INDUSTRIAL ARTS IN THE SMALL NEGRO HIGH SCHOOL AND THE CONTRIBUTIONS IT MAKES TO COMMUNITY LIFE

By

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C.R.H.

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CHAPTER I

THE PROBLEM AND ITS IMPLICATIONS

A realization that the manipulative ability of the hand is an asset to any man when fame and fortune are absent was apparent before the Renaissance. Rousseau is said to have warned the young men of wealth in France by saying: "A revolution is approaching, and the man who has a good trade will be well taken care of." (Bennett, 1, page 11.) Although this type of training was not the responsibility of the school, it was considered necessary that shop training be provided. Fellenberg later discovered that formal scholastic education provided little contact with the working world. He saw the need for an educational reformation. This new type of education would prepare each individual to live a useful, happy and normal life and be educated for his own sphere. This called for an extended educational program including academical and mechanical provisions in the school.

The small Negro communities of today give reasons to believe that an educational reformation based on this philosophy would certainly contribute to community life and development. Progress is being made in some communities but there still remain unfavorable pictures of shopwork conditions in some of the small one shop schools.

Industrial Arts in the Washington High School of Stillwater started as a part of the school curriculum in 1936. The aim and purpose for adding this program to the curriculum is not known by the writer but to make a study of this school and community in order to propose an industrial arts program that will make contributions to this community seemed a good aim. The Washington School is composed of pupils from the first through the twelfth grades. The proposal of an industrial arts program that will prepare boys of junior and senior high school age to make contributions to the community is the motive of this study.

The Origin of the Problem. To train Negro students in a type of industrial arts program that will be benificial to him in making the community a better place to live has been realized since the early ninteenth century. Although steps have been made in some schools to accomplish this aim, evidence shows that the purpose is far from being fulfilled. Since it may be assumed that the industrial arts program now in operation is not fully meeting the industrial arts needs of the small community, it was thought advisable to make a study of a small high school and the community to find out the prospects that seem best suited to improve Negro community life. With this thought in mind, Dr. DeWitt T. Hunt, Head of the Department of Industrial Arts and Engineering Shopwork, Oklahoma Agricultural and Mechanical College, who served as adviser for the writer, received information that plans were being made for the construction of a new Negro High School in Stillwater, Oklahoma.

After being promised full cooperation from Mr. L. A. Ward, now principal of the present Washington School at Stillwater, it was agreed that the problem of proposing an industrial arts program that will meet community needs be restricted to this school and community. It was decided that the subject for the thesis would be: Industrial Arts in the Small Negro High School and the Contributions it Makes to Community Life.

Needs for the Study. In the past, the industrial arts program provided for small Negro high schools have probably been installed without authentic knowledge of the needs of the Negro community. Studies pertaining to industrial arts needs in the small Negro community are scarce and far apart. The need for such a study is made mandatory considering these shortages. In order to prepare a type of industrial arts program that would equip students with knowledge and experiences sufficient to contribute to community life, a study of this type would seem necessary.

Delimitations. The purpose of this study is to use the material gathered as a basis for proposing an industrial arts program that will contribute to the Negro community of Stillwater, Oklahoma. An attempt was made to obtain information from male students taking or who had taken shop courses and seventy-eight parents living in the community. Information was received from twenty-nine students and thirty-six parents. This affords some limitations as to the validity of this study.

Methods of Research Used. The methods used for obtaining this information are the questionnaire, the personal interview and the historical research. The information received on the operations performed by the students, the tools used by the students, and the cultural and mechanical environment of students and school patrons was obtained by questionnaire. Information received pertaining to shop instruction, shop equipment and community location and provisions was received from personal interviews with the school officials and families of the community. The information on the history of industrial education in the Negro Schools was obtained by historical research. The information asked for in the questionnaire was partially obtained from the Minnesota Mechanical Ability Tests. (Paterson and others.)

Similar Studies. As stated previously, studies of this type have been very rare. Augustus C. Phillips made a study of the industrial education for Negroes in the South Atlantic Region in 1941 which did not include the state of Oklahoma. This study proposed a program of industrial education that will prepare Negro Youth to be more employable after graduation from high school. Phail Wynn made a survey of the separate schools of Oklahoma and proposed a program for these schools in 1950. The program proposed in this survey was designed to meet community needs by preparing students for available job opportunities as well as for college. Since no program was proposed specifically for the Washington High School in Stillwater, which will make contributions to this community, there is very little similarity with this study.

Available Literature on This Subject. Literature on industrial arts in the Negro High Schools can be found in some bulletins published in the Office of Education, Washington, D. C. The Journal of Negro Education is the most reliable source. Other information pertaining to Negro practical education programs in the high schools is concerned with vocational industrial education. At present, the industrial arts literature is mostly confined to studies made for college degrees leading to teaching credentials in this field.

Predicted Views of the Results of This Study. Since plans are under way to construct a new Negro High School at Stillwater, Oklahoma, it is hoped that this study along with the proposed industrial arts program will be considered in planning the new industrial arts building. The type of courses listed, equipment proposed and the shop training recommended are based on the information received from the questionnaire given to the students of Washington High School and those sent out to the parents in this community. Based on this information, predicted results of this program should prove helpful to the Negro Community of Stillwater, Oklahoma.

The Method of Presenting the Material. This study shall begin with a philosophy of education as related to industrial arts. This chapter will present the writer's philosophy of education and what part industrial arts occupies in the program for giving youth a general education.

The objectives of education and the industrial arts objectives will be discussed. Following this chapter will be a chapter referring to the history of industrial education in the Negro schools and the progress made up to the present time. The survey of the Washington High School follows this chapter with information obtained from the male students that answered the questionnaire and the conclusions reached from this information. To increase the validity of the study, the survey of the Negro Community follows. Information received from the parents will be presented together with a discussion of how this information will be used in proposing the industrial arts program for the Washington High School. The present physical provisions for industrial arts and the proposed provisions for the new shop building will be presented in the next chapter. This will include a floor plan of the present shop and a floor plan of the proposed shop with a discussion of equipment and shop training in both the old and the new shops. Conclusions and recommendations will follow.

In this chapter the writer has indicated the origin of this study and the need for such a study. The available literature on the subject has been discussed. The predicted views of the results of this study and the method of presenting the study were also indicated. It is thought that a philosophy of education as it relates to industrial arts and the history of this phase of education in the Negro schools should be considered before presenting the results of the problem and the proposed new industrial arts program.

CHAPTER II

A PHILOSOPHY OF EDUCATION AS RELATED TO INDUSTRIAL ARTS

American teachers, educational thinkers and American people as a whole have never been satisfied with the achievements of education during a particular era. This has caused a steady changing of educational thought throughout the nation even including the smallest community. Whether the changes have helped or hindered the community; the new offerings were thought to make the school work correspond with the needs of the community. The changes made concurrent to community needs are thought to provide in all courses a form of subject matter which will result in every pupil gaining a broad general education.

Industrial arts is a part of general education. Since this is true, a curriculum that is to meet the needs of a community should have sufficient industrial courses that will provide experience and knowledge of industrial processes applicable to the community. The purpose of this chapter is to explain the importance of a varied industrial arts program in the curriculum and its contributions to general education.

PART A

SECONDARY EDUCATION, PAST, PRESENT AND FUTURE

Social needs vary historically; hence subject matter adapted to needs that no longer exist should not be retained,

and subject matter adapted to new needs should be introduced. Social needs also vary between different groups of students of a community; hence the material in a particular curriculum should be varied accordingly. This section of the chapter will show the change of philosophies in secondary education pertinent to community needs, from the fifteenth century to the present time.

Early Philosophies. It is known that education for pupils of secondary or high school grade from the fifteenth to the middle eighteenth centuries was aristocratic in purpose. This is illustrated in the writings of Martin Luther, who, in the sixteenth century, was active in stimulating the organization of both the elementary and secondary schools. His idea was that the elementary schools were for children and the secondary schools were for "promising lads." The selective purpose of the secondary school as planned by Martin Luther is well stated in this quotation from Parker's book, Methods of Teaching in High Schools, (Parker, 13, page 7.)

> I hold it to be incumbent on those in authority to command their subjects to keep their children at school; for it is, beyond doubt, their duty to ensure the permanence of the above named offices and positions, so that preachers, jurists, curates, scribes, physicians, schoolmasters, and the like may not fail from among us; for we cannot do without them....Therefore, let Magistrates lay these things to heart, and let them keep a vigilant lookout; and, wherever they see a promising lad, have him pledged at school.

This idea was also prevalent in America in the seventeenth century.

These schools in America were then called Latin Grammar Schools. No school was thought of for the great body of citizens which included the middle or lower-middle class but it was expected that everyone should know how to read.

Apprenticeship and Education. Apprenticeship was the chief educational institution for the middle-class youth of the seventeenth and middle eighteenth century. Through apprenticeship, the youth was supposed to receive a general preparation for life. He was given moral, religious, and civic instruction while learning his craft. The masters were to teach their apprentices to "at least be able to read the Scriptures, and other profitable 'Books' printed in the 'English Tongue' and the knowledge of the capital Laws." (Bennett, 1, page 268.)

Developments to Cause Changes in Philosophies. As the Latin grammar schools became more remote from the needs of practical life, and as democratic conditions and economic needs grew quickly in the American colonies in the middle eighteenth century, there developed a demand for a type of school that would offer training in various practical pursuits. This brought about the establishing of academies which were to provide courses which would serve for practical purposes and meet the needs of the community. Benjamin Franklin's Academy, which opened in Philadelphia in 1751 was one example.

A further demand for more institutions to meet the needs of the community caused the establishment of what was later

called the high school. They were then called free academies. "The first of these schools was opened in Boston in 1821 and took the name English High School in 1824." (Parker, 13, Page 8.) Its purpose was recorded by the Boston school committee as follows:

> The mode of education now adopted and the branches of knowledge that are taught at our English grammer schools are not sufficiently extensive nor otherwise calculated to bring the powers of the mind into operation nor to qualify a youth to fill usefully and respectably many of those stations, both public and private, in which he may be placed. A parent who wishes to give a child an education that shall fit him for active life, and shall serve as a foundation for eminence in his profession, whether Mercantile or Mechanical, is under the necessity of giving him a different education from any which our public schools now furnish. Hence many children are separated from their parents and sent to private academies in this vicinity to acquire that instruction which cannot be obtained at the public seminaries. (Parker, 13, - pages 9 and 10.)

Although, the high schools were not offering industrial courses that would provide the all-round growth of the individual, the need for it was expressed by the parents. A deviation from the philosophy that secondary education was only for the upper-class citizens was also recognizable at this time. Institutions were being organized for the purpose of training all types of students.

Current Beliefs. The most recent development in educational history is the rapid change of purposes for high schools throughout the country. This change has affected the school curriculum, the teacher and the community of which the school is a part.

The belief that economic development runs parallel with educational development is agreed upon by most educators. If the school is to serve its purpose, it must change along with economic cycles or remain an island separated from the true aspects of life.

General Education vs Vocational Education. Education in America is thought to promote better living and to develop democratic ideals for all its citizens. Students wishing to pursue a specialized type of education should have that type of education provided for them in the school. A student who does not wish to specialize in any particular phase of education should also be provided with a type of education that will either prepare him for entrance into higher education or give him practical training of value for intelligent living.

The first type of education which is thought of as vocational education is offered in the public schools to increase the earning power of the individual hence, a better living standard and environment is created. Many of the advantages of life are dependent upon the ability to earn money. The most certain way to meet this need is for the students to acquire during his school years a salable skill.

The second type of education which is thought of as general education should be provided to equip all American youth to live democratically with satisfaction to themselves and profit to society as home members, workers, and citizens.

A curriculum organized to provide a general education will meet most needs of high school students in a community. Only a few boys finishing high school will receive jobs in the community that require skill training but all youth need instruction in human relations, civic obligations, consumer education, work experience and physical and emotional health.

Definitions of Educational Terms. In order to see clearly the current expectations of education, selected educational terms are defined. These terms are defined with the purpose of clarifying their relationship to general education.

Since education is the core of this writing, a sound definition of education would seem logical. Spencer defined education as "Preparation for complete living." (Parker, 13,-page 9.) Spencer lists the following kinds of activities which constitute complete living:

1. Those activities which directly minister to self preservation.
2. Those activities which, by securing the necessaries of life, indirectly minister to self-preservation.
3. Those activities which have for their end the rearing and discipline of offspring.
4. Those activities which are involved in the maintenance of proper social and political relations.
5. Those miscellaneous activities which make up the leisure part of life, devoted to the gratification of the tastes and feelings.

It is recognized that industrial arts courses will certainly contribute to those activities in part 1, 2 and 5.

The proceeding definition of industrial arts and the objectives which follows, should undoubtedly varify this statement. The thought that general education would include industrial arts is also brought to light.

John Dewey says "Education is that reconstruction or reorganization of experience which adds to the meaning of experience, and which increases ability to direct the course of subsequent experience." (Dewey, 6, page 90.) This definition seems to emphasize the segregation of old habits and methods, and readjusting them to meet new and changing situations.

Terms related to education in some particular way are numerous. The writer offers definitions of the following terms because of their importance to the subject and for the purpose of showing their relationship to education:

> Industrial Education. A generic term including all educational activities concerned with modern industry and crafts, their raw materials, products, machines, personnel and problems. It therefore includes both industrial arts and vocational industrial education. (Friese, 7, page 7.)
>
> Vocational Education. Knowledge, skills, and attitudes that fit an individual, wholly or in part, for a definite occupation or vocation, the pursuit of which equips him for successful living. (Struck, 17, page 5.)
>
> Industrial Arts. The study of materials and of the desirable changes made by hand or by the several manufacturing processes from the raw state into products designed to meet the consumer's needs and comforts for daily living. (Newkirk and Johnson, 12, Page 5.)
>
> Curriculum. The selection, organization, and administration of a body of subject matter designed to lead the pupil on to some definite life objective. (Caswell-Campbell, 5, page 65.)

These quoted definitions provide cause to believe that a curriculum designed to meet the personal and social needs of a community, would include some form of industrial education which, includes industrial arts and vocational industrial education. It is desirable that experiences follow students into their home, civic, religious, vocational and recreational life. These expressions should exert some influence on the major problems of each of these large social areas of living.

Schools are also composed of pupils with varied interests, intelligence and aptitudes. In order to meet the needs of these pupils, a broad program of industrial arts should be available to those pupils that are interested in industrial processes. Pupils with the appropriate interests, intelligence and aptitudes to enter into a vocation should also have that opportunity in the schools.

Objectives of Education. Educators of America are aware that education should strive to contribute significantly to the democratic ideals of the nation. To do this, there should be designed a list of objectives which will correlate with these ideals.

The Educational Policies Commission has proposed a group of objectives for American education which are considered the finest statements of objectives leading toward the democratic ideals. The four purposes of education are outlined as follows:

> The first of these major purposes has to do with personal growth of the individual. Command of the fundamental tools of learning, an inquiring mind, desirable health habits and suitable leisure time interests are results of the educative process which society desires for every one. These are designated as the objectives of self-realization.
>
> The second major purpose concerns the problem of getting along with other people, the ability to work and play with others, to enjoy a varied social life both within and outside the home, to appreciate and observe the ideals of family life, are important goals of education. These are described as the objectives of human relationship.
>
> The third major purpose relates to the earning and spending of an income. Information as to the requirements and opportunities in various types of work, knowledge of the satisfactions of good workmanship and of success in a chosen occupation, and understanding of methods of safeguarding the buyer's interests, are all matters properly within the scope of the school program. These are classified as the objectives of economic efficiency.
>
> The fourth major purpose is centered around participation in civic affairs. The development of respect for differences of opinion, understanding of the processes of a democratic society, and appreciation of the disparities of human circumstances as well as of methods for contributing to the general welfare are responsibilities which the system of public education cannot ignore. These are the objectives of civic responsibility. (Wahlquist, 18, pages 301-302.)

These objectives summarize the aims of education. Quite frequently the school curriculum must be modified to fit the aims originated by educational objectives. The importance of this fact is not always realized by administrators and community leaders. If the purpose for education is modified to meet the needs of youth and the community; the logical thing to do would be to modify the school curriculum accordingly.

PART B

Industrial Arts in Secondary Schools

Industrial arts as a subject in the public schools has passed through a series of changes since it was first introduced into the United States. Manual training as it was first called was justified on the basis of training students for manual work with the hand and eye. Sometime later, it became common practice to justify industrial work in the schools on the basis of trade or pre-vocational values. Since 1908, educational leaders have expressed the opinion that industrial arts is essential and will extend the values of the regular school program. Today the primary objective of industrial arts in the secondary schools is general education with increasing emphasis on skill and technical information as the student progresses to the last one or two years of high school. This section of the chapter is designed to show the importance of industrial arts in the curriculum and its relationship to general education.

The Objectives of Industrial Arts. Since industrial arts is a part of general education, the important objectives are designed to show relationship to general education. Objectives of industrial arts with purposes intended for general educational use as planned by Wilber are:

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 - in so far as possible - experiences in, the basis 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, leadership and followership, and tact.

8. To develop a certain amount of skill in a number of basic industrial processes. (Wilber, 19, page 43.)

Relationship of Industrial Arts to General Education. The purposes of general education as enumerated by Wilber are: (1) to transmit a way of life, (2) to improve and reconstruct that way of life, and (3) to meet the needs of individuals. (Wilber, 19, page 3.) A close observation of the objectives of industrial arts will reveal the similarity of these objectives and the purposes of general education. "If as has been pointed out, an important purpose of education relates to the transmission of the social culture, then the vital place which industry holds in the American way of life, should certainly call for major emphasis upon those phases of the program that deal with its exemplification in the schools." (Wilber, 19, page 20.) When students are given the opportunity to plan and complete projects in the shops, using a variety of tools and construction materials, they have opportunity to improve and reconstruct the American industrial way of life.

Adjustment to modern conditions of living is definitely one of the needs of youth. Industrial arts in the schools will supply the type of instruction necessary so that the youth of today will not have his hands shackled in relation to common life situations resulting from the development of the present industrial society. If students are to receive an education that will be satisfying to them in their future living, those subjects must be offered that will lend themselves to the all-round growth of the individual. Boys are endowed by nature with impulses which give them a readiness for industrial arts instruction. This natural appeal leads to effective learning. The relationship of industrial arts to general education is without a doubt more noticeable than any other phase of education.

Relationship of Industrial Arts to Vocational Education. Industrial arts will help boys get an understanding of the possibilities for earning a living in the vocations that are a part of modern industry. "Industrial arts activities may, to some extent, contribute to the meeting of certain needs of children in the economic-vocational field. It has been noted that a child or a youth seems to have a basic need to feel that he is growing toward a position of economic independence and a place in the vocational scheme of things. An industrial arts program provides try-out opportunities where some of the important occupational fields may be sampled." (Wilber, 19, pages 27, 28.)

Industrial arts and vocational industrial education assume new importance in current economic developments.

Part of this increased importance is due to the fact that the subjects represent occupational life either for guidance or training or interpretative purposes. These subjects assume greater importance also because they are of a nature which abounds in problem-solving situations.

PART C

A Controlling Philosophy for Industrial Education in the Negro Secondary School

There is usually a primary and secondary purpose of all phases of education. The task of judging what constitute the primary and secondary purposes of a particular subject matter is to determine what needs must be met that will contribute to the democratic way of life.

Expected outcomes of education, have already been discussed. Since improving the American culture in the significant activities of life is the primary purpose of education, the administrators should not omit any materials from the curricula which help to make direct contact with the problems of daily experiences. This section of the chapter will present a controlling philosophy of industrial arts and vocational industrial education as part of an educational program.

Industrial Arts Courses. Industrial arts courses may be of two types. The core, "those experiences which cut across subject matter lines and satisfy general needs of youth and broad-field courses which satisfy definite needs of adolescents to explore certain fields in which they have an interest, but

not a highly specialized interest." (Phillips, 15, page 123.) The first type of courses should be a part of the requirements for graduation from high school. These courses are needed to complete student development, encourage aesthetic thinking and to improve accuracy. The activity approach to these "core subjects satisfy many of the biological, psychological, and educational needs of the individual. Unless such needs are satisfied in a normal and constructive way, the individual will be forced to destructive and abnormal forms of behavior.

The "broad-field" courses may be a part of the requirements for graduation or they may be electives. All boys should have the opportunity to explore several examples of industrial activity in order to discover their aptitudes and abilities to do certain jobs. Industrial arts courses of this type gives an over-all training in industrial adaptability that is most helpful for boys in a small community. It is simpler for them to change their type of work from time to time. Boys often have occasion to use different tools and materials to build or repair some needed items for the home or community.

The General Shop and the Unit Shop. Both the unit shop and the general shop are recommended as basic phases of industrial arts programs. The general shop plan of organization is recommended for schools that have only one or two shops and a limited teaching staff.

> Shops that are equipped to teach two or more types of industrial arts work, for example, wood, metal, and electrical work, are general shops. The unit shop or unit general shop is recommended for schools that have four or more shops and a fairly large teaching staff. Shops that are equipped to teach one type of industrial arts work, such as wood, metal, or plastics are unit shops. (Newkirk and Johnson, 12, page 14.)

The general shop or community shop as it is frequently called, makes possible an adequate industrial arts program for the small Negro community school. The high schools in the small Negro communities include grades from the ninth through the twelfth. A general shop which offers a number of industrial arts courses will provide exploration and guidance in the first two years of high school which, are the aims of the junior high schools in larger localities.

Trade Preparatory Courses. Some students will wish to enter a trade after graduation from high school. In order to meet this situation, the industrial education courses should tend to become increasingly technical and decreasingly exploratory in nature in the upper grades of the high school. Courses at this level should provide equipment and the time available for students to learn good work habits, semi-skills, and information necessary for them to enter a trade. It is thought however, that students taking courses for trade preparatory purposes will have had previous experiences in industrial arts to give them the necessary aptitudes and ability to perform more technical operations.

Contributions which Trade Preparatory Courses May Make to the Negro Community. The attitude should not be taken that

employment for Negro boys will always be limited to those occupations in which they now work. It is assumed that the small Negro community can afford a limited number of skilled workmen.

> "While it is true that there are communities where white and Negro citizens live and work together without great difficulties, there are very few such mixed communities where the Negro has become a full-scale participant in community life. Usually he is "in" but not "of" the community. The result is that we are all poorer because of the Negro's lack of opportunity to make his own important contribution." (Lund, 11, page 16.)

Trade preparatory training is often helpful to those employed persons who have not yet secured jobs of the kind they desire or jobs that would be more essential to labor needs of the home community. Negro boys should be trained, so far as is feasible, where they are likely to be needed. This will help stabilize the entire community.

The General Vocational Education Shop. In small communities, training for occupations on a pre-employment basis should be somewhat general rather than specific and direct. Jobs requiring knowledge of one particular trade are not plentiful in a community whereas, workers prepared to do a combination of seasonal jobs, each differing from the other would be useful. General vocational education taught in the general vocational education shop "is given to prepare persons for wage-earning employment in semi-skilled or highly specialized jobs." (Struck, 17, page 40.) Training of this type is thought to help make Negro boys more employable and

will reduce the time and cost of breaking them in on new jobs.

The purpose of this chapter has been to present the objectives of education, of industrial arts and to show their relationship to general education also, to present means of regulating and guiding an industrial education program in the small, Negro community. The writer makes the assumption that industrial arts and vocational education are complementary parts of a complete industrial education program. It is thought that before a course of study can be planned in industrial education, the subject matter should be chosen on the basis of whether or not it contributes towards meeting the specific objectives which the administrator has in mind.

CHAPTER III

HISTORY OF INDUSTRIAL EDUCATION IN THE NEGRO SCHOOLS

In all generations, those who have interested themselves in advancement have looked to some form of industrial education as the lever to elevate the standard in our American educational system. Industrial development to a large extent has meant the disappearance of poverty and discontentment. Progressive leadership, group organizations and sufficient funds have meant much to the advancement of industrial education in the Negro high schools. This has in some instances brought about better living conditions and better work opportunities for many Negro citizens of the nation.

PART A

Attempts at Industrial Education in America Before the Civil War

The notion that Negroes need to learn first how to earn a livelihood was apparent thirty-five years before the Civil War to Negro leaders. Unfortunately, years of slavery had caused the average Negro to be skeptical of activating a form of education that required the use of the hands. Hence, the idea of any form of industrial education was at a disadvantage.

Martin R. Delany, a Pennsylvania Negro of prominence in 1824, in criticizing the current notions about Negro education said:

> A people must be a business people and have more to depend upon than mere help in people's houses and hotels, before they are either able to support or capable of properly appreciating the services of professional men among them. This has been one of our great mistakes, we have gone in advance of ourselves. We have commenced at the super-structure of the building, instead of the foundation - at the top instead of the bottom. We should first be mechanics and common tradesmen, and professions as a matter of course would grow out of the wealth made thereby. (Brawley, 3, page 3.)

This does not imply that industrial education for Negroes had its beginning at this time. The origin of industrial education in general goes back to the years before the Industrial Revolution.

Steps Taken before 1800. In Virginia in 1727, "it was ordered that David James, a free Negro boy, should be bound to one James Isdel, who was to teach him to read the Bible distinctly, also the trade of a gunsmith." (Brawley, 3, page 3.) The destitute condition of free Negroes and their difficulty in adjusting themselves to the situation in which they were placed, excited the solicitude of many persons who were disposed to be friendly. Thaddeus Kosciuszko in 1765, left considerable property in Cincinnati for the improvement of those whose unfortunate situation had touched his heart. This property was to be used in giving the free Negroes an education in trades or otherwise. The Quakers took the most definite steps forward. In 1773, a brick school was established in Philadelphia for the purpose of educating free Negroes and in the course of their training they placed emphasis on sewing and other simple arts.

The Abolition Societies. During the latter part of the eighteenth century, the Abolition Societies came into being. These societies were not only interested in emancipation, but were also concerned with the property, employment and conduct of the freedmen in their province. In 1794, the American Convention of Abolition Societies convened and approved addresses to be sent to the free Africans and other free people of color in the United States. Among other things, the addresses contained this quotation taken from Brawley's book on Early Effort for Industrial Education: (Brawley, 3, page 5.)

> Teach your children useful trades, or to labor with their hands in cultivating the earth. These employments are favorable to health and virtue. In the choice of masters, who are to instruct them in the above branches of business, prefer those who will work with them; by this means they will acquire habits of industry, and be better preserved from vice than if they worked alone, or under the eye of persons less interested in their welfare.

The members of the Abolition Societies were the most active and vocal friends of the Negroes. In Pennsylvania and neighboring states they eagerly promoted schools for slaves and freedmen. In Virginia, statutes excluded persons belonging to this society from teaching in that colony because of their influence.

The Negro Industrial Progress Meets Opposition in the North. As far back as 1708 white mechanics in Pennsylvania had protested against the hiring out of Negro mechanics. In the early years of the ninteenth century the tendency towards restriction was even more visible. In Ohio about 1820, Mechanics' Societies directed movements against Negroes, and a master

mechanic was publicly tried for assisting a young Negro to learn a trade. When a Negro cabinetmaker purchased his freedom in Kentucky and went to Cincinnati, he found great difficulty in getting employment. An Englishman finally gave him work, but the other employees struck. Incidents such as those just stated were typical of situations the Negro had to face throughout the North. Abolitionists in spite of these handicaps, still insisted that the Negro learn fundamental principles. Many who were actively interested in the welfare of the Negro saw that the freedmen were quite untrained for any place in a fast growing industrial community.

Oppositions in the South Before the Civil War. In the South labor was predominately in the hands of the slaves. In some instances the free men of color prospered, and individual masons or carpenters were sometime very efficient. On large plantations, there were many slaves working in several different trades. In the course of time, these situations faced a great dilemma. A man could go only a little way in intelligence and skill without desiring to be his own master. Men could hardly be increasingly efficient and at the same time satisfied in a states of bondage. The existance of this situation caused the education of the Negro to be more repressive. ". . . thus Georgia in 1833 enacted a law stating that no one should permit a Negro to transact business for him in writing, and in 1845 said that slaves and free Negroes could not take contracts to build or repair houses." (Brawley, 3, page 6.)

Proposed Manual Labor School. The Pestalozzi experiment with the Swiss orphan children at Fellenburg and Hofwyl was soon transmitted to America and the emancipationists had hoped to solve the Negro problem by this process. Frederick Douglass, who so ardently favored industrial training, was invited by Mrs. Harriet Beecher Stowe to confer with her about a plan which she was considering for the advancement of the free colored people of the country. The conference with Mrs. Stowe centered around a plan for some type of school that would be helpful to the free men of color. Douglass expressed himself as opposed to a school which would teach Latin and Greek. Since the colored people were shut out from all workshops and were only barbers, waiters, and coachmen, they needed more to learn how to make a good living, than to learn Latin and Greek. Thus, at Rochester, New York, in 1853, Frederick Douglass was elected president of a convention which drew up a plan for a Manual Labor School. It was proposed that Harriet Beecher Stowe go to England to raise money for the proposed institution. "It was believed by the convention that the successful establishment and conduct of such an institution of learning would train youth to be self-reliant and skilled workmen, fitted to hold their own in the struggle of life in the conditions prevailing here." (Bond, 2, page 403.) The plan of the convention had unfortunate development. While in England Mrs. Stowe was criticized for raising money for this cause and gave up the idea of a school. This left Frederick Douglass in a very awkward position but the need for industrial training for Negroes continued to be expressed.

One of the most characteristic of Douglass' utterances was the editorial in his own paper entitled "Learn Trades or Starve", in which is quoted:

> The American Colonization Society tells you to go to Liberia. Mr. Bibb tells you to go to Canada. Others tell you to go to school. We tell you to go to work; and to work you must go or die. Men are not valued in this country, or in any country, for what they are; they are valued for what they can do. (Brawley, 3, page 11.)

Douglass believed that Negroes could not be men until they were able to do the work of men. Which meant to build as well as live in houses and make as well as wear shoes.

The speeches and writings of Frederick Douglass still hold a powerful inspiration for the Negro masses. During World War II a ship was named Frederick Douglass; built in the Baltimore dock-yard where Frederick Douglass himself worked as a slave and from which, disguised as a sailor, made his escape to freedom.

PART B

Industrial Education Becomes a Reality in the Negro Schools

Several years after the Civil War, the idea of industrial training for Negroes took firm hold in the minds of the people. Upon the failure of the Negro to achieve a satisfactory status by spectacular political means there came the realization that his only chance of accomplishment was by the slow process of economic and cultural advancement. But even in this course the obstacles encountered have been extremely discouraging.

The economic and cultural advancement was momentarily handicapped by divided counsel in his own group. One group was convinced that the surest means of advancement was through classical and professional education. The other group believed that the greatest progress could be made by the more practical course of technical and industrial education. Descriptions of several schools established especially for training in industrial education from 1868 to 1920, would make it appear that the second group had better results.

Hampton Institute. Hampton Institute in Hampton, Virginia was established in 1868 by General Samuel C. Armstrong. General Armstrong saw the great need of young colored people who could become teachers of their race. The objectives of the school was:

> ... to train selected Negro youths who should go out and teach and lead their people, first by example, by getting land and homes, to give them not a dollar that they could earn for themselves; to teach respect for labor, to replace stupid drudgery with skilled hands, and to those ends to build up an industrial system for the sake not only of self-support and intelligent labor, but also for the sake of character. (Bennett, 1, page 244.)

General Armstrong was the first principal of Hampton Institute and the school opened with one teacher, one matron and fifteen boarding pupils. From time to time new industries were added which, gave reason to add more teachers. The development of the industrial work continued until the school became a model for other industrial schools yet to be established.

Booker T. Washington and Tuskegee Institute. At the time when men of influence in the south were urging a complete stoppage

of all educational effort that was not vocational, many Negroes were bitterly opposed to the principle. Booker T. Washington, a Hampton graduate, became principal of Tuskegee Institute in 1881. The interpretation of the Hampton idea to the Negro was the great mission of Booker T. Washington. Tuskegee soon provided visible evidence of what the Negro could do for himself, and the members of the race for the first time began to shoulder their own responsibilities toward the economic development of the country.

The principles expressed by Booker T. Washington did not enrich the minds of all the people. This fact is represented in this quotation taken from the Negro Schools in the Southern States by Jones. (Jones, 8, page 23.)

> There were those of his own race who saw in Booker T. Washingtons' policy and educational practice merely an acceptance of economic, intellectual, and social subordination, but in spite of this, schools like Hampton and Tuskegee sprang up all over the south under the leadership of both white and coloured teachers.

The early industrial schools began as institutional substitutes for apprenticeship, Under the stimulation of the extraordinary personality and leadership of Booker T. Washington their usefulness became clearly apparent.

Conditions Bring about a Change. In view of the general conditions prevailing in the southern Negro communities in the latter part of the nineteenth century, a confernece of Negro workers and farmers met at Tuskegee Institute in 1893. One of the resolutions adopted at the conference was .. "that a larger

number of our young people be taught trades, and that they be urged to prepare themselves to enter as largely as possible all the various vocations of life." (Jones, 8, page 90.) The text of the conference was printed and sent out to the various school principals in the southern communities and cities. From 1910 to 1915, instruction in shop work was added to many school curriculums in the separate schools. Shop work in the majority of the high schools consisted of woodworking. A few schools added shop work in other fields. (For example, a school in South Carolina in 1910, included in its school calendar notes on industrial work as follows:)

> 2. Industrial Courses.
> Grades I to III do not have any regular industrial training, but hand work of various kinds is included in the curriculum for them.
> Grades IV to VII devote one day each week to industrial training.
> Grades VIII to X spend half a day in the class room, and half a day on the farm, in shops, sewing-room, laundry, or kitchen.
> The industries are native basketry, blacksmithing and wheelwrighting, carpentry, cobbling and harness-making; some automobile repairing and instruction in the care of the school's pumping and power engines are also included. The girls have cooking, sewing, laundry work and other instruction in home-making. (Jones, 8, page 82, 83.)

Charles W. Cansler in his "Story of a Colored Family of Eastern Tennessee", Three Generations, said:

> The year 1915 marked a departure from the trends that had characterized educational training in the Negro public schools of our city since their establishment. The change was especially marked and noticeable in our high school. Up to this period we had given our pupils no form of hand training, and had employed only the stereotyped method of book teaching in vogue generally throughout the country.

> While many of the more progressive schools had adopted some form or forms of hand training as a part of their curricula, our school system had not done so, and any request that it be done was usually met with the reply "it would be a fine thing to do, but we have no money with which to purchase the necessary extra teachers." But when the new type of work was introduced in the schools with necessary equipment purchased and extra teachers employed, there was not a single protest registered by any taxpayer as to the small increase in taxes necessary to take care of this extra school expense...
>
> In so far as I know our shop never produced a carpenter nor our home economics department a professional cook or an expert seamtress, but it gave the girls and boys a fundamental training in hand work that would make a further pursuance of it easier. Any boy who had those three years of carpentry in our old high school had no difficulty in hanging a door, or putting in a pane of glass later when he became head of a family...
>
> Our method in those days was to give our students a broad general training along academic lines, with a degree of skill along industrial lines that would be serviceable in the home, or which would encourage them to acquire further skill in case they should choose a purely industrial pursuit for their life work. (Cansler, 4, pages 134-136.)

The John F. Slater Fund, founded in 1882, was the first large fund established distinctly for the advancement of education of the Negro in the south including industrial and vocational training. Its contributions totaled $2,194,376, between 1882 and 1920. The Anna T. Jeanes Fund consisting of $1,000,000, became effective in the spring of 1908, with the understanding that no part of the income of this fund ever should be used for any large school. The Jeanes fund for several years paid the entire salary of an industrial teacher but after a short while the counties themselves began to pay part of the necessary salary.

Endowment from these funds caused many secondary schools to add some type of industrial training that previously had not existed.

PART C

Recent Trend of Industrial Education in the Negro Secondary Schools

With the limited expenditures now characterizing the financing of Negro education, it is very doubtful if the small Negro high schools can provide a significant amount of industrial education. Some of the southern states have made attempts to remedy this situation. Federal laws such as the Smith-Hughes Act passed in 1917 and the George-Dean Act passed in 1937 have done much to promote training in vocational education.

Surveys have shown that industrial arts courses are taught in most of the Negro high schools that do not have a vocational education program. In small communities, the enrollment is too small to merit both industrial arts and vocational education.

Vocational Education and Guidance in the Negro High Schools. For several years prior to World War II, attention was called to the deficiencies existing in the preparation and guidance of Negro youth for effective vocational and occupational adjustment. The study of the vocational education and guidance of Negroes, sponsored by the United Office of Education in 1937, revealed, among other things, the following:

> The vocational courses being offered in Negro High schools were almost exclusively home economics, industrial arts, and agriculture, there had been a large decrease in courses in the building trades.
>
> Only slight increases were found in the number of courses in radio repairing, aviation, refrigeration, janitorial work, beauty culture, cafeteria management, and vocational guidance.
>
> Nearly half (46.4 per cent) of the pupils in high schools were taking academic courses only. (Journal of Negro Education, Vol. 17, page 43.)

Despite these findings in 1937, it does not appear that fundamental changes have been instituted in Negro Secondary schools to meet effectively the technological changes in our industrial life.

Signs of Improvement. An encouraging sign that some progress is being made toward improving the status of the vocational education and guidance of Negro youth can be noted in some of the reports of state superintendents of education. The following items were taken from the reports of a few of the state superintendents of education: (Journal of Negro Education, Vol. 9, page 500.)

> Virginia (1939.) "In the development of Negro education the old County Training Schools are being expanded into high schools with broad programs of general education and vocational education, including trade and industrial education."
>
> Georgia (1938.) "The state-aided vocational departments in Negro schools increased as follows: home economics, 33 in 1936-37, 127 in 1938-39, agriculture, 45 in 1936-37, 103 in 1938-39, trades, 12 in 1936-37, 21 in 1938-39."
>
> West Virginia (1938.) "Vocational education increased commendably. Vocational agriculture and trade courses were inaugurated with the use of George-Dean funds in (9) schools.

> Louisiana (1938.) "Frequently vocational education in the Negro schools is stressed. At all of the large schools the boys are given some instruction in agriculture and shop work, and the girls in home-making.
>
> South Carolina (1938.) "Too much emphasis cannot be placed upon health and vocations. If they are not trained in some vocation, they will not be able to do their work intelligently. It is, therefore, the duty of the school to see that these vital subjects will have a permanent place in the curriculum of every school."

These are only a few of the improvements made within the past decade to place industrial education in the Negro Secondary schools. Increased enrollment and accreditation of high schools have been two of the ultimate causes for establishing some type of shop work in the Negro high schools.

Industrial Arts in the Negro High Schools. Recent surveys of high schools show that industrial arts is a part of most Negro high school curriculums. Some instances the program is still limited to the old time manual training or handwork. Some cases the vocational agriculture teacher has a course in farm mechanics and this is listed on the school calendar as mechanic arts. In the small communities where a choice must be reached between a vocational education or industrial arts program; the vocational education program is usually preferred because of the endowments received from the Smith-Hughes and the George-Dean Acts.

In the past the problem of industrial education and guidance of Negro youth was accentuated by (1) lack of education; (2) lack of educational opportunities and adaptation to needs; (3) lack of versatility and skill arising from limited occupational

experience; and (4) the Negro's own attitude and philosophy toward manual work. All of these problems have had assistance from the people, state and nation. The Negro of today is cognizant of the industrial life surrounding him which has given him reasons to seek industrial knowledge. The school can well be the means for translating this knowledge to him by way of highly trained teachers, expanded facilities and better buildings to carry on a efficient industrial education program.

CHAPTER IV

A SURVEY OF THE WASHINGTON HIGH SCHOOL STILLWATER, OKLAHOMA

In order to determine how industrial arts in a small high school can contribute to community life, it was thought desirable to make a survey of a small high school to obtain needed information. The information gathered from this small high school is thought to be a typical situation for any Negro small high school. The information was obtained by questionnaire. A two page questionnaire was prepared for the boys attending school from the seventh through the twelfth grades. The questionnaire was mimeographed for distribution. A copy of the questionnaire appears in Appendix B of this thesis.

Distribution of the Questionnaire. During the time when the survey was made the writer was living in the community. Therefore, the method of distributing the questionnaire was carried out as follows: Permission was received from the principal of the high school to permit the writer to give each boy from the seventh through the twelfth grades the questionnaire. The student was asked to answer the questionnaire in the classroom. There were twenty-nine boys present that day out of the possible thirty-nine enrolled. Answers were received from all twenty-nine boys present.

The School. The Washington High School is accredited by the State Board of Education. There were 156 students enrolled in the secondary and elementary grades for the school year 1950-51. A distribution of the students by sex, grade and average age is shown in Table I. The total number of boys was seventy compared to eighty-six girls. Twenty-one boys and eighteen girls are in high school.

Table I. Distribution of pupils in the Washington High School by Sex, Grade and Average Age.

Grade	Male	Average Age	Female	Average Age
1st	4	6.2	6	6
2nd	6	7.1	7	8.5
3rd	3	8.1	10	8
4th	7	9.7	7	8.5
5th	6	10.8	10	10.6
6th	5	11.6	12	11.2
7th	11	13.7	6	12.8
8th	7	16.1	10	13.9
9th	5	15.2	5	14.4
10th	6	16.0	8	15.0

Table I Continued.

11th	8	17.0	4	17.5
12th	2	17.5	1	20.0
Totals	70		86	

The girls account for fifty-five percent of the total number of students. The High School is made up of thirty-nine students and the elementary grades account for 117 students. No Junior High School is authorized for this school.

The curriculum of Washington High School is shown in Table II. The curriculum is made up of a total of twenty curricular units. Industrial arts account for three units which includes one trade unit.

Table II. The Curriculum of Washington High School, 1950-51.

Course	Number of Units
English	4
Algebra	1
Geometry	1
Oklahoma History and Civics	1
History	2
Problems in Democracy	1
Biology	1
General Science	1
Home Economics	2
Industrial Arts	3
Shorthand	1
Typewriting	2
Total	20

All classes are taught fifty minutes each day.

The Questionnaire. The questionnaire consisted of three parts. The first part is composed of questions asking the name, grade and age of the student. The second part consists of fifty-one items that different boys have done. The student was asked to check those items that he has done. In the third part, the student was asked to list all tools he has used either in shop work at school or out of school. The remainder of this chapter is devoted to the data obtained from the questionnaire.

Age and Grade Relationship, The age and grade relationship of the twenty-nine boys answering the questionnaire are shown in Table III. The students answering the questionnaire were composed of seven boys from the seventh grade, four boys from the eighth grade, three boys from the ninth grade, seven boys from the tenth grade, eight boys from the eleventh grade, and one boy from the twelfth grade. The ages range from twelve to twenty-three years.

Table III. Age-Grade Relationship of twenty-nine Boys in the Washington High School.

Grade	13 yrs. or less	13-14 yrs.	14-15 yrs.	15-16 yrs.	16-17 yrs.	17-18 yrs.	over 18 yrs.
7th	3	4	0	0	0	0	0
8th	0	3	0	0	0	0	1
9th	0	0	2	1	0	0	0

Table III Continued.

10th	0	0	0	3	0	2	1
11th	0	0	0	0	2	3	3
12th	0	0	0	0	0	1	0

Items Performed by Students. At least one student out of the twenty-nine had performed each item listed in the questionnaire except one. In order to show the items that surpass other items, it was necessary to compute the percentage for each item. A percentage rank from 50 to 75 is satisfactory, from 75 to 90 good and from 90 to 100 very good. All below 50 are thought to be unsatisfactory.

The number and percent of the twenty-nine pupils which had performed each of the fifty-one items is shown in Table IV. The first column contains the fifty-one items listed in the questionnaire, the second column shows the number that performed each item and in the third column is listed the percentage points of the total twenty-nine pupils that performed each item.

Table IV. Items Performed by Twenty-nine Boys at Washington High School.

Item		Number	% of total
1.	Sharpen a plane iron	12	41
2.	Make a tool handle of wood	11	38
3.	Put on shoe heels	19	65
4.	Sharpen a knife	20	69
5.	Make a cement floor	4	14
6.	Paint window screens	16	55
7.	Make screens for windows	15	52
8.	Put in lighting fixtures	9	31
9.	Take a bicycle apart	24	83

Table IV Continued.

Items		Number	% of total
10.	Glue drawers	16	55
11.	Grind automobile valves	4	14
12.	Connect a doorbell	2	7
13.	Put a glass in a window	17	58
14.	Clean spark plugs	11	38
15.	Sandpaper woodwork	29	100
16.	Put on a tire casing	23	79
17.	Paint a house	14	41
18.	Varnish a floor	12	48
19.	Sharpen lawnmower blades	7	24
20.	Drive an automobile	23	79
21.	Put shingles over a leak in house	11	38
22.	Operate a printing press	2	7
23.	Make a metal box	1	3
24.	Half sole shoes	15	52
25.	Repair the cord in an electric iron	12	41
26.	Plane a door edge to fit	14	48
27.	Make calling cards	3	10
28.	Varnish a chair or any other furniture	25	86
29.	Make a metal waste basket	1	3
30.	Make a metal mail box	2	7
31.	Mix cement	13	45
32.	Make a leather book cover	2	7
33.	Make a leather wallet	3	10
34.	Make an electric motor	1	3
35.	Put in an electric fuse	17	58
36.	Draw up plans for a house	3	10
37.	Weld pipe together for a clothesline pole	6	21
38.	Re-line brakes on an automobile	3	10
39.	Make a bookrack	15	52
40.	Upholster the seat of a chair or stool	15	52
41.	Use a rivet gun for making picture frames from metal	1	3
42.	Stain a project made from wood	24	83
43.	Make a metal match box	2	7
44.	Paint or whitewash a shack	7	24
45.	Make book ends	13	45
46.	Put on shock absorber for automobile	0	00
47.	Make a dust pan	3	10
48.	Make a funnel	1	3
49.	Repair kitchen utensils with soldering iron	5	17
50.	Connect a gas stove	12	41
51.	Weld a crack in metal	7	24

This Table shows that 100 percent of the pupils have sandpapered woodwork and eighty-six per cent had varnished a chair or any other furniture. Stain a project made from wood and take a bicycle apart were the next items in rank. Eighty-three per cent of the pupils had performed these items. Twelve other items received a percentage point of fifty or more. These were items pertaining to woodworking, shoe repairing and upholstering.

Seven pupils in the seventh grade received percentage points for eighteen of the fifty-one items listed. (Table V.) One Hundred per cent had sandpapered woodwork and put on a tire casing. Eighty-five percent had sharpened a plane iron and seventy-one per cent had driven an automobile, varnished a chair

Table V. Items Performed by Seven Boys in the Seventh Grade at Washington High School.

Item	Number	Percentage Points
1. Sharpen a plane iron	5	85
2. Make a tool handle out of wood	1	14
3. Put on shoe heels	0	00
4. Sharpen a knife	4	57
5. Make a cement floor	0	00
6. Paint window screens	0	00
7. Make screens for windows	0	00
8. Put in lighting fixtures	0	00
9. Take a bicycle apart	5	71
10. Glue drawers	0	00
11. Grind automobile valves	0	00
12. Connect a doorbell	0	00
13. Put a glass in a window	0	00
14. Clean spark plugs	0	00
15. Sandpaper woodwork	7	100
16. Put on a tire casing	7	100
17. Paint a house	1	14
18. Varnish a floor	2	28
19. Sharpen lawnmower blades	3	42
20. Drive an automobile	5	71
21. Put shingles over a leak in house	2	28

Table V. Continued.

Item		Number	Percentage Points
22.	Operate a printing press	0	00
23.	Make a metal box	0	00
24.	Half sole shoes	00	00
25.	Repair the cord in an electric iron	0	00
26.	Plane a door edge to fit	0	00
27.	Make calling cards	0	00
28.	Varnish a chair or any other furniture	5	71
29.	Make a metal waste basket	0	00
30.	Make a metal mail box	0	00
31.	Mix cement	3	42
32.	Make a leather book cover	0	00
33.	Make a leather wallet	0	00
34.	Make an electric motor	0	00
35.	Put in an electric fuse	1	14
36.	Draw up plans for a house	0	00
37.	Weld pipe together for a clothesline	3	42
38.	Re-line brakes on an automobile	0	00
39.	Make a bookrack	0	00
40.	Upholster the seat of a chair or stool	0	00
41.	Use a rivet gun for making picture frames from metal	0	00
42.	Stain a project made from wood	5	71
43.	Make a metal match box	0	00
44.	Paint or whitewash a shack	1	14
45.	Make book ends	0	00
46.	Put on shock absorber for automobile	0	00
47.	Make a dust pan	0	00
48.	Make a funnel	0	00
49.	Repair kitchen utensils with soldering iron	0	00
50.	Connect a gas stove	1	14
51.	Weld a crack in metal	0	00

or any other furniture and taken a bicycle apart. One other item rated satisfactory.

Four pupils in the eighth grade received percentage points for twenty-nine of the fifty-one items. (Table VI.) One hundred percent had sandpapered woodwork, put on a tire casing and varnished a chair or any other furniture. Paint window screens,

sharpen a knife and plane a door edge to fit was second in rank with seventy-five percentage points. Five other items were satisfactory.

Thirty-two items received percentage points for three pupils in the ninth grade. (Table VII.) One hundred per cent had put on shoe heels, half soled shoes, sharpened a knife, put on tire casing and connected a gas stove. Five of the woodworking items received 100 percentage points and twelve other items received sixty-six percentage points.

An indication of variation in items performed seem to increase as the grade level increases. Six pupils in the tenth grade received percentage points for thirty-five items out of the fifty-one listed. (Table VIII.) Disregarding the high percentage that had performed the woodworking items, 100 per cent had put on shoe heels, put in lighting fixtures, and upholstered the seat of a chair or stool. Eighty-three per cent had repaired the cord in an electric iron and half soled shoes. Nine other items received satisfactory ratings.

A noticeable amount of variations in items performed is shown in Table IX for eight eleventh grade pupils. Only two items had been performed by 100 per cent of the pupils but twenty-four items were satisfactorily performed. The two items that had been performed by all the pupils were sandpaper wood work and sharpen a knife. Take a bicycle apart, drive an automobile and stain a project made from wood were the items next in rank. Eighty-eight per cent of the pupils had performed these items.

Table VI. Items Performed by Four Boys in the Eighth Grade at Washington High School.

Item	Number	Percentage Points
1. Sharpen a plane iron	0	00
2. Make a tool handle out of wood	0	00
3. Put on shoe heels	2	50
4. Sharpen a knife	3	75
5. Make a cement floor	0	00
6. Paint window screens	3	75
7. Make screens for windows	1	25
8. Put in lighting fixtures	2	50
9. Take a bicycle apart	1	25
10. Glue drawers	1	25
11. Grind automobile valves	1	25
12. Connect a doorbell	1	25
13. Put a glass in a window	1	25
14. Clean spark plugs	1	25
15. Sandpaper woodwork	4	100
16. Put on a tire casing	4	100
17. Paint a house	0	00
18. Varnish a floor	0	00
19. Sharpen lawnmower blades	0	00
20. Drive an automobile	2	50
21. Put shingles over a leak in house	0	00
22. Operate a printing press	1	25
23. Make a metal box	0	00
24. Half sole shoes	1	25
25. Repair the cord in an electric iron	0	00
26. Plane a door edge to fit	3	75
27. Make calling cards	0	00
28. Varnish a chair or any other furniture	4	100
29. Make a metal waste basket	0	00
30. Make a metal mail box	0	00
31. Mix cement	0	00
32. Make a leather book cover	0	00
33. Make a leather wallet	0	00
34. Make an electric motor	0	00
35. Put in an electric fuse	2	50
36. Draw up plans for a house	1	25
37. Weld pipe together for a clothesline	1	25
38. Re-line brakes on an automobile	1	25
39. Make a bookrack	2	50
40. Upholster the seat of a chair or stool	1	25
41. Use a rivet gun for making picture frames from metal	1	25

Table VI Continued.

Item	Number	Percentage Points
42. Stain a project made from wood	2	50
43. Make a metal match box	0	00
44. Paint or whitewash a shack	1	25
45. Make book ends	2	50
46. Put on shock absorber for automobile	0	00
47. Make a dust pan	0	00
48. Make a funnel	0	00
49. Repair kitchen utensils with soldering iron	0	00
50. Connect a gas stove	1	25
51. Weld a crack in metal	0	00

Table VII. Items Performed by Three Boys in the Ninth Grade at Washington High School.

Item	Number	Percentage Points
1. Sharpen a plane iron	2	66
2. Make a tool handle out of wood	1	33
3. Put on shoe heels	3	100
4. Sharpen a knife	3	100
5. Make a cement floor	0	00
6. Paint window screens	3	100
7. Make screens for windows	3	100
8. Put in lighting fixtures	2	66
9. Take a bicycle apart	3	100
10. Glue drawers	2	66
11. Grind automobile valves	1	33
12. Connect a doorbell	0	00
13. Put a glass in a window	2	66
14. Clean spark plugs	1	66
15. Sandpaper woodwork	3	33
16. Put on a tire casing	3	100
17. Paint a house	2	66
18. Varnish a floor	3	100
19. Sharpen lawnmower blades	1	33
20. Drive an automobile	2	66
21. Put shingles over a leak in house	2	66
22. Operate a printing press	0	00
23. Make a metal box	0	00
24. Half sole shoes	3	100
25. Repair the cord in an electric iron	1	33

Table VII Continued.

Item	Number	Percentage Points
26. Plane a door edge to fit	2	66
27. Make calling cards	0	00
28. Varnish a chair or any other furniture	3	100
29. Make a metal waste basket	0	00
30. Make a metal mail box	0	00
31. Mix cement	2	66
32. Make a leather book cover	0	00
33. Make a leather wallet	0	00
34. Make an electric motor	0	00
35. Put in an electric fuse	2	66
36. Draw up plans for a house	0	00
37. Weld pipe together for a clothesline	0	00
38. Re-line brakes on an automobile	0	00
39. Make a bookrack	2	66
40. Upholster the seat of a chair or stool	2	66
41. Use a rivet gun for making picture frames from metal	0	00
42. Stain a project made from wood	3	100
43. Make a metal match box	0	00
44. Paint or whitewash a shack	2	66
45. Make book ends	3	100
46. Put on shock absorber for automobile	0	00
47. Make a dust pan	0	00
48. Make a funnel	0	00
49. Repair kitchen utensils with soldering iron	0	00
50. Connect a gas stove	3	100
51. Weld a crack in metal	1	33

Table VIII. Items Performed by Six Boys in the Tenth Grade at Washington High School.

Item	Number	Percentage Points
1. Sharpen a plane iron	1	16
2. Make a tool handle out of wood	4	66
3. Put on shoe heels	6	100
4. Sharpen a knife	6	100
5. Make a cement floor	1	16
6. Paint window screens	4	66
7. Make screens for windows	6	100

Table VIII Continued.

Item	Number	Percentage Points
8. Put in lighting fixtures	0	00
9. Take a bicycle apart	6	100
10. Glue drawers	6	100
11. Grind automobile valves	0	00
12. Connect a doorbell	0	00
13. Put a glass in a window	6	100
14. Clean spark plugs	3	50
15. Sandpaper woodwork	6	100
16. Put on a tire casing	3	50
17. Paint a house	3	50
18. Varnish a floor	4	66
19. Sharpen lawnmower blades	0	00
20. Drive an automobile	6	100
21. Put shingles over a leak in house	3	50
22. Operate a printing press	0	00
23. Make a metal box	0	00
24. Half sole shoes	5	83
25. Repair the cord in an electric iron	5	83
26. Plane a door edge to fit	3	50
27. Make calling cards	1	16
28. Varnish a chair or any other furniture	6	100
29. Make a metal waste basket	0	00
30. Make a metal mail box	0	00
31. Mix cement	2	33
32. Make a leather book cover	1	16
33. Make a leather wallet	1	16
34. Make an electric motor	0	00
35. Put in an electric fuse	6	100
36. Draw up plans for a house	0	00
37. Weld pipe together for a clothesline	1	16
38. Re-line brakes on an automobile	0	00
39. Make a bookrack	6	100
40. Upholster the seat of a chair or stool	6	100
41. Use a rivet gun for making picture frames from metal	0	00
42. Stain a project made from wood	6	100
43. Make a metal match box	1	16
44. Paint or whitewash a shack	0	00
45. Make book ends	4	66
46. Put on shock absorber for automobile	0	00
47. Make a dust pan	1	16
48. Make a funnel	0	00

Table VIII Continued.

Item	Number	Percentage Points
49. Repair kitchen utensils with soldering iron	0	00
50. Connect a gas stove	1	16
51. Weld a crack in metal	1	16

Table IX. Items Performed by Eight Boys in the Eleventh Grade at Washington High School.

Item	Number	Percentage Points
1. Sharpen a plane iron	2	25
2. Make a tool handle out of wood	4	50
3. Put on shoe heels	6	75
4. Sharpen a knife	8	100
5. Make a cement floor	2	25
6. Paint window screens	5	63
7. Make screens for windows	5	63
8. Put in lighting fixtures	4	50
9. Take a bicycle apart	7	88
10. Glue drawers	6	75
11. Grind automobile valves	2	25
12. Connect a doorbell	0	00
13. Put a glass in a window	6	75
14. Clean spark plugs	5	63
15. Sandpaper woodwork	8	100
16. Put on a tire casing	6	75
17. Paint a house	5	63
18. Varnish a floor	4	50
19. Sharpen lawnmower blades	3	38
20. Drive an automobile	7	88
21. Put shingles over a leak in house	3	38
22. Operate a printing press	0	00
23. Make a metal box	0	00
24. Half sole shoes	5	63
25. Repair the cord in an electric iron	5	63
26. Plane a door edge to fit	5	63
27. Make calling cards	1	12
28. Varnish a chair or any other furniture	6	75
29. Make a metal waste basket	0	00
30. Make a metal mail box	1	12
31. Mix cement	6	75
32. Make a leather book cover	0	00
33. Make a leather wallet	1	12

Table IX Continued.

Item	Number	Percentage Points
34. Make an electric motor	0	00
35. Put in an electric fuse	5	63
36. Draw up plans for a house	1	12
37. Weld pipe together for a clothesline	0	00
38. Re-line brakes on an automobile	2	25
39. Make a bookrack	4	50
40. Upholster the seat of a chair or stool	5	63
41. Use a rivet gun for making picture frames from metal	0	00
42. Stain a project made from wood	7	88
43. Make a metal match box	0	00
44. Paint or whitewash a shack	2	25
45. Make book ends	3	38
46. Put on shock absorber for automobile	0	00
47. Make a dust pan	0	00
48. Make a funnel	1	12
49. Repair kitchen utensils with soldering iron	4	50
50. Connect a gas stove	5	63
51. Weld a crack in metal	4	50

The one student in the twelfth grade had performed all but five of the items listed. (Table X.) This seems logical since the number of items performed by the pupils have increased as the grade level increased. The percentage points would likely be high for this grade since only one student answered the questionnaire.

Table X. Items Performed by One Boy in the Twelfth Grade at Washington High School.

Item	Number	Percentage Points
1. Sharpen a plane iron	1	100
2. Make a tool handle out of wood	1	100

Table X Continued.

Item	Number	Percentage Points
3. Put on shoe heels	1	100
4. Sharpen a knife	1	100
5. Make a cement floor	1	100
6. Paint window screens	1	100
7. Make screens for windows	1	100
8. Put in lighting fixtures	1	100
9. Take a bicycle apart	1	100
10. Glue drawers	1	100
11. Grind automobile valves	0	00
12. Connect a doorbell	1	100
13. Put a glass in a window	1	100
14. Clean spark plugs	1	100
15. Sandpaper woodwork	1	100
16. Put on a tire casing	1	100
17. Paint a house	1	100
18. Varnish a floor	1	100
19. Sharpen lawnmower blades	0	00
20. Drive an automobile	1	100
21. Put shingles over a leak in house	1	100
22. Operate a printing press	1	100
23. Make a metal box	1	100
24. Half sole shoes	1	100
25. Repair the cord in an electric iron	1	100
26. Plane a door edge to fit	1	100
27. Make calling cards	1	100
28. Varnish a chair or any other furniture	1	100
29. Make a metal waste basket	1	100
30. Make a metal mail box	1	100
31. Mix cement	0	00
32. Make a leather book cover	0	100
33. Make a leather wallet	1	100
34. Make an electric motor	1	100
35. Put in an electric fuse	1	100
36. Draw up plans for a house	1	100
37. Weld pipe together for a clothesline	1	100
38. Re-line brakes on an automobile	0	00
39. Make a bookrack	1	100
40. Upholster the seat of a chair or stool	1	100
41. Use a rivet gun for making picture frames from metal	1	100
42. Stain a project made from wood	1	100
43. Make a metal match box	1	100
44. Paint or whitewash a shack	1	100
45. Make book ends	1	100

Table X Continued.

Item	Number	Percentage Points
46. Put on shock absorber for automobile	0	00
47. Make a dust pan	1	100
48. Make a funnel	1	100
49. Repair kitchen utensils with soldering iron	1	100
50. Connect a gas stove	1	100
51. Weld a crack in metal	1	100

The items pertaining to the type of shopwork now being offered in the Washington high school seem to rank highest in all grade levels. Only slight indication is shown that the boys are doing shopwork outside of the school shop.

Tools Listed by the Students.. A total of forty-nine different hand tools were listed by the twenty-nine boys answering the questionnaire. A list of the tools is shown in Table X. The first column contains the names of tools listed by the twenty-nine boys. In the second column is listed the number of boys who had used each tool. The second column is not thought to represent a true statement on the number of boys who had used a certain tool in some cases. A lot of the boys were in a hurry to get through with the questionnaire and did not try to list all the tools they had used. Others did not list some tools because they did not know the name of the tool or how to spell the tool. Errors made in spelling the tools were frequent by boys in all of the six grades filling in the questionnaire. Some examples were: "wood chile" for wood chisel, "brass and bit" for brace and bit, "playne" for plane, "coplan saw" for coping saw, "plovers" for pliers, "crocecut saw" for crosscut saw, "heck saw" for hack saw, "suqes" for square, "crewdriver" for screw driver and called

"scrap" for scraper. The most frequently misspelled tool was pliers. Some of the tools were misspelled beyond recognition.

The tool vocabulary of a few of the students was rather remarkable. Two boys in the tenth grade listed twenty-five tools. From the tools listed on the questionnaires, the tenth and eleventh grade boys seemed more familiar with hand tools than the students in the other grades. A number of the tools listed according to the grades in school of the twenty-nine boys is shown in table XI. The first column contains a list of all the tools listed by the twenty-nine boys. In the other six columns is listed the number of times the name of a tool appeared in relation to the grades in school of the twenty-nine boys.

Table XI. Tools listed by Twenty-nine Boys at Washington High School.

Tools	Number
Axe	6
Auto Jack	1
Back saw	15
Ball pein hammer	8
Bicycle wrench	1
Brace and bit	21
Burnisher	2
Chisel	20
Claw Hammer	26
Coping saw	15
Crosscut saw	13
Curve knife	7
Draw knife	2
File	12
Framing square	4
Hack saw	9
Hand drill	1
Hatchet	4
Hoe	1
Iron clamp	6

Table XI Continued.

Keyhole saw	8
Knife	4
Leather punch	5
Level	10
Lift knife	5
Marking gage	13
Paint brush	2
Pipe wrench	1
Plane	20
Pliers	10
Post hole digger	1
Wrecking bar	1
Rake	1
Rip saw	12
Rule	3
Saw	13
Scraper	10
Screw driver	21
Shoe hammer	1
Shoe last	3
Shovel	2
Straight knife	7
Tack hammer	7
Try square	16
Wood clamp	8
Wood mallet	8
Wood rasp	11
Wrench	7

Table XII. Number of Tools listed by Twenty-nine Boys at Washington High School According to Grade.

Tools	Grade					
	7th	8th	9th	10th	11th	12th
Axe	2	1	0	0	3	0
Auto Jack	0	0	0	0	1	0
Back Saw	7	2	0	6	1	0
Ball pein hammer	3	1	0	4	0	0
Bicycle wrench	0	0	0	0	0	1
Brace and bit	7	1	3	4	3	1
Burnisher	0	0	2	0	0	0
Chisel	6	2	3	4	4	0
Claw hammer	6	1	3	6	8	1
Coping saw	5	3	0	6	3	0
Crosscut saw	4	3	0	5	1	0
Curve knife	0	0	0	6	0	1

Table XII Continued.

Draw knife	0	0	2	0	0	0
File	0	0	3	6	2	0
Framing square	0	0	0	3	1	0
Hack saw	5	2	0	0	1	0
Hand drill	0	0	0	0	0	1
Hatchet	2	0	0	0	2	0
Hoe	0	0	1	0	0	0
Iron clamp	1	0	1	5	1	0
Keyhole saw	1	0	0	5	1	0
Knife	1	0	3	0	1	0
Leather punch	0	0	0	4	2	0
Level	0	0	0	5	1	1
Lip knife	0	0	0	2	2	1
Marking gage	2	2	3	5	1	0
Paint brush	1	0	0	0	2	0
Pipe wrench	0	0	0	0	1	1
Plane	7	1	2	5	5	0
Pliers	1	0	2	4	4	0
Post hole digger	0	0	1	0	0	0
Wrecking bar	0	0	1	0	0	0
Rake	0	0	1	0	0	0
Rip saw	1	3	0	6	3	0
Rule	0	0	2	0	1	0
Saw	1	1	3	2	4	1
Scraper	5	1	3	0	1	0
Screw driver	5	2	3	5	8	0
Shoe hammer	0	0	0	0	0	1
Shoe last	0	0	2	0	2	0
Shovel	1	0	1	0	0	0
Straight knife	0	0	0	4	3	0
Tack hammer	1	1	0	4	1	0
Try square	2	3	3	3	3	1
Wood clamp	0	0	2	5	1	0
Wood mallet	1	1	0	5	1	0
Wood rasp	2	0	3	4	2	0
Wrench	1	0	2	0	2	1

Consideration must be given to the fact that the enrollments in some grades are larger than other grades. Due to this situation, some grades show a larger number of times that some tools were listed in the questionnaire. For example: The table shows that five students in the seventh grade and three students in the eighth grade listed the coping saw.

Since seven boys answered the questionnaire in the seventh grade, the percentage computation would equal seventy-one per-cent for those students. Only four boys from the eighth grade answered the questionnaire and three of them listed the coping saw which would equal a percentage of seventy-five per-cent. Hence, even though one grade does have a larger number of times the name of a tool appears, it does not mean that this grade show more familiarity with tools than the grade with the smaller number.

Summary. There were 156 students enrolled in the Washington School for the school year 1950-51. There were seventy boys compared to eighty-six girls in grades one through twelve. Twenty-one boys were in high school. The questionnaire was distributed to boys from the seventh through the twelfth grades. Twenty-nine boys answered the questionnaire out of a possible thirty-nine boys enrolled in these grades.

With the exception of one, all fifty-one items had been done by at least one boy answering the questionnaire. The percentage range from three per-cent to one hundred per-cent. Sixteen items had been performed by over fifty per-cent of the twenty-nine boys. All twenty-nine boys had done item fifteen, "Sandpaper woodwork." "Varnish a chair or any other furniture" was second in rank. This item had been performed by eighty-six per cent of the boys. The items "Take a bicycle apart" and "Stain a project made from wood" were third in rank. These

items had been performed by eighty-three percent of the boys.

A total of forty-nine different hand tools were listed by the twenty-nine boys answering the questionnaire. The tenth and eleventh grades named more tools than any of the other grades. Misspelled words were quite frequent. The most misspelled tool was pliers.

The questionnaires answered by the students show evidence that the pupils have had some experiences in wood-working, shoe-repairing and some upholstering. It seems likely that more experience in automobile mechanics and metal work would be advisable since seventy-nine per-cent of the pupils drive an automobile.

There is little reason to believe that the pupils in the seventh, eighth and ninth grades are exposed to enough different types of shop work to allow them to discover their aptitudes and ability to do mechanical operations. Hence, not much could be expected of them in the home or the community when they graduate from High School. Less would ensue if the student were forced to drop out of school.

Evidence is indicated that some time should be spent on familiarizing the pupils with the hand tools and the correct way of spelling them. If pupils know a tool and know what the tool is used for, more operations can be performed in what ever type of shop work that is offered in the school.

To add more validity to the survey, a survey of the parents and the community will follow in the next chapter.

CHAPTER V

A SURVEY OF THE NEGRO COMMUNITY OF STILLWATER, OKLAHOMA

A survey of the community in which the school is located was necessary to obtain needed information. The cultural and mechanical environment of the student, tools in the home and the mechanical operations performed by both father and son in and around the home, are important items to be considered. An industrial education program planned to contribute to community life could not have the maximum efficiency without this information. This information was also obtained by questionnaire. A two page questionnaire was prepared for the different families in the community who had children attending school. The questionnaire was mimeographed for distribution.

The Community. Data taken from the 1940 census indicates that the Negro population of Stillwater totaled three hundred ninety-three persons. There were 189 male persons and two hundred four females. Wage and salary workers totaled fifty-one males and sixty-three females. Forty-nine males and eighty-four females were not in the labor force. Fifty-one females were engaged in their own house work. There were ten male and eight female employers.

From observation and personal contact with families in the community, the writer noted that the majority of the Negro residents extend north to Tenth Street and south to Fourteenth Street in the southwest section of Stillwater. No paved streets are in this section of the community because the Negro families are not able to pay sufficient taxes for this purpose.

Distribution of the Questionnaire. By looking through the registration cards of the Washington High School, there were found to be seventy-eight parents in the community that had children attending school. A student from each family was given a questionnaire to carry home to his parents. The students were asked to have their parents fill out the questionnaire and give it to the shop teacher the next day. An explanation as to the purpose of the questionnaire was given to all students. Seventy-eight questionnaires were sent out the first day. The next day, ten answers were brought back to the shop teacher. After ten days, the writer went back to the school and no more questionnaires had been returned. The principal gave the writer permission to visit each class room to try and find out why the questionnaires had not been returned. When the students were asked why they did not return the questionnaire, some stated that they "wore it out carrying it around in their pockets," others said they "lost it," some said "I don't know" and the majority of the

students did not say anything. Each classroom teacher reprimanded the students for not returning the questionnaires. The students promised to return the questionnaire if they were issued another one. An additional sixty-eight questionnaires were sent out to those parents that did not answer. Answers were received from twenty-six making a total of thirty-six answers.

The Questionnaire. The questionnaire consisted of four parts. The first part was designed to obtain information pertaining to the father's occupation, number of years in school of father and mother and the age and occupation of boys not in school. The second part contained fifteen home necessities. The parents were asked to check those tools owned by the father and those tools owned by the son. The fourth part consisted of fourteen mechanical operations that are usually performed in and around the home. The father was asked to check those operations that he has done and also check the operations that the boy helps with or has done himself. A copy of the questionnaires may be found in Appendix B of this writing. The remainder of this chapter is devoted to the data obtained from the questionnaire.

Table XIII. Occupation of twenty-eight Fathers in the Negro Community of Stillwater, Oklahoma.

Occupation	Number
Laborer	6
Construction worker	3

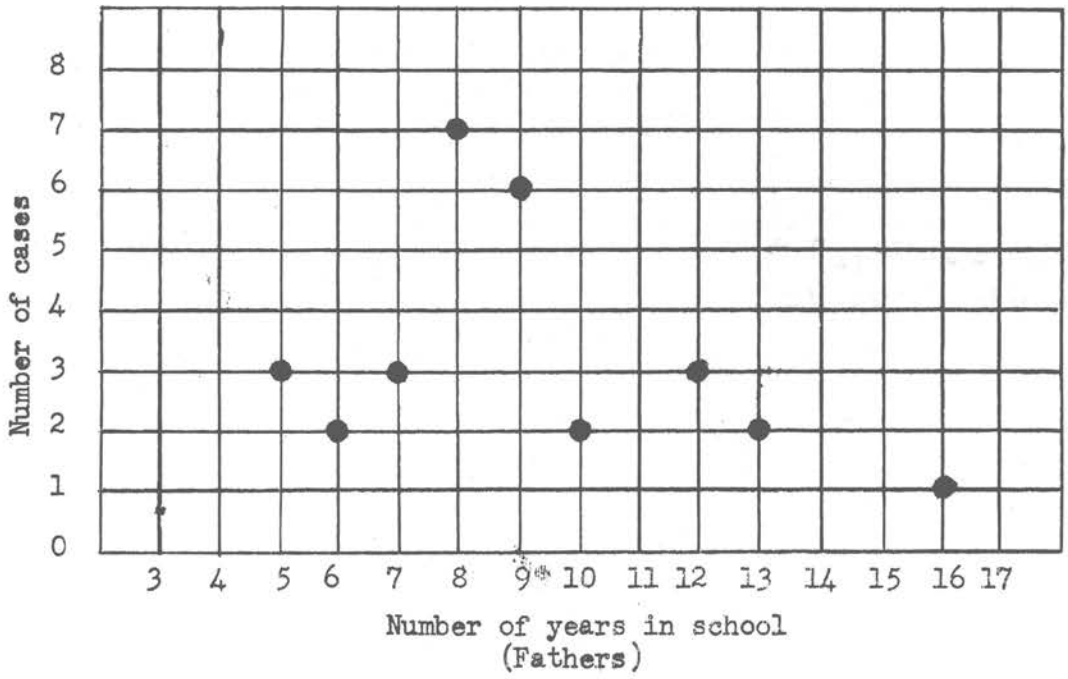
Table XIII Continued.

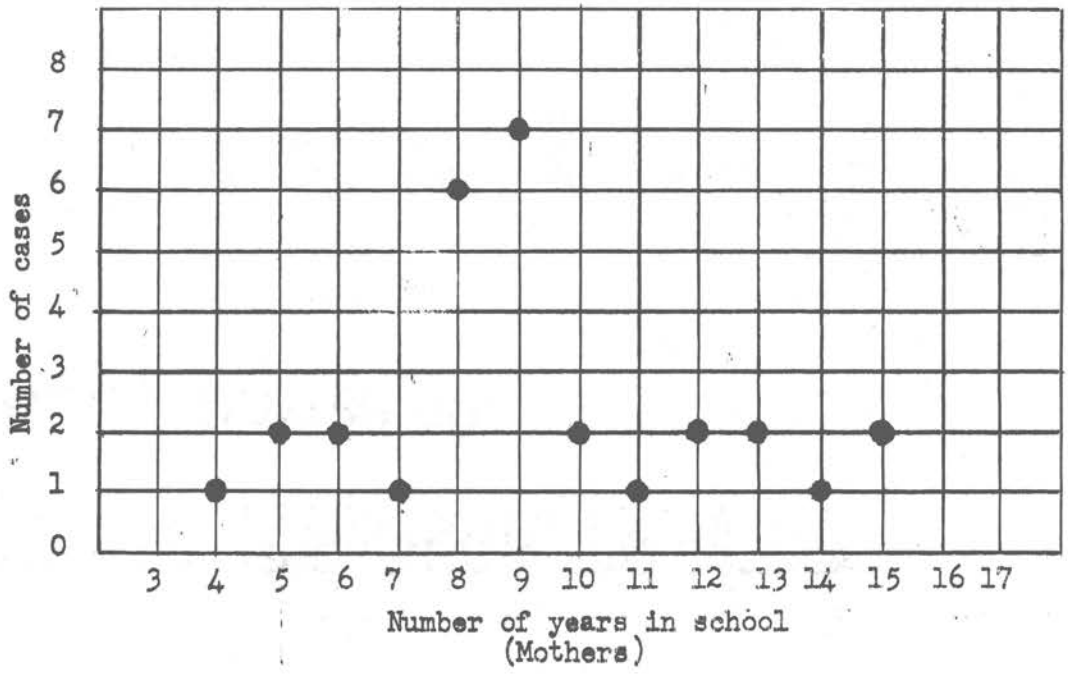
Gardner	1
Carpenter	2
Porter	1
Merchant	1
Food Handler	1
Farmer	4
Janitor	2
Minister	3
Handyman	1
Mechanic	2
Filling Station attendant	1

Occupation of Father. The occupational titles of the fathers who answered the questionnaire totaled twenty-eight out of a possible thirty-six. One father did not work, one had retired and six respondents did not state the father's occupation. A distribution of the twenty-eight occupations is shown in Table XIII. The first column shows the thirteen different occupations and the second column shows the number of fathers engaged in each occupation. Six laborers and four farmers constitute the two highest number of respondents engaged in one occupation.

Education of Parents. Twenty-nine fathers and thirty mothers indicated how many years they had attended school. No indication was made by seven fathers and six mothers. Data showing the years in school of the twenty-nine fathers and thirty mothers appear in Table XIV, the data shown in the table reveal that the arithmetic mean of the number of years in school of the fathers is 8.27 and the arithmetic mean of the mothers is 9.50.

TABLE XIV. THE NUMBER OF YEARS IN SCHOOL OF 29 FATHERS AND 30 MOTHERS IN STILLWATER, OKLAHOMA.





Home Implements. The home implements checked by the thirty-six respondents totaled twenty-one telephones, nine indoor baths, eight bathtubs, six hot water systems and sixteen had electric lighting. Fifteen checked lighting, but did not indicate what type of lighting was in the home.

Table XV. Home Implements Checked by Thirty-six Negro Parents in Stillwater, Oklahoma.

Item	Number
Telephone	21
Radio, enclosed in cabinet	31
Lighting	
Oil	2
Electric	16
Gas	0
Gasoline	0
Motor driven washing machine	23
Electric vacuum	6
Electric iron	31
Hot Water system	6
Bathtub	8
Kitchen floor	
Unpainted	3
Painted	1
Linoleum	13
Indoor bath	9
Privy	1
Own automobile	21
Lamps	
reading	7
floor	7
Automatic washing machine	8
Television	1
Bicycle	24

Two indicated that oil was the source of lighting. Twenty-one of the respondents owned automobiles and twenty-four owned bicycles. In Table XV are shown the complete data on implements checked by the respondents.

Age and Occupation of Boys Not in School. Data obtained from the questionnaires on the age and occupation of the boys not in school were somewhat lacking. Twelve respondents gave this information. Twenty-four did not respond. The occupation named most was laborer. The farmer was next in rank. Other information pertaining to the age and occupation of boys not in school is shown in Table XVI.

Table XVI. The Age and Occupation of Sixteen Negro Males not in School, Stillwater, Oklahoma.

Age	:	Occupation
21	:	Construction Worker
18	:	Cook
21	:	Laundryman
23	:	Car Washer
29	:	Laborer
31	:	Farmer
26	:	Laborer
40	:	Laborer
49	:	Laborer
21	:	Farmer
23	:	Sanitary Worker
28	:	Farmer
22	:	Cook
32	:	Painter
28	:	Minister
22	:	Cleaner

Tools in the Home. The tools in the home owned by the father and son of the respondents vary from two anvils to twenty-five claw hammers for the fathers and from one emery wheel to fifteen claw hammers for the sons. The tool owned next in number by the father was the screwdriver.

The tools owned next in number by the son are the file, the screwdriver and the wrench. Nine fathers and four sons owned the crosscut saw. The jack plane was owned by fifteen fathers and eight sons. Other information about the tools owned by both father and son may be found in Table XVII. Column one is a list of the tools used in the questionnaire. Column two shows the number of fathers that have each tool in the home.

Table XVII. A list of thirty-two Tools and the Number of Twenty-eight Negro Fathers and Twenty-five Sons that own these Tools in Stillwater, Oklahoma.

Tool	Father	Son
Anvil	2	0
Brace and bits	16	7
Blow torch	8	2
Cabinet Scraper	6	3
Carpenter's rule	18	13
Draw knife	14	12
Emery wheel	4	1
File	22	14
Glass cutter	8	6
Hammer claw	25	15
Leather punch	8	3
Level	14	6
Miter box for saw	5	6
Plane block	7	3
Pliers	19	13
Putty knife	15	8
Chisels	17	10
Saw, coping	16	8
Saw, rip	14	6
Saw, keyhole	9	1
Saw, crosscut	9	4
Screw driver	23	14
Soldering iron	7	2
Square, small	10	5
Tinner's snips	4	1
Vise	5	2

Table XVII Continued.

Whetstone	8	4
Wood clamps	3	5
Work bench	14	7
Wrench	20	14

Column three shows the number of sons that own each tool. Twenty-eight fathers and twenty-five sons. Table XVIII show the number of fathers and sons that had performed the operations listed in the questionnaire. Twenty-six fathers had put in window panes, twenty-five had replaced screen wire in doors or screens and twenty-four had sharpened knives.

Table XVIII. A list of Fourteen Mechanical operations and the Number of Twenty-eight Negro Fathers and Twenty-five Sons in Stillwater, Oklahoma that have performed these operations.

Mechanical Operations	Father	Son
Sharpen lawnmower blades	17	8
Plane doors down to fit	17	10
Replace screen wire in doors or screens	25	13
Put in window panes	26	12
Put up shelves	19	13
Fix leaks in kettles	11	9
Sharpen carpenter tools	20	10
Make an ironing board	4	2
Put putty around window panes	15	11
Sharpen knives	24	16
Repair engine in automobile	17	7
Shingle roof or repair roof by replacing shingles	22	11
Replace washers in faucets	13	6
Paint houses	16	13

Four had made an ironing board. Sixteen sons had sharpened knives. Thirteen had replaced screen wire in doors or screens, put up

shelves and painted houses. Two had made an ironing board.

Summary. The 1940 census indicates that three-hundred and ninety-three Negro citizens reside in Stillwater, Oklahoma. Forty-nine males and eighty-four females were not in the labor force.

Seventy-eight Negro families have children attending Washington High School. Answers to the questionnaires to some extent were received from thirty-six families. Twenty-eight fathers were engaged in thirteen different occupations. Six laborers and four farmers accouuted for the two highest number of respondents engaged in one occupation.

Twenty-nine fathers and thirty mothers indicated how many years they had attended school. The arithmetic mean was 8.27 and 9.50 respectively. The occupation named most for boys not in school was laborer. The farmer was next in incidence.

The questionnaires revealed that twenty-one telephones, nine indoor baths, eight bathtubs and six hot water systems were in the homes of the thirty-six respondents. Sixteen checked electric lighting and fifteen checked lighting without indicating from what source.

The tool owned most by the father and son was the claw hammer. Next in rank was the screwdriver for the fathers and the screwdriver, file and wrench for the sons.

Twenty-six fathers had put in window panes, twenty-five had replaced screen wire in doors or screens and twenty-four had sharpened knives. Sixteen sons had sharpened knives and

thirteen had replaced screen wire in doors or screens, put up shelves and painted houses.

There are little evidence shown from the answers of the questionnaire that the cultural or the mechanical back ground of the students in this community is sufficient to promote better living standards in the home or elsewhere. Since this is evident, the next step would be to provide a suitable industrial arts program in the school to compensate for the lack of a cultural and mechanical environment at home. The students will then be able to finish school with some type of tool to improve the prevailing conditions. This will eventually improve the living standards at home and the entire community. The present provisions for industrial arts and a proposed provision for a future industrial arts program is stipulated in the next chapter.

CHAPTER VI

THE PHYSICAL PROVISIONS FOR INDUSTRIAL ARTS AT WASHINGTON HIGH SCHOOL, STILLWATER, OKLAHOMA

This chapter is prepared to present an industrial arts program that is thought to contribute to community life. The industrial arts program being offered at Washington high school in 1950 shall be discussed along with future provisions for industrial arts in this school. The future provisions shall be based on the information obtained from the survey of the Washington High School and the Negro community of Stillwater, Oklahoma.

PART A

The Shop as it is in 1950

Few changes have been made in the industrial arts shop in the Washington high school in the past decade. This section of the chapter will present the type of building in which the shop is now located, the space provided, the major items of equipment and the industrial subjects now being offered.

Type of Building. The shop building is a part of the main school building and is a brick structure. The gymnasium and auditorium separate the shop from the other classrooms.

The students come around the building and enter the shop through an overhead door which faces the street. The natural lighting consists of two six by eight feet double windows eight feet apart. The entire shop has cement flooring.

Space. The shop area is thirty-six by twenty feet. Space for project storage, wood storage and lecture area is not available. Space now allowed does not seem appropriate for the students and equipment now present. A floor plan of the present shop is shown as Plate I on page 72 of this thesis.

The Major Items of Equipment. The major items of equipment now in use in the Washington high school shop include the following:

Equipment	Number
One pupil woodworking benches	7
Disc sander	1
Wood lathe	1
DeWalt saw	1
Grinder	1
Delta combination saw and jointer	1
Band saw	1
Patching machine	1
Stitching machine	1
Trimmer	1
Finishing machine	1
Cement press	1
Work table	1

Industrial Subjects that May be Offered. The industrial subjects now being offered consist of woodworking and shoe repairing. With the equipment now available, other shop courses

Plate I. Floor Plan Drawing of the Industrial Arts Shop
at Washington School, Stillwater, Oklahoma.

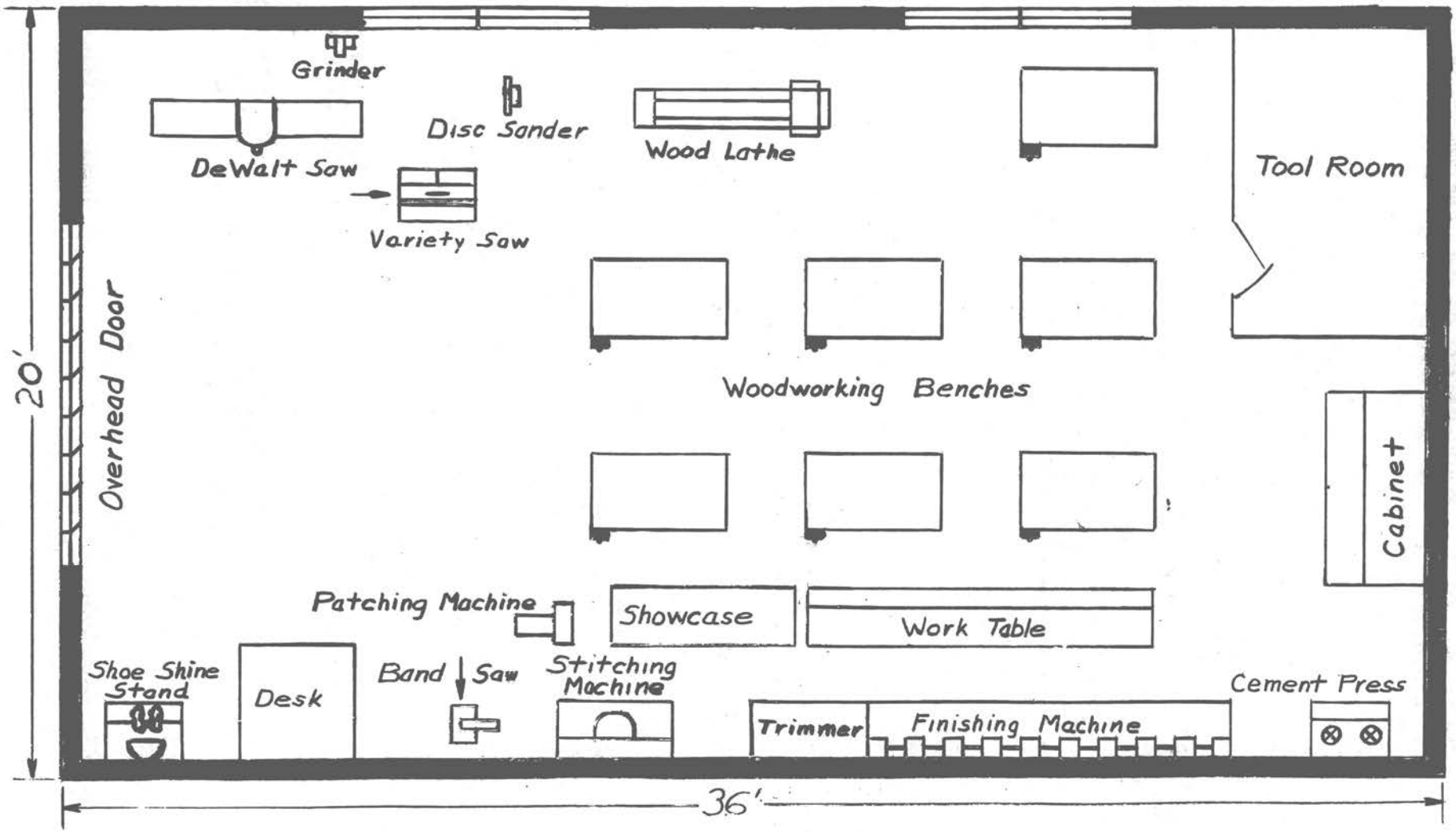
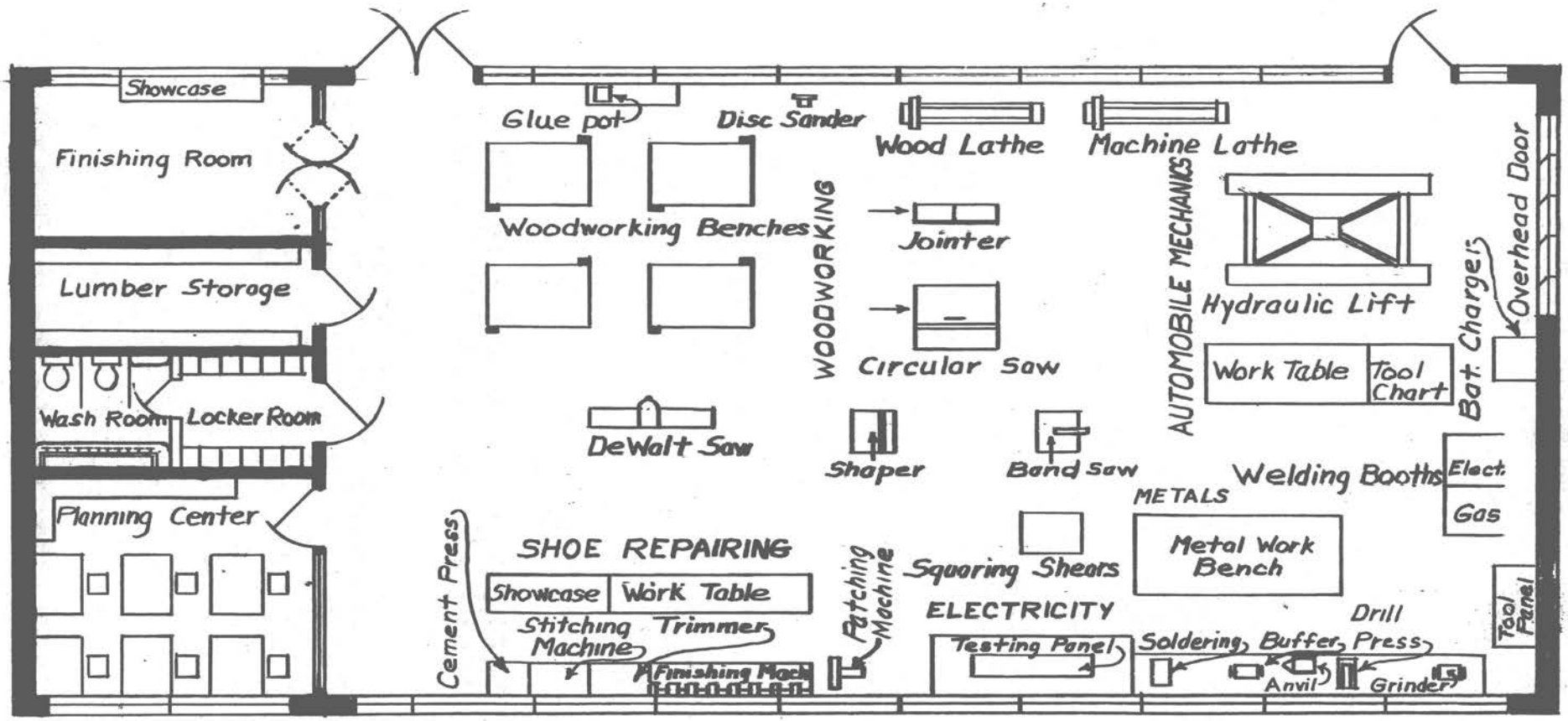


Plate 2. Floor Plan Drawing of the Proposed Industrial Arts Shop at Washington School, Stillwater Oklahoma



may be offered. These courses may be:

leathercraft	upholstery
plastics	carpentry
woodturning	

Some phases of upholstery are done in the shop at times but it is not considered one of the industrial subjects being offered in the school.

The course in shoe repairing is offered to special students along with the regular high school students. A special student may work in this section of the shop at any time when the shop building is open for class work.

The students taking woodwork are required to draw their project before commencing work on it. This is thought to give the students some experience in mechanical drawing since time and space are not allowed for this course.

Shop Training. The pupils in the Washington High School begin taking shop courses in the seventh grade. The seventh and eighth grade boys attend the woodworking class fifty minutes each day. The ninth and twelfth grade pupils attend the class in shoe repairing for fifty minutes each day. The pupils in the tenth and eleventh grades do not take shop courses.

PART B

Proposed Provisions in the New Building

An industrial arts program that will meet the needs of the community should be the purpose of all school work shops located in a small Negro community. Physical provisions for

such a shop should also be determined. This section of the chapter is designed to present a school shop that is equipped to teach practical activities which confront students under normal living conditions. Also, to give the students experience which may be useful toward making contributions towards community life. The operations which may be done in the different shop courses along with the shop training will also be considered. The last topic contains a suggested list of equipment for each shop course.

The Shop. The space for the new shop building at Washington High School was determined before the genesis of this writing. The shop equipment, arrangement and the shop courses offered in the space allowed for industrial arts in the new building, is proposed from the writers knowledge of industrial arts and from the information obtained from the questionnaires.

The shop illustrated in Plate 2, page 75, is designed to house the industrial arts program in the junior and senior high school or pupils from the seventh through the twelfth in any small community. The shop is equipped to teach metal working, shoe repairing, auto mechanics, woodworking, drawing, wood finishing, and electricity. The shop has a built-in planning room, lumber room, display case, lockers, washroom and finishing room. The planning and finishing rooms have glazed partitions dividing them from the main room of the shop. The shop has good natural lighting, but should also have from twenty to thirty foot candles of artificial light on bench tops.

The walls are painted green to recede the natural lighting. The ceiling should be fifteen feet high to diffuse the light from the windows to all parts of the shop.

Equipment. The shop has the following equipment:

Equipment	Number	Equipment	Number
Drafting tables	6	Cement press	1
Stools	6	Stitching machine	1
Woodworking benches (double)	4	Trimmer	1
DeWalt saw	1	Finishing machine	1
Gluepot	1	Patching machine	1
Disc sander	1	Testing panel	1
Wood turning lathe	1	Squaring shears	1
Circular saw	1	Soldering furnace	1
Jointer	1	Buffer	1
Shaper	1	Anvil	1
Band saw	1	Drill press	1
Tool panel	1	Grinder	1
Machine lathe	1	Hydraulic lift	1
Oxy-acetylene welding equipment	1	Battery charger	1
Electric Generator	1	Metal work bench	1
Tool cabinet	1	Work tables	2
		Electric welding machine	1

The machines are painted a darker shade of green. The edges of the working surfaces are painted yellow to contrast with the work. Operating controls are painted yellow and the electric switches on all machines are painted red.

Operations that Can Be Performed in the Shop. The operations listed are not all the possible project materials but are representative of the types of operations that can be given with profit from the general educational point of view. These operations will also have practical value from the standpoint of social utility.

(4) Wire an extension cord for a lamp.
(5) Read the electric meter.
(6) Install a radio set.
(7) Do simple house wiring, 110 bolts, A. C. current.
(8) Repair small motors.
(9) Repair electrical heating equipment.

Drawing:
(1) Read working drawing.
(2) Make a sketch.
(3) Do simple lettering.
(4) Make orthographic drawings and art leather work.

Shoe Repairing:
(1) Half sole shoes.
(2) Put on shoe heels.
(3) Put on leather plates.
(4) Link belts.
(5) Lapel ornaments
(6) Make coin purses.

Woodwork and Carpentry:
(1) Use simple tools in squaring stock to dimensions.
(2) Use glue for general repair.
(3) Select and use nails and screws.
(4) Set hinges on doors.
(5) Plane a door edge to fit.
(6) Use different types of bits and drills.
(7) Install a screen in a window or door.
(8) Put a new handle in a hammer.
(9) Make small projects out of wood.
(10) Make a picture frame.
(11) Make table legs.
(12) Sharpen a plane iron.

Finishing:
(1) Apply paint to new or old surfaces.
(2) Apply stain, filler, and varnish on new wood.
(3) Refinish furniture and woodwork.
(4) Use varnish and paint remover.
(5) Apply paste filler to open-grained wood.

Metalwork:
(1) Sharpen knives.
(2) Repair cooking utensils.
(3) Clean and tin a soldering iron.
(4) File a key.
(5) Adjust and sharpen a lawnmower.
(6) Use solder in repair work.
(7) Weld a crack in metal.
(8) Weld pipe together for a clothesline support.

(9) Make a dust pan.
(10) Make a funnel.

Automobile Mechanics:
(1) Remove carbon and grind valves.
(2) Fit a new set of piston rings.
(3) Overhaul the cooling system.
(4) Check fuel system and adjust carburetor.
(5) Wire ignition system and test spark plugs.
(6) Test, recharge and care for a storage battery.
(7) Wire a car for headlights, dash lights, and tail lights.
(8) Adjust steering gear.
(9) Clean and adjust the front wheel bearing.
(10) Overhaul and lubricate a rear axle.
(11) Adjust and clean the clutch.
(12) Take up connecting rod bearings.
(13) Take up main bearings.

Shop Training. Shop training in this proposed program is thought to expose the seventh, eighth and ninth grade pupils to enough shop experiences so that they might discover their ability to do mechanical operations while learning some semi skills. As the pupil advances to the tenth, eleventh and twelfth grades more emphasis is placed on exploring one phase of shop work such as automobile mechanics, woodwork or whatever course offered in the shop that will prepare the student to make some contribution to the home and community. The student will also be prepared to pursue further study in this particular field if he so desires.

Suggested Lists of Equipment. The equipment lists presented here were printed in School Shop, in April, 1950. (21, page 39-40.) Tools preceded by an asterisk indicates the tool listed by the students that answered the questionnaire.

The equipment lists are based on instructional divisions equipped for eight boys. Modification can be made by increasing or decreasing the number of individual tools.

Automobile Mechanics

	Number
Hoist, hydraulic	1
Wrench, socket, end, box, crescent, 6", set, each	2
Wrench, crescent, 8", 10", each	3
Wrench, crescent, 12"	2
Wrench, monkey, 8", 10", each	2
File, flat, bastard and smooth cut, each	6
File, flat, 2nd cut	8
Screwdriver, plastic handle, 6"	8
Screwdriver, plastic handle, 8"	6
Screwdriver, plastic handle, 10"	4
Screwdriver, plastic handle, 12"	2
Screwdriver, Phillips, No. 5-9	3
Pliers, combination, 6"	4
Pliers, combination, 8"	8
Pliers, needle-nose, 6"	6
Pliers, side-cutting, 7"	6
Chisels, cold, ½"	4
Tire irons	4
Valve lifters	1
Dolly block, general purpose, toe, heel, each	2
Hammer, dingling, auto body	4
Hammer, bumping, auto body	2
Hammer, bumping, bullet head	2
Hammer, roughing out	2
Hammer, fender bumping	2
Bending iron	2
Vises, bench, machinist	4
Bench, work	2
Welder, electric, fender	1
Helmet, welding	2
Grinder, 2-wheel, 6" to 8"	1
Drill press, ½" chuck capacity	4
Creeper, automotive	1
Charger, battery	1
Panel, testing, motor tune-up	1
*Jack, automobile	1

Electricity

Ammeters, DC, 0-25a	2

Ammeters, AC, 0-10a. 2
Appliance tester. 1
Battery clips. 12
Batteries, dry, 1½v. 8
Batteries, flashlight. 8
Battery, storage, 6v. 1
Bench furnace. 1
Bits, electricians, ¼", 3/8", ½". 3
Blow torch, alcohol. 1
Box connectors. 12
Boxes, outlet. 4
Boxes, switch 4
Conduit bender, 3/4". 1
Electrical tester. 1
Knives, sloyd. 4
Mounting boards, 24" x 30". 8
Nippers, end cutting. 3
Pliers, linesmans, 8". 2
Pliers, flat-nose, 6". 2
Pliers, needle-nose, 6". 2
Soldering coppers, 1#. 4
Soldering coppers, electric. 2
Transformers, bell. 4
Voltmeters AC, 0-150. 2
Voltmeters DC, 0-10. 2

Drafting

Drawing boards, 18" x 24". 8
Drafting instruments, sets. 4
Scales, architects. 8
Stools, draftsman. 8
Triangles, 30 degrees by 60 degrees. 8
Triangles, 45 degrees, 6". 8
T-square 24". 8
French curves. 2

Metal

Anvil, 50#. 1
Bar folder, 30". 1
Bench, sheetmetal, 40" x 60". 1
Bending jig. 1
Cans, oil. 2
Chisel, cold, set, 3/8", ½", 3/4", set. 1
Divider, 8" wing type. 1
Drill set, 1/8" to 3/4" in 1/32". 1
Files, mill, bastard cut, 10". 2
Files, ½ round, smooth cut, 10". 2

Files, triangular, 2nd cut, 8". 1
Files, ½ round, vixen, 10". 1
Files, round, bastard, 8". 3
Files, round 2nd cut, 6". 1
File cleaner. 1
Com. furnace, melting, 3-burner gas, 25#. 1
Groover, hand, #4. 1
*Hacksaw frames. 2
Hand seamer. 1
Hammer, art metal forming, 6" head. 1
Hammer, art metal forming, 4-5-6. 1
*Hammer, ball pein, 12 oz.. 2
Hammer, ball pein, 20 oz.. 2
Hammer, riveting, 12 oz. 1
Hammer, setting down, 12 oz. 1
Hammer, soft face, 16 oz. 1
Jewelers saw frame and blades. 1
Mallet, dogwood, forming. 1
Mallet, hickory. 1
Pipe cutter, roller type, 1/8" to 1". 1
Pipe reamer, 1/4" to 1 1/4" diameter. 1
Pipe stock and dies, 1/4" -1". 1
Pliers, combination, 8", slip joint. 1
Pliers, side cutting, 7", over all 1
Punch, center. 2
Punch, hollow, 1/2". 1
Punch, prick. 1
Punch, solid, 3/32", 1/8", 5/32", 3/8", set. 1
Rivet set, no. 4,5,6,8. 1
Rotary combination machine. 1
*Ruler, 24". 1
Ruler, 6". 2
Sal ammoniac brick. 1
Screw plate set, tap and die size 1/4" - 5/8". . . . 1
Snips, tin, 3" cut. 2
Soldering copper, 2#. 2
Soldering copper, 3#. 1
Slip roll, 30". 1
Stake holder, 30". 1
Stake, hollow mandrel, 40". 1
Stake, blowhorn, 27". 1
Stake, beakhorn, 33". 1
Stake, square, 2 3/4" x 4 1/2". 1
Stake, round dia. head 3". 1
Vises, 3 1/2" jaws. 3
Vise, pipe capacity, 1/8" to 2". 1
Wrenches, pipe, 10", 14", each 1
Grinder, bench type, 1 H.P.. 1
Lathe, 9" x 42", back geared, quick ch. 1
Shaper, 1/2" x 7". 1

Welder, electric, 200 amp. 1
Welding, gas, including torch. 1
Welding hood. 2
Welding goggles. 2

Wood

Auger bits, 1/4" to 1" by 16ths, set. 1
Bench with vises, 2 students 4
Bench stop. 8
Bevel, T, 8", iron handle. 1
*Brace, bit, 8" swing. 2
*Burnisher, oval. 1
Caliper, 6", 8" outside, each. 1
Caliper, 6", inside. 1
Can, safety, 1 gal. 2
Can, safety, oil waste, 8 gal.. 1
*Chisel, socket type, 1/4" to 2", set. 1
Chisel, socket type, 3/4". 4
Chisel, socket type, 1/4". 4
Chisel, woodturning, sets. 1
Clamp, C, 6". 2
*Clamp, 1 bar, 48". 8
*Clamp, hand, 10", 12", each. 2
Countersink rose, 3/4". 1
Dowel bits, 1/4" - 1/2" sets. 1
Dividers, 6", 8", each. 1
Drills, carbon, wire gauge, no. 1, 12, 39, 32, 19, 27 (2 each 28), sets. 1
*Drill, hand. 1
Duster, bench. 14
Expansion bit, 7/8" to 3". 1
File cleaner. 1
File auger bit. 1
*File 6", 10" cabinet, each. 1
File, saw, slim taper, 7". 1
File, saw, extra slim taper, 7". 1
File, mill, 10". 1
File, flat wood, 10". 1
File, half-round rasp, 10". 1
File, round 8", 10", each 1
Gauge, bit. 1
*Gauge, marking. 4
Glass cutter. 1
*Hammer, claw, 16 oz. 2
Hammer, claw, 13 oz. 1
Hammer, claw, upholsterer's 1
Knife, sloyd. 4
Knife, putty. 1
*Knife, draw. 2

*Level, aluminum, 26"	1
*Mallets	4
Nail set, 4/32", 5/64", each	1
Oil can	4
Plane, block	1
*Plane, jack	8
Plane, jack, double plane iron	24
Plane, smooth	1
Plane, jointer	1
*Pliers, combination 6"	1
Pliers, side-cutting, 8"	1
Pliers, needle-nose, 6"	1
*Ruler, 24", wood	8
*Saw, coping, frame	4
Saw, coping, blades	24
*Saw, back	4
*Saw, compass	1
*Saw, crosscut, 24", 10 pt.	1
Saw, crosscut, 26", 6 pt.	1
Saw, crosscut, 24", 8 pt.	2
Saw, mitre and box	1
*Scraper, hand	4
Scraper, cabinet	1
*Screwdriver, 3"	1
Screwdriver, 4", 6", each	2
Slip stone	1
Spoke shave	1
*Square, carpenter	1
*Square, try	4
*Wrecking bar	1
*Wrench, set end	1
Grinder, eye shields	1
Router, electric	1
Router, bits	10
Drill press, floor model, 15"	1
Lathe, wood, 12" swing, 36" bet. centers	1
Jointers, 6"	1
Saw, band, 16"	1
Saw, jig, 24"	1
Saw, 10", tilting arbor	1
Saw, 10", combination	1
*Saw, hand rip	1
Saw, DeWalt, 10"	1
Shaper, Spindle	1
Sander, disc 12"	1

The following tools are not included in the tools listed in the School Shop magazine:

Shoe Repairing and Art Leatherwork

*Hammer, tack	3
*Knife, curve	5
*Knife, straight	5
Hammer, corrugated	3
Nippers, pulling	5
Nippers, cutting	5
Awl, sewing	5
Awl, stabbing	5
Needle, hand sewing	24
Snap setting outfit	1
Mallet	2
Scissors	2
Stamping tool	4
Tracer	4
Edge trimmer	2
Edge creaser	2
Spacing wheel	1
Punch	2
Eyelet spreader	1
Modeler	4
Finishing machine	1
Patching machine	1
Stitching machine	1
Cement press	1

In this chapter is presented the industrial arts program at Washington School in 1950 and the proposed program for this school. A floor plan, lists of equipment and shop training is presented for the old and new industrial arts program. The equipment lists for the proposed shop were selected with the thought in mind that the students, school and community will receive wholesome benefit from the use of this equipment. This thought that a complete living would include the use of practical experience with tools and equipment along with desirable social habits and attitudes.

CHAPTER VII

CONCLUSIONS AND RECOMMENDATIONS

This study concerns industrial arts in the small Negro High School with emphasis placed on the contributions it makes to community life. A survey was made of the Washington School and the Negro community of Stillwater, Oklahoma. The purpose of the survey was to determine in what way the present industrial arts program in the school contributed to community needs and to propose future provisions for industrial arts in the new school which will be constructed in 1951.

Conclusions from the Survey of the Washington School. The conclusions based on the survey are:

1. Seventy-four per cent of the pupils are in grades one to seven.
2. Shop subjects are not offered to the tenth and eleventh grade boys.
3. The shop building is too small to accommodate the students.
4. The boys are not receiving enough shop training to be of much help toward improving community life.
5. Not enough time is used for familiarizing the students with hand tools.

6. The shoe shop equipment is adequate for boys of junior and senior high school age.
7. The students seem interested in shop courses.
8. The shop working conditions are critical.

Conclusions from the Survey of the Negro Community. From the survey made of the community it is concluded that:

1. Few families have modern conveniences.
2. Not enough tools are owned by the fathers or sons to do the necessary mechanical operations at home.
3. Twenty-one out of thirty-six parents owned automobiles.
4. Most of the fathers and the boys not in school are laborers.
5. Six fathers out of twenty-nine and seven mothers out of thirty had finished high school.

Recommendations. In view of the fact that this study was made for the purpose of proposing an industrial arts program for the new Washington School, it is recommended that:

1. Shop courses be offered to all high school boys at all grade levels.
2. More industrial subjects be added to the industrial arts program.
3. Pupils be drilled in the recognition and spelling of names of shop tools.

4. Some form of shopwork be offered to the boys in the elementary grades.
5. Night school classes in shopwork be offered for the parents of the community.
6. More studies of this type be made.

This would make it possible for the industrial arts program in the Washington School to meet the needs of the students and the parents of the community. This will develop student and parent interest in the industrial needs of the community. Thus, the parents and the students will be more alert to detect discrepancies at home and in the community and have means of eliminating these inharmonious conditions.

APPENDICES

APPENDIX A SELECTED BIBLIOGRAPHY

APPENDIX B QUESTIONNAIRES USED IN THE SURVEY.

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APPENDIX B

QUESTIONNAIRES USED IN THE SURVEY

1. A questionnaire filled in by students concerning the mechanical jobs done by them and the tools used by them.

2. A questionnaire filled in by the parents concerning the cultural and mechanical environment of the students.

A survey as a part of the thesis
INDUSTRIAL ARTS IN THE SMALL NEGRO HIGH SCHOOL AND THE CONTRIBUTIONS IT MAKES TO COMMUNITY LIFE

by
Clifford R. Henderson, Graduate Student
School of Industrial Arts Education and Engineering Shopwork
Oklahoma Agricultural and Mechanical College
Stillwater, Fall 1950

Mechanical Jobs Performed

To: Students attending high school in the community.

Name:_____Class:_____

Age_____School:_____

INSTRUCTIONS: In the following list you will find a number of things that different boys have done. Put a check mark in the column before any of the items that you have done either in school shop work or out of school.

1. ( ) Sharpen a plane iron
2. ( ) Make a tool handle out of wood.
3. ( ) Put on shoe heels
4. ( ) Sharpen a knife
5. ( ) Make a cement floor
6. ( ) Paint window screens
7. ( ) Make screens for windows
8. ( ) Put in lighting fixtures
9. ( ) Take a bicycle apart
10. ( ) Glue drawers
11. ( ) Grind automobile valves
12. ( ) Connect a doorbell
13. ( ) Put a glass in a window
14. ( ) Clean spark plugs
15. ( ) Sandpaper woodwork
16. ( ) Put on a tire casing
17. ( ) Paint a house
18. ( ) Varnish a floor
19. ( ) Sharpen lawnmower blades
20. ( ) Drive an automobile
21. ( ) Put shingles over a leak in house
22. ( ) Operate a printing press
23. ( ) Make a metal box
24. ( ) Half sole shoes
25. ( ) Repair the cord in an electric iron
26. ( ) Plane a door edge to fit
27. ( ) Make calling cards
28. ( ) Varnish a chair or any other furniture
29. ( ) Make a metal waste basket
30. ( ) Make a metal mail box
31. ( ) Mix cement
32. ( ) Make a leather book cover
33. ( ) Make a leather wallet

34. ( ) Make an electric motor
35. ( ) Put in an electric fuse
36. ( ) Draw up plans for a house
37. ( ) Weld pipe together for a clothesline
38. ( ) Reline brakes on an automobile
39. ( ) Make a bookrack
40. ( ) Upholster the seat of a chair or stool
41. ( ) Use a rivet gun for making picture frames from metal
42. ( ) Stain a project made from wood.
43. ( ) Make a metal match box
44. ( ) Paint or whitewash a shack
45. ( ) Make book ends
46. ( ) Put on shock absorber for automobile
47. ( ) Make a dust pan
48. ( ) Make a funnel
49. ( ) Repair kitchen utensils with soldering iron
50. ( ) Connect a gas stove
51. ( ) Weld a crack in metal

Tools you have Used

INSTRUCTIONS: On the following lines list all tools you have used either in school shopwork or out of school.

Thank you very kindly for your cooperation.

Clifford R. Henderson

Clifford R. Henderson

A survey as a part of the thesis
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Cultural and Mechanical Environment

To: Parents in the community.

Name:_____Occupation of Father:_____

Number of years in school of father. (circle one). Grade 4 5 6 7 8 HS I II III IV Univ. Fr. Soph. Jr. Sr. Gr.

Number of years in school of mother. (circle one). Grade 4 5 6 7 8 HS I II III IV Univ. Fr. Soph. Jr. Sr. Gr.

Occupation of boys not in school: (list only the boys that are living in the community).

Age	Occupation

DIRECTIONS: Indicate yes by placing a check mark in the parenthesis and a no by an "O". Questions such as number 3 are to be answered by underlining the correct answer.

Examples: (/) Gas stove. This indicates that you do have a gas stove in your home.
(O) Gas stove. This indicates that you do not have a gas stove in your home.
(/) Mixer, electric, hand. This indicates that you have an electric mixer.

1. ( ) Telephone
2. ( ) Radio, enclosed in a cabinet
3. ( ) Lighting, electric, gas, oil, gasoline
4. ( ) Motor driven washing machine
5. ( ) Electric vacuum
6. ( ) Electric iron
7. ( ) Hot water system
8. ( ) Bathtub
9. ( ) Kitchen floor, unpainted, painted, linoleum

10. ( ) Indoor bath, privy
11. ( ) Own automobile
12. ( ) Lamps, reading, floor
13. ( ) Automatic washing machine
14. ( ) Television
15. ( ) Bicycle

Tools in the Home

DIRECTIONS: Indicate yes by placing a check mark in the parenthesis and a no answer by an "O". There are two columns, one for tools owned by father and one for tools owned by son.

Father	Son		Father	Son	
( )	( )	Brace and bits	( )	( )	Saw, rip
( )	( )	Blow torch	( )	( )	Saw, keyhole
( )	( )	Cabinet scraper	( )	( )	Saw, crosscut
( )	( )	Draw Knife	( )	( )	Screw driver
( )	( )	File	( )	( )	Soldering iron
( )	( )	Glass cutter	( )	( )	Square, small
( )	( )	Hammer, claw	( )	( )	Tinner's snips
( )	( )	Leather punch