned primarily with training students, at the secondary school level, for useful employment in one trade or occupation. Teachers are usually selected from the trades and given professional teacher training. (16, pages 248-249)

Vocational Industrial Education. The training of workers for the skilled and semi-skilled occupations which are a part of the modern industrial world. It is given as the student nears the time of employment, and emphasizes the specific skills, information, and work habits which will give success on the job. (16, page 15)

Adult Education. A means for continuing growth in manipulative skill, intellectually, emotionally, morally, and spiritually, long after evident physical growth has ceased. (22, page 490)

Unit Shop. The oldest existing type of shop, where a single activity is engaged in by the students. (16, page 302)

General Shop. A shop that is planned and equipped to teach two or more distinct types of shop work at the same time under one teacher. (16, page 15)

Education. Education involves the acquisition of information, skills, habits, ideals, attitudes, concepts and tastes, and is not to be thought of as merely acquiring knowledge. (1, page 126)

> Education is for the purpose of training an individual to think, in order that he may solve the problems both social and economic which he may meet in life, and to prepare him for complete living. (2, page 22)

The writer desires that the reader will use these definitions as a guide throughout this report.

Results of this study. It is hoped that the results of this study will give all teachers in the industrial education field a greater appreciation for those who are paving the way in the present day programs. May this study be an enlightenment to those who are interested in industrial arts.

Chapter II is a brief history of industrial arts and some of the leaders who first realized its importance in education and also a history of industrial arts in the Bartlesville Public Schools. Chapter III of this report is a summarization of the extent of the industrial education program in the Bartlesville, Oklahoma, City Schools.

CHAPTER II

HISTORY AND PHILOSOPHY OF INDUSTRIAL ARTS

The history of industrial arts had its beginning when human life appeared on the earth and has steadily advanced from that time until the present. The contents of this chapter present the important periods of education that have had a direct bearing on industrial arts, by presenting the important leaders and other events that influenced the program.

Part A

Early History

Manual skills were developed in the period of savagery to help the pre-historic people secure food, devise clothing, provide shelter and devise better weapons for the protection of themselves. These skills were passed on to the next generation by imitation. Also, new skills and procedures were developed by each descendant.

The savagery stage of civilization was advanced when man gained the power to control fire. He then passed on to the barbarism stage of civilization. He was able to cook his food and use the fire to smelt metals and shape them into tools, and from this many crafts, unknown to man before, were developed.

Jewish Education. The ancient Jews believed that a boy should be taught a trade as well as religion. The Jewish law placed the

responsibility of teaching the trade on the father. As a result of this thinking, each boy was sent to school for the Rabbi's instruction each morning and the afternoons were spent with the father learning the father's trade.

Many a scholarly Rabbi was noted, in addition to his religious duties, for his skills or trades. "The Rabbi who gave one-third to study, one-third to prayer, and one-third to labor was mentioned for special honor" (4, page 14). It was the rational belief of the Jews that a manual occupation was one important step toward usefulness of the citizens of society.

Grecian Education. During the Homeric Age, handicraftsmen occupied a place of respect, but in later years they took a negative viewpoint of manual or mechanical arts craftsmen. They used slaves and hired people for these tasks as they believed it would ruin the bodies of the upper classes by depriving them of time and energy for defense of the nation, social life, and state. Yet these ill-fated craftsmen grew by continually improving and passing these skills on to the next generation.

There are many leaders in all phases of society and in all types of industry, but perhaps the educational field has some of the most important leaders of all time. It is not always the man who contributes books and materials to the field who is a leader, but it is the man who will study and analyze the tasks before him and apply himself to those problems. The following paragraphs will present several of these leaders and their philosophies and events that follow.

John Heinrich Pestalozzi. Pestalozzi, known as the father of

industrial arts, was the first man to establish work as a regular part of a school program in his many schools and repeated the successful use of manual labor, both skilled and unskilled. He also used the latter of these two methods in instruction. "Either we go from words to things or from things to words" (4, page 119) The process of teaching from real objects took the pupil into fields and shops demonstrating the understanding of the skills desired. Although Pestalozzi never used actual tool instruction, his drawing and form study were definitely in the industrial arts field. As a result of his industrial school, established in 1774, many such schools were founded in all parts of Europe immediately thereafter.

Fellenberg. Phillip Emanuel von Fellenberg established the Hofwyl School in 1799 using many of Pestalozzi's principles and attracted much attention in Europe and America.

Fellenberg believed education must be reformed and extended, but that each class of people should be taught separately. Manual labor was used at Hofwyl for physical training as well as for practical experience. Agricultural, manual labor, and industrial reform schools were established in large numbers as a result of the development at Hofwyl. Fellenberg was a firm believer in the productive system. This was made evident when he said: "That only which a man produces by combining the materials presented to him or which he, to a certain degree, reproduces in his imagination until it becomes a part of his own train of thought, can be considered as a real acquisition; or can contribute satisfactorily to the development of his mind." (4, page 137)

Francke. August Herman Francke (1663-1727) primarily aimed to provide religious education for the poor and neglected children. His orphanage became the most important part of his institution. But besides religious instruction, he gave practical instruction including several manual arts. He observed that children "of their own accord are always busy at building and working, and that this may very easily be turned to some useful end by the teacher." (4, page 76) His orphans were taught to spin, sew and knit (even the boys were taught to knit). This was done in part for economic reasons. Yet he says that "the children should not work for the making of as many objects as possible, but they should work for their own development." (4, page 76)

As early as the beginning of the eighteenth century some of the men who were working under Francke recognized the need for a new type of secondary school giving emphasis to science, art, and the trades and industries - one quite different from the usual classical school or gymnasium. They, therefore, organized a curriculum which included mathematics, mechanics, natural science, and handicrafts.

Hecker. Johann Julius Hecker (1707-1768) founded the Royal Realschule in 1747 in Berlin. The purpose of this school was that "not mere words should be taught to the pupils, but realities, explanations being made to them from nature, from models and plans, and of subjects calculated to be useful in after life." The school was, therefore, called a real school, or a Realschule (4, page 76) The curriculum of this school included drawing, mathematics, science, and history as well as modern languages and Latin. In connection with this school, instruction was given in "turning, posting, glass-cutting, finishing, and other

activities." (4, page 76) Thus, began the nonclassical secondary school curriculum in Germany.

Rousseau. Jean Jacques Rousseau, a French philosopher of the eighteenth century, recognized that skill of hand is necessary for young men. He believed that a trade involving hand skills was a safeguard against personal want and poverty. Rousseau felt that a young man who has lost his station in society has little to turn to except a well-developed skill. He urged systematic instruction and training in some form of manual industry. He believed in adjusting education to the natural impulses of the child.

One of the statements made by Rousseau -- "If instead of making a child stick to his books I employ him at workshop, his hands labor to the profit of his mind, he becomes a philosopher but fancies he is only a workman." (4, page 80) Another one of his foremost statements is this: "It is necessary that he work like a peasant and think like a philosopher, lest be become as idle as a savage. The great secret of education is, to make the exercises of the body and the mind serve as relaxation to each other." (4, page 80)

Froebel. Wilhelm Augustus Froebel (1783-1852), one of the foremost educational idealists of Pestalozzi, took another step in the direction of eliminating meaningless study and establishing the modern idea from Pestalozzi's organic growth and developed it into the doctrine of self-activity, which he made the very center of his educational theory. He also took Pestalozzi's practice of training in observation and sense perception and expanded and systematized it until he produced the

kindergarten gifts and occupations.

In 1829 Froebel made the following statement regarding a proposed school:

> "The institution will be fundamental, inasmuch as in training and instruction it will rest on the foundation from which proceeds all genuine knowledge and all genuine practical attainments, it will rest on life itself and on creative efforts, on the union and interdependence of doing and thinking, representation and knowledge, art and science. The institution will base its work on the pupil's personal efforts in work and expression making these, again, the foundation of all genuine knowledge and cultures. Joined with thoughtfulness, these efforts become a direct means of instruction, and thus make of work a true subject of instruction." (4, page 164)

Victor Della Vos. As head of one of the first successful Technical schools in Russia, Della Vos, was successful in working out a new system that involved the organization of instruction shops separate from the construction shops.

The ends sought in his arrangements were to teach the fundamentals of the mechanic arts: (a) in the least possible time; (b) in such a way as to make possible the giving of adequate instruction to a large number of students at one time; (c) by methods that would give to the study of practical shop work "the character of a sound systematical acquirement of knowledge"; and (d) so as to enable the teacher to determine the progress of each student at any time.

The early school of mechanic arts in Russia trained their boys to be better mechanics in their particular field so they could go right into the factories. Many countries in Europe and America adopted some of the things the Russians carried on in their manual training schools.

Sloyd Movement. In the Scandinavian countries the winter evenings

were long and dark. It became a custom for the people to spend their evenings in some form of useful handiwork. The men and boys would make articles needed for use around the farm. The women and girls would spin, weave cloth, and make clothes. This type of handiwork in Scandinavia was referred to as Sloyd.

When the rural people learned to sell or trade some of their surplus projects the home Sloyd developed into domestic industry. Many villages became famous for their work and every boy became active in this type of industry.

The invention of power machines, the factory system, and the spread of the manufacture and use of alcoholic drinks, all contributed to the downfall of the home Sloyd. This breaking down of skill and character was a cause of much concern among the Scandinavian leaders. As a solution to these problems, Sloyd schools were established. By 1868 a Sloyd school was established by Abrahamson. For years later Otto Salomon, a nephew of Abrahamson, became assistant at the school. Otto Salomon had attended the technical school of Stockholm and the Ultuna Agriculture Institution and was a firm believer in the Sloyd system. In the year 1872 the Sloyd schools received official recognition and the Chamber of Deputies allotted money to stimulate instruction in Sloyd. In this year an industrial school was founded at Nass. This school was intended for boys who had completed the work in the folk school.

Included in the instruction were carving, turning, carpentry, smith's work, basket making, saddlery, stone cutting, fretwork, and painting. Other subjects of more educational value, such as drawing, mechanics, mathematics, and physics, were also taught. Special Sloyd

teachers were also given instruction at this school.

Part B

Development of Industrial Arts in America

The development of industrial arts in America, as well as many of the social traditions, was greatly influenced by the changes as they took place in Europe. The idea of free education which prevailed in the colonies offered a better opportunity for the education of all social classes.

Colonial. The industrial training before colonization was of the same type carried on in the monastic schools of Europe. Schools were in operation in the Spanish settlement of the southern and western settlement in what is now New Mexico, California, and Florida, as early as 1630. These schools were started by Catholic missionaries. Instruction in carpentry, blacksmithing, brick making, cutting, shoemaking, and tailoring was given. The instruction was taken over by the natives as they became skilled. In addition to the crafts taught for men there was instruction for the girls.

The apprenticeship method of instruction carried on in the English colonies was much the same as that practiced in England. Since the apprenticeship was under the control of town and colony authorities, and because there were no guilds, it developed more as an educational institution. Legislation was passed by most of the colonies for the benefit of the apprentice. There were faults in the American apprentice instruction just as there were in Europe. Even though many of the masters were indeed artisans they could neither read nor write. This

led to the establishment of the first elementary school in America.

In 1647, an order was given by the General Court of Massachusetts for every town of fifty families or more to select a teacher to be paid by the inhabitants. Industrial arts was not mentioned, but because of the Puritan distaste for idleness this training was probably given in the home. The most important outcome of this court order was the establishment of the free schools in America.

In 1685, a plan for public education was proposed by Thomas Budd for Pennsylvania and New Jersey. This plan called for compulsory education for all children, the rich, the poor, and Indians. Budd proposed to teach each child that "art, mystery, or trade that he or she most delighteth in." (15, page 12) There is no evidence that this plan was ever put into practice, but it may have had some influence on education of that day.

One of the notable schools established during the eighteenth century was De La Howe School at Abbeville, South Carolina, founded in 1787, for girls and boys. The boys were primarily engaged in farming and gardening, while the girls practiced the household arts.

Woodward. Professor Calvin M. Woodward of Washington University, St. Louis, Missouri, was a visitor to the Russian exhibition. He was so impressed with the Russian system that he wanted to offer manual training in the Washington University Polytechnic School. He visioned mechanical arts analyzed and taught under the same principles that other courses in the curriculum were taught. Woodward favored four to eight hours of instruction per week in the shops to give boys instruction in the use of common tools. He felt that manual skills would help

prevent boys from becoming idle or being employed in already overcrowded occupations. Professor Woodward claimed students who graduated from manual training high schools developed better intellectually and made better choices of occupations.

Bonser. In 1913, Frederic G. Bonser, Professor of Education at Teachers College, Columbia University, sought to help reorganize the curriculum of elementary education by full use of industrial arts. Bonser says:

> . . . it will at once appear that primary emphasis will not be placed upon the production of industrial commodities, but rather upon intelligence and cultivated taste in their choice and use. In no single field will all of the children function as producers, but from every field worthy of study they will function as consumers. The largest problems are those of developing an appreciative understanding of industry as it is at the present time realizing its social problems and cultivating intelligent judgement and appreciation in the selection and use of industrial products. (6, page 454)

Morrill Act. In 1862 the Morrill Act was signed by President Lincoln. This act was primarily for the establishment of agricultural schools, and became the most important legislation for higher education ever adopted by any nation. The act provided for 30,000 acres of public land for each senator and representative in Congress, to be used in establishing colleges of agriculture and mechanical arts.

Industrial Arts Since 1900. In 1904 Charles R. Richards suggested the adoption of the term "Industrial Arts" to replace manual training. He said that manual arts in its strictest forms was outmoded and "now we are beginning to see that the scope of this work is nothing short of the elements of the industries fundamental to modern civilization." (5, page 453)

Teacher education institutions naturally kept pace with the changes in industrial education. The increasing demand that all teachers have at least a bachelor's degree had induced universities to introduce professional courses in the field of industrial arts education. The first universities to offer these courses were Columbia State Institute and Bradley Polytechnic Institute.

There has been much progress since 1917, but the most notable has been the development of the professional spirit among industrial teachers. This has been accomplished through professional associations organized for cooperation and advancement of the profession.

Another change took place in 1917 which helped to advance the vocational educational program.

Smith-Hughes Act. A national vocational education act known as the Smith-Hughes Act was approved February 23, 1917. It was designated by this name because Senator Hoke Smith and Representative Dudley M. Hughes, both of Georgia, were instrumental in its passage.

The act was designed to encourage states to promote and further develop programs of vocational education of certain kinds which otherwise might not be adequately provided in state systems of education. This act provided for vocational education in agriculture, trades and industries, and homemaking.

It annually appropriated $3,000,000 for the purpose of cooperating with the state in paying the salaries and transportation costs of teachers, supervisors, and directors of agricultural and industrial subjects.

Part C

History of Industrial Education in The Bartlesville Public Schools

According to authentic records, the public schools of Bartlesville started industrial arts in 1916. Since Bartlesville and its surrounding community are semi-industrial, the addition of industrial arts to the Bartlesville school curriculum was a step in the right direction to further the growth and development of the youth, and to improve the living standards of all the people residing in the immediate area.

Three units were offered viz., woodwork, mechanical drawing, and auto-mechanics. At this time there were forty-five (45) students enrolled in the classes with one teacher. The equipment used in the program was valued at approximately $1,400. However, the program progressed quite favorably as the years went by.

In 1926, there were three teachers, two in the senior high school and one in the junior high school. In 1939, the school system began its vocational education program under very favorable conditions. In the same year (1939) diversified occupation courses were started by Mr. Floyd Hays, director of industrial education. In January, 1940, trade auto mechanics was added. In September, 1941, commercial cooking was begun. During the World War II, courses in diversified occupation were discontinued but were reinstated in September, 1946. Classes in carpentry which were started in September, 1945, were discontinued after one year of operation and in September 1946, trade drafting was added to the curriculum.It seems that during these years a decided effect for good was wrought and in the meantime the school and the community became profoundly conscious of a more effective and extensive industrial arts

program.

It is interesting and helpful to note that many trade drafting students, after finishing their courses, are employed by the Phillips Petroleum Company of Bartlesville.

Classes in vocational carpentry were again started in September, 1950. It is encouraging to know that the students of this phase of the industrial education program built houses as their project each year.

In September, 1956, a machine shop was opened for operation. Classes taught are trade classes. Drafting, auto mechanics and machine shop are taught one-half of the day as industrial arts classes. Carpentry and all evening classes in the above courses are taught on a full-time trade basis.

In 1956-57, eleven units in industrial arts and six units in trade and industrial classes were offered, with a faculty of fourteen teachers. There were eleven adult classes taught by eight teachers with two hundred and sixty-two students enrolled. The total enrollment in all industrial education classes was one thousand, five hundred and eighty-seven (1,587).

The Industrial Education Department has a total value of one hundred and nine thousand, five hundred dollars ($109,500.00), including all equipment, tools, and drawing instruments.

The overall description of the industrial arts program of the Bartlesville Public Schools presents a picture of varied processes and procedures, detailing some losses and gains in its growth and development. But in the final analysis, it is reasonable to conclude that the gains have exceeded the losses, and that now the industrial arts program

is moving forward with reasonable dispatch for the general good.

Part D

Philosophy of Industrial Arts

Industrial arts as a means of education is as old as civilization itself. Industrial arts as a group of school subjects is a relatively recent development. The leaders in this field have often been criticized by modern educational philosophers for not having a basic philosophy of industrial arts. Industrial arts philosophy is one of the oldest and most basic of all educational philosophies. One of the earliest activities of man was concerned with finding something to do to occupy idle hours. During these idle hours, men learned to do things with their hands. He experimented with materials and things. Because of their primitive explorations of the materials of nature, they learned how to use fire, the wind, and the waterfall to lessen the burdens of mankind. It is, therefore, seen that two of the modern objectives of Industrial Arts, use of leisure time, and exploratory opportunities, were shaping the world's destiny long before a written language appeared to aid the evolution of civilization. Formal academic education did not appear until a written language was available for use.

Industrial Arts is rapidly being accepted as a part of general education. This is not because it has an indefinite general nature and not because it pursues objectives which are similar to those of long accepted general education subjects, but rather it derives its content from industry - a basic element of culture - and because it has as its social purpose the greater understanding and better control of the phenomena of industry.

Objectives. The objectives of industrial arts change from time to time in the light of the philosophy of general education, the needs of the students, and the available facilities. The writer has nine suggested objectives common to many industrial arts teachers:

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-realization and Initiative. To develop in each pupil habits of self-reliance 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 worthwhile, 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 drawings.

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.

The general industrial arts objectives as given by Wilber are for all levels of industrial arts education. These objectives are as follows:

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 articrafts from the material cultures of the past.

4. To increase consumer knowledge to a point where students can select, buy, use, and maintain the product of industry intelligently.

5. To provide information about, and in so far as possible; experience in the basic processes of many industries, 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, leaderships and followerships, and tact.

8. To develop a certain amount of skill in a number of basic industrial processes. (25, pages 42, 43)

The relationships of industrial arts in fulfilling the general

education objectives are evident. For example, the worthy use of leisure time as a part of the general educational objectives may be achieved better when creative expression, recreational and avocational activities are provided in the industrial arts program. Then too, the exploration of industry, materials, and processes in industrial arts, the provision of consumer education, and the development of skills in basic industrial processes are providing, in some instances, knowledge and skill needed in many industrial occupations as well as knowledge that promotes better citizenship.

It is also evident that the social relationships experienced in the industrial arts classes may readily be an influencing factor in character building.

The industrial arts objectives for the junior high school level are more specific than the general industrial arts objectives. The objectives listed here are those given by Warner:

1. Social habits and insights
2. Exploration
3. General guidance
4. Household mechanics
5. Avocations, hobbies
6. Consumer's knowledge
7. A degree of skill
8. Correlation and integration
9. Vocational purposes.

These junior high school industrial arts objectives are a progressive part of the industrial arts objectives at the senior high school level. Struck makes the following statment concerning industrial arts in the senior high school: "Industrial arts at the senior and the post high school level tends to become increasingly technical and decreasingly exploratory in nature." (22, page 33)

The statement by Struck indicates that the industrial arts courses in the junior high school are of an exploratory nature. Although the same objectives are used for both the senior and junior high schools, they are for the senior high school more technical in nature and usually lead to a greater concentration of courses within a broad field of individual activities, such as graphic arts, metal work, woodwork, electrical work, etc.

Current Beliefs. Since industrial arts is an important phase of secondary education, its objectives have closely paralleled the aims in this area of education. Probably the earliest significant study dealing with objectives of general education was that of the Commission on the Reorganization of Secondary Education which produced the now famous "Seven Cardinal Principles." Many early writers on industrial arts purposes and aims showed the contributions that industrial arts makes to the realization of the aims expressed in the Seven Cardinal Principles. They are:

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

One of the most complete attempts to relate the aims of industrial arts to these seven objectives was included in Friese's book, Exploring the Manual Arts, written in 1926. In this book, it was shown quite

conclusively that "manual arts," or industrial arts as it is now more commonly called, contributes significantly to the achieving of all the seven cardinal principles.

The Writer's Philosophy. The study of the principles that have caused and controlled the events leading to industrial arts in its present form, as stated by various leaders in the field, and the later application of these principles in the field of teaching has formed the basis for this writer's personal philosophy of industrial arts.

A system of general beliefs may be based on the various definitions used in describing industrial arts. While philosophy may, and generally does, vary with changing concepts and conditions pertinent to the field under consideration, the writer's philosophy may be presented in the following statements.

a) Those occupations by which changes are made in the forms of materials to increase their values for human usage, as a subject for educative purposes, industrial arts is a study of the changes made by man in form of materials to increase their values, and of the problem of life related to those changes. (16, page 5)

b) A phase of general education that concerns itself with the materials, processes and products of manufacture, and with the contribution of those engaged in industry. The learnings come through the pupils' experience with tools and materials and through their study of resultant conditions of life. (18, page 5)

c) A group of school subjects taught so as to emphasize the "how" and the "why" of industrial materials and occupation; to give an appreciation of real industrial life situations thereby, contributing to education and culture. (18, page 9)

d) A definite phase of general education based on values derived principally from manipulative activity and study of materials. (16, page 248)

The foregoing definitions, gathered from several sources have essentially the same meaning. Industrial arts as a subject in education, is more concerned with manipulative activity and the study of materials than in preparing students for remunerative employment. Emphasis is placed upon the participation and exploration by the student rather than skill and efficiency; therefore, the program strives to offer a variety of experiences with tools and materials representing many crafts and industries. One of the more important characteristics of industrial arts, from an educational viewpoint, is that standards of accomplishment are based upon pupil growth rather than the degree of skill attained. (3, page 248)

The objectives of industrial arts very closely parallel those aims of general education as previously set forth in "The Cardinal Principles of Secondary Education."

Certainly, industrial arts as nearly approaches these principles as any other phases of education and together with the other subjects makes a valuable contribution to the intellectual growth of its students.

The objectives which give the student an insight into industry, consumer's knowledges and appreciation, a degree of skill in a number of basic industrial processes, and information about many types of industries, are responsibilities that fall almost wholly upon the industrial arts teachers.

The conditions that control industrial arts content are basically the same factors as those determining what is to be achieved in the remaining fields of education. A highly industrialized society has made the acquiring of a skilled occupation an important preparation for

future living. The exploratory phase of industrial arts has evolved to meet this condition, not by teaching the skill itself, but by allowing the student to experiment and explore until a niche is found in industry for which he is best suited. The changing economic conditions, which today are such that every person is a purchaser of enormous amounts of manufactured products, emphasized the importance of consumer knowledge. Improving labor conditions, leaving more time for pursuit of avocational interests, have made their impressions. Conditions surrounding a people are never static, and for this reason, revisions become necessary to keep pace with progress of civilization.

The philosophy of industrial arts has changed immensely since the beginning of manual training in America. No doubt, as progress is made into an even greater scientific and mechanical age, the general views and beliefs will undergo changes that cannot be comprehended today.

Teachers should establish objectives and encourage students to work toward a definite goal. Poor teaching may result if aims and objectives are neglected. The objectives of industrial arts are closely related to those of general education and will be discussed in the next chapter.

CHAPTER III

PRESENT STATUS OF INDUSTRIAL ARTS IN THE BARTLESVILLE PUBLIC SCHOOLS

Finding the real facts with regard to the existing condition of industrial arts in the Bartlesville public schools was the problem of this study. The writer was able to make personal interviews with each teacher of industrial arts in the Bartlesville school system. Also, a questionnaire was used to secure the needed information. The replies given to the questions will be presented in this chapter.

Part A

Research Methods Employed

Man has yet to devise the perfect method of research; however, many accepted methods have been devised and are in use at the present time. From these the writer chose the normative survey method. How it applies to and is used in this study will be presented in this part.

The Inquiry Form. The questionnaire was prepared with the intention of gathering information from the teachers in the field. So that a minimum amount of time would be required to complete the questionnaire, the form was made as brief as possible.

Questions concerning the professional preparation, experience, tenure, salary, and special duties of the teacher; the enrollment, subject content, and use of text books and field trips of the industrial education classes; the type, size, and location of the shop; the

money allotted for and the name of the department; and the enrollment of the school were included.

Methods of Study. For the majority of the information of this study the personal interview method was used. The information was analyzed and organized to conform with an outline especially prepared for this type of study.

Validity of Results. There was 100 per cent cooperation in questionnaires returned. The writer had a personal interview with each teacher in the industrial arts departments of the Bartlesville public schools. Each replied to questions asked pertaining to the study of this report.

Part B

Industrial Education Teachers

The teacher of today is an important person. Upon his shoulders rests the success or failure of the world's greatest experiment - democracy and free enterprise. Since this is an industrial democracy, the industrial education teacher has a big share of the load.

Industrial Arts Teachers. In industrial arts, as in other school activities, what little carry-over value or transfer of training occurs takes place more as a result of the methods of teaching employed than through the particular significance of subject matter. The important thing in connection with transfer is to recall that the way a teacher teaches industrial arts is more important than what he teaches. He must also consciously direct pupils's attentions to the procedures that they use in solving problems.

Trade and Industrial Teachers. Trade courses are designed to provide specific training which will enable students to enter a given industrial occupation. Industrial arts and vocational industrial education are parts of the high school curriculum; the industrial arts courses are designed to acquaint students with a variety of areas, while the trade courses provide specialized training in one field of the student's choice. Industrial arts training is stressed and its importance noted before students decide upon advanced industrial specialization or trade courses. With the advance knowledge of teaching of trade and industrial education the trade and industrial education teacher is equally as important as an industrial arts teacher in the schools today.

Professional Preparation. Teachers indicating that their degrees were in industrial arts were far in the minority. Although not a special question, many mentioned that their degrees were in industrial arts as a major and secondary education as a minor. Those having a master's degree numbered six (6) or fifty per cent of the total of twelve (12) industrial education teachers in the Bartlesville Public School System. The number and types of degrees are listed in Table I, page 28.

Of the six (6) teachers holding a Bachelor's degree, three (3) or 50 per cent, are working toward a Master's degree.

The number of semester hours in industrial arts and trade and industrial education are listed in Tables II and III, page 28.

TABLE I

TYPES OF DEGREES HELD

Degrees	Frequency
B. S. Education	1
B. S. I.A.E.	4
B. S. T and I.E.	1
M. S. I.A.E.	2
M. S. T and I.E.	2
M. E. D.	2
Total	12

TABLE II

HOURS OF PREPARATION IN INDUSTRIAL ARTS

Number of Hours	Frequency
0 - 5	3
16 - 30	1
31 - 50	3
over 50	5
Total	12

TABLE III

HOURS OF PREPARATION IN TRADE AND INDUSTRIAL EDUC.

Number of Hours	Frequency
0 - 6	3
16 - 30	3
31 - 50	3
over 50	3
Total	12

Teaching experience and tenure of the teachers may be found in Table IV. Of the twelve (12) teachers, two (2) had taught industrial arts in the Bartlesville school system less than five years, and three (3) have taught over 24 years.

TABLE IV

TEACHING EXPERIENCE AND TENURE

Years of Experience	Frequency Present
1 - 5	4
6 - 10	3
11 - 15	2
16 - 25	3
over 25	0
Total	12

Special Duties. Since industrial arts is of a practical nature, the teacher and the students are called upon many times to do maintenance, repairs, and construction work. The Bartlesville School Board maintains a maintenance shop headed by the Superintendent of Building and Grounds. Under his supervision, there are carpenters and other men who do special work for the upkeep of the school buildings and equipment.

The industrial arts teachers in the Bartlesville school system do not have to do any other work than their regular classromm assignments. Of importance to the teacher is the possibility of summer employment. The building superintendent employs all industrial arts and trade and vocational educational teachers during the summer, if they care to work. Maintenance, construction, and related work seemed to be

the jobes most teachers receive. A complete listing of these jobs may be found in Table V.

TABLE V

SUMMER EMPLOYMENT

Job	Frequency
Maintenance and Construction	2
Administration	1
Painting	2
Carpentry	3
Cabinet Making	1
Work for others	2
Total	11

Part C

Industrial Arts Class Data

The content of industrial arts courses has been developed over a period of years through surveys to determine the jobs of a mechanical nature that are most frequently encountered in modern living and by determining through teaching experience the jobs and related information that may be assimilated at different grade levels.

The junior high school industrial arts courses are conducted in limited general unit shops, each representing a broad industrial field. For example, general metal includes exploratory experiences in bench metal, sheet metal, ornamental iron, metal casting and art metal. One of the most unique offerings is handicrafts work. This interesting course for boys includes work in wood, metal, leather, plactics, reed work and other areas.

Projects made in the junior high school industrial arts shops are initiated in the main by students' interest and appeal. In addition to

exploring broad occupational fields through typical manipulative experience, pupils gain occupational information through study and investigation, illustrated talks, demonstrations, operation pictures, and visits to industrial establishments.

Course Scheduling: The following subjects are being taught in the Bartlesville junior high schools and the number of weeks offered to the different grade levels.

7th Grade

Drawing . . . . . 9 weeks

Woodwork . . . . . 9 weeks

General Metals . . . . 18 weeks
(bench, sheet, general metals)

8th Grade

Woodwork . . . . . 18 weeks

Leather craft . . . . . 9 weeks

General Metals . . . . . 9 weeks
(Bench and sheet metal, ornamental-iron and foundry)

9th Grade

Electives . . . . . 36 weeks
(Drawing, woodwork, metals, or handicrafts)

Mechanical Drawing. Exploring mechanical drawing provides the student with the opportunity to investigate some of the problems in and relative to the language of drawing. It provides a means by which a student may learn to visualize and express graphically his own ideas and interpret the ideas of others; it provides for self-expression through planning and doing.

Exploratory mechanical drawing is offered to students of the seventh grade in the junior high schools. It is designed to acquaint the student with the language of drawing and provide experience that will enable him to determine whether his abilities and interests lie in this particular field. Time: 9 weeks, 1 hour per day, 5 days a week.

General Metals. Exploratory metal is designed to provide the student with a knowledge of the tools, materials, and finishes in the different areas of metal work. It provides varied experiences that correlate closely with other areas of learning in the curriculum of the junior high school. Areas include bench metal, sheet metal, ornamental iron and foundry.

Exploratory metal is an introduction to the tools and learning processes that will enable the student to determine whether his interests and abilities lie in this particular field. It is offered in the seventh and eighth grades. Time: 18 weeks, seventh grade; 9 weeks, eighth grade; 1 hour per day, 5 days per week.

General Woodwork, Exploratory woodwork provides the student with the opportunity to investigate some of the problems in and relative to the fundamentals of woodwork. It provides for self-expression through tool manipulation and handling of lumber and other materials in constructing simple projects. Exploratory wood provides varied experiences that correlate closely with other areas of learning in the curriculum of the junior high school.

Exploratory wood is an eighth grade course designed to acquaint the student with problems of tool manipulation in the fundamentals of woodwork sufficient to enable him to determine whether his abilities

and interests lie in this area. Time: 9 weeks, seventh grade; 18 weeks, eighth grade, 1 hour per day, 5 days a week.

Handicrafts. Handicrafts include work with metal, wood, plastic, leather, and many other mediums which help to develop confidence in the individual and their ability to make useful things with their hands. An experimental attitude is encouraged in the use of materials and tools in these craft activities.

Part D

Senior High School Industrial Education

Industrial Education at the senior high school level emerges as a continuation of the exploratory phase of junior high school shop work, contributing to the enrichment of all school subjects.

Industrial education subjects in drafting, drivers education, motor mechanics, machine shop, woodwork, electricity, metals and carpentry, are offered in the senior high school. All students are required to take one year of a "doing" subject with many students electing industrial education subjects each year in senior high school.

Industrial Education Subjects. The following subjects are being taught in the Bartlesville high school:

General Drafting 1, 2	Electricity 1
Architectural Drafting	Auto Mechanics 1, 2
Machine Drafting	Auto Mechanics 3, 4
Technical Drafting	Vocational Auto Mechanics (3rd period)
Vocational Drafting (3rd period)	Woodwork 1, 2

Machine Shop 1, 2

Machine Shop 3, 4

Vocational Machine Shop (3rd period)

Distributive Education

Diversified Occupations

Woodwork 3, 4

Vocational Carpentry (3rd period)

Diversified Occupations. Diversified occupations is a cooperative program open to junior and senior students in which the student spends one-half day in school and one-half day in on-the-job training in industry. A student may earn five (5) credits each semester in this program; one each in two related classes (trade and industrial related to a specific occupation and trade and industrial relations); English, one elective subject, and one credit for trade and industrial job training. No student should enter the program who does not plan to remain in the program until he graduates. Recommendation of the coordinator is required for entrance into or withdrawal from the program.

Distributive Education. Distributive education is a cooperative program that combines theory and practice in a distributive occupation for junior and senior boys and girls. Juniors entering the distributive education program should plan to remain in the program for their junior and senior years.

The distributive education student is a "direct-related" class which, in general, is a study of: (1) his job, (2) the merchandise or services which he sells, (3) grooming and health habits, (4) fundamentals of selling, and (5) cooperation with employees, co-workers and customers. His other required subject is related English, with the course

of study planned in direct relationship to the job. For each of these subjects, he receives one credit each semester in addition to his semester credit for his job. Rating sheets are referred to the employer whose opinions of the trainee's work determines, along with those of the coordinator, the student's job grade. A maximum of five (5) credits per semester may be earned. Approval of the coordinator is required for entrance into or withdrawal from the program.

Drafting. A knowledge of general drafting extends one's ability to give and receive ideas. Students choosing mechanical work benefit when first equipped with experience in drafting, especially recommended for engineering students.

General drafting 1 and 2 are recommended for all students. Architectural drafting 1 and 2 with a pre-requisite of General Drafting 1 and 2, is a one-year course in house planning involving a multitude of educational experiences related to living in and designing a home. Technical Drafting 1 and 2 is one year of experience in improvement of technique in drafting with emphasis on map drafting, lettering and tracing of drawings. Pre-requisite for this course is: General drafting 1 and 2; machine drafting 1 and 2 - one year of experience in drawing details of machine parts, assembly, etc. Especially recommended for those who plan to enter schools of engineering, the pre-requisite is general drafting.

Vocational drafting. Vocational drafting is a special class, meeting from 11:00 A.M. to 3:00 P.M. daily, for those who plan to enter employment as draftsmen or a school of engineering immediately upon graduation. Prerequisite: General drafting and approval of instructor.

Driver's Education. In driver's education, students learn to drive an automobile. He must meet thirty classroom hours of instruction and have six hours of practical driving of an automobile. He must be sixteen years of age before he can take the course. After finishing the course he must pass a written and practical test given by the Oklahoma State Highway Patrol Department to receive a driver's license.

Machine Shop. Machine shop 1 and 2 are composed of elementary bench and machine processes with a strong series of exercises and some projects.

Machine shop 3 and 4 are one-period courses, expanding the experiences given in machine shop 1 and 2.

Vocational Machine Shop. Vocational machine shop is a three-hour course (11:00 A.M. to 3:00 P.M.), planned to train students to enter local machine shops upon graduation. Prerequisite: Machine shop 1 and 2 and approval of instructor.

Woodwork. Woodwork 1 and 2 are essentially bench work or hand woodworking with a few of the machines available for use of the students in performing some of the more laborious processes.

Woodwork 3 and 4 students are introduced fully to the practices involved in working wood by machinery. Projects are larger and more involved and present more difficult operations and processes in their construction. The prerequisites to this course are woodwork 1 and 2.

Auto Mechanics. Auto mechanics is a beginning course with emphasis on studying the operation of the various parts of the automobile. Work is done on school-owned motors and other parts of the car - open to

juniors and seniors only.

Vocational Automotive Mechanics. Vocational automotive mechanics is designed to provide the students with training to earn a livelihood in the field of automotive mechanics.

Vocational automotive mechanics prepares students in the eleventh and twelfth grades in any area of automotive maintenance.

Auto mechanics is generally a prerequisite to this vocational course. Vocational automotive mechanics covers two years of work, sufficient to give work experiences of one thousand hours or more. Three hours per day, five days per week. Prerequisite: approval of instructor.

Carpentry. A course in vocational carpentry is a study of the art of working with wood in the construction of buildings. The course covers practical work as well as related study of technical information as it applies to this field. Prerequisite: approval of instructor.

Enrollment. The industrial education program has grown tremendously in the last eight years. The enrollment for the school year 1957-1958 is shown on Table VI, page 38.

Subject Content: The subject content in the Bartlesville school system is organized so as to meet the needs of the community. Approaches used as a basis for the pattern of organization of teaching content in the course were: (1) investigation of industry and occupational distribution of workers in the community, (2) general attitude of the community toward its educational program, and (3) future normal educational needs of majority of students.

TABLE VI

ENROLLMENT

School	Teacher	No. Period	Grade	Enrollment	Total
Central High					
General Metal	Ward	6	7	234	
General Woodwork	Milburn	4	8	183	
Mechanical Drawing	Caldwell	3	9	66	
Mechanical Drawing	Caldwell	2	8	44	
Bench Woodwork	Milburn	2	9	48	
					575
Douglass High School					
General Shop	Smith	1	7-8	24	
Mechanical Drawing	Smith				
Woodwork	Smith	1	9	13	
					37
College High School					
Auto Mechanics	Schafer	3	10-11-12	61	
Driver Training	Schafer	3	10-11	96	
Driver Training	Jack	6	10-11	193	
Trade Auto Mechanics	Huston	3	10-11-12	19	
Diversified Occupations	White	6	10-12	27	
Electricity	Toalson	2	10-11-12	36	
Machine Shop	Johnson	3	10-11-12	48	
Trade Machine Shop	Johnson	3	11-12	17	
Mechanical Drawing I	Hathaway	2	10-11-12	52	
Mechanical Drawing II	Hathaway	1	10-11-12	29	
Trade Drafting	Hathaway	3	10-11-12	18	
Bench Woodwork	Toalson	1	10-11-12	20	
Machine Woodwork	Toalson	2	10-11-12	39	
Trade Carpentry	Kliener	6	10-11-12	25	
					680
Grand Total					1,292

Textbooks. The textbooks used in the Bartlesville industrial program are uniform throughout the school system. The textbooks used in the junior high schools are as follows:

1. Units in Hand Woodworking, by J. H. Douglass and R. H. Roberts.
2. Basic Woodworking Processes, by Herman Hjorth.
3. A Manual for Hand Woodworking, by DeWitt Hunt and John B. Tate.
4. Modern Metal Work, by Glazena.
5. Leather Craft, by Cherry.
6. Introduction to Applied Drawing, by Hale, McGinnis and Hill.
7. Mechanical Drawing, by Thomas E. French and Carl L. Svensen, 5th Edition.
8. New Essentials of Upholstery, by Herbert Bast.

Textbooks used in the high school industrial program are listed as follows:

1. Unit in Hand Woodworking, by J. H. Douglass and R. H. Roberts.
2. Machine Woodworking, by Robert E. Smith.
3. Basic Electricity, by E. W. Jones.
4. Carpentry for the Building Trade, by Lois.
5. Machine Shop Work, by Shuman.
6. Automotive Mechanics, by William H. Crouse.
7. Mechanical Drawing, by Thomas E. French and Carl L. Svensen, 5th Edition.
8. Architectural Drafting, by Hornung.
9. Technical Drafting, by Spencer.
10. Engineering Drawing, by French.

11. Sportsmanlike Driving, by American Auto Association.

Many reference books are used in mapping, piping and structural architectural drawing. Also, reference books are used in all industrial education subjects.

Physical Facilities: In preparing the following tables, the writer has attempted to present the appropriate size, location, and the amount of money invested in each school's industrial education program at Bartlesville.

TABLE VII

SIZE AND LOCATION OF SHOPS

School	Size of Shop or Room	Location
Central Junior High		
Woodwork	60' x 60'	Basement
Drafting	50' x 35'	Basement
General Shop	70' x 30'	Basement
College High		
Drafting	40' x 24'	Fieldhouse
Driver's Education	20' x 16'	Fieldhouse
Machine Shop	100' x 60'	Stadium
Mechanical Shop	60' x 38'	Fieldhouse
Electrical Shop	50' x 38'	Basement
Woodwork	$62\frac{1}{2}$' x $38\frac{1}{2}$'	Fieldhouse
Douglass		
General Shop	90' x 40'	Main Building

TABLE VIII

COST OF EQUIPMENT

Central Junior High			
Woodwork Shop		$4,000.00	
Metal Shop		3,500.00	
Drafting		4,000.00	
	TOTAL		$11,500.00
College High (Senior)			
Machine Shop		$35,000.00	
Auto Mechanics Shop		13,000.00	
Drafting Room		3,500.00	
Electrical Shop		1,500.00	
	TOTAL		$53,000.00
Douglass Junior High			
General Shop		$35,000.00	
	TOTAL		$35,000.00
	GRAND TOTAL		$99,500.00

A summary of this report will be given along with recommendations for further study and improvement of the Industrial Education Department in Bartlesville in the following chapter.

CHAPTER IV

SUMMARY AND RECOMMENDATIONS

The program of industrial education in the junior and senior high school has been undergoing a change in the last thirty years. A careful study of the history and development of industrial arts shows their influence on the present system of education. Two tables are presented that show the present physical facilities of the industrial education departments in Bartlesville city schools. A summarization of the courses of study and the educational values they offer to the community is presented.

Summary. The study includes the progress of industrial arts from the time of its beginning to the present time. Also presented is the European development and the American development and their influence on the present status of industrial education. History of the Bartlesville city schools' industrial education program, the professional preparation, experience, tenure, and special duties of the teachers are also brought out in this report. The type, size and location of the shops, the evaluation of each shop, and the enrollment of the industrial education department in each school are included in this report.

The Industrial Education Teachers. It was indicated that, generally, the teachers feel that a master's degree is desirable.

The teachers in industrial education seek employment during the

summer from the School Board to increase their earnings. The teachers spend 80 per cent of their time in the shop and the remaining 20 per cent teaching, by the use of visual aids, reports, and demonstrations.

Recommendations for Further Study. The writer recommends that industrial teachers should strive to become familiar with the history of the subject. This information can be an aid in motivating student interest. Teachers should expand their knowledge in as many fields as possible to meet the needs of the growing trend toward the general shop.

The subjective courses of study presented in this report should be used and improved by the teachers to include additional material as the need arises throughout the courses.

Teachers should realize they need to do a better job of advertising the industrial education program. This can be done through public relations. The public opinion of the industrial education program has a direct relation to its importance in the educational program.

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APPENDIX

Questionnaire

QUESTIONNAIRE

Department of Industrial Arts Education
Oklahoma State University
Stillwater, Oklahoma

A study of the Bartlesville City Schools Industrial Education Program:

Directions: Please fill in the blanks below as they apply to your school:

(Please Print)

1. Reported by _____ Position _____

   Name of School _____

   Junior High School _____ High School _____

2. School enrollment _____

3. Please fill in the blanks to indicate your daily teaching schedule (include all classes). Be specific, i.e. Woodwork, Bench Metal, Drawing, etc.

Period	Subject Taught	Ind. Arts	Trade	No. of Pupils	Grade
1.					
2.					
3.					
4.					
5.					
6.					

4. How many college credit hours do you have in Industrial Arts? ____

5. Are you working toward a degree at the present time? _____

6. Type of degree held _____

7. Certified to teach Industrial Arts? _____ Reimbursed Trade Courses? _____

8. How many years have you been teaching Industrial Arts? _____

9. Are you required to do maintenance work for the school? _____

10. When was Industrial Arts started in your school? _____

11. What Adult Education classes do you teach? _____

Ind. Arts	Trade

12. Are you employed by the school during the summer? _____

Type of employment? _____

13. Are girls permitted to enroll in Industrial Arts? _____

14. Are girls permitted to enroll in Trade Classes _____

15. List textbooks used in your classes.

Class	Name and Author of Textbook

16. Is Industrial Arts in your school organized as a Unit Shop, _____ General Shop _____, or both? _____.

17. Do you take your classes on field trips? _____

18. Are you allowed a certain amount per year to buy new tools and repair old ones? _____

19. Do your students have to pay a fee other than for the cost of material? _____ If so, how much? _____

20. For what are these funds used? _____

21. Where is your shop located? Main Building? _____ Separate Building? _____ Basement? _____

22. What is the size of your shop? _____ Length? _____ Width? _____

23. Do you have formal or informal organizations? _____

24. Do Students do all the organizing or does the teacher do it?

_____

COMMENTS:

VITA

Charles Walter Smith
Candidate for the Degree of
Master of Science

Report: INDUSTRIAL EDUCATION IN THE BARTLESVILLE CITY SCHOOLS
1957-58

Major: Industrial Arts Education

Biographical and Other Items:

Personal Data: Born in Tulsa, Oklahoma, January 1, 1924, the son of Silvester and Clara Smith.

Education: Attended grade school in Holdenville, Oklahoma; graduated from Holdenville's Lincoln High School in 1941; received the Bachelor of Science degree from Langston University with a Major in Industrial Arts, in May 26, 1950.

Professional Experiences: U.S. Army, February 13, 1943, to December 9, 1945, Sergeant, received Bronze Star Medallion in the Invasion of Luzon Island; Head of Athletics, taught Social Studies in the Holdenville School System, 1950-53; Taught Social Studies and was Head of Athletics at Douglass High School in Bartlesville, Oklahoma, 1953-1956; from 1956-1958 employed as an instructor of Industrial Arts, Social Studies and Coach in the Douglass Junior High School, Bartlesville, Oklahoma. In the summer of 1956, taught Jet Mechanics at Amarillo Air Force Base, Amarillo, Texas.

Member of Bartlesville Teachers Association, Oklahoma Teachers Association, National Teachers Association, Oklahoma Industrial Arts Association, Oklahoma Coaches and Officials Association, Alpha Phi Alpha Fraternity, Masonic Lodge, Knights of Phythias, American Legion.

REPORT TITLE: INDUSTRIAL EDUCATION IN THE BARTLESVILLE CITY SCHOOLS 1957-58

AUTHOR: Charles Walter Smith

REPORT ADVISOR: Cary L. Hill, Acting Head
School of Industrial Arts Education

The content and form have been checked and approved by the author and report advisor. Changes or corrections in the report are not made by the Graduate School office or by any committee. The copies are sent to the bindery just as they are approved by the author and faculty advisor.

TYPIST: Rose Chamberlain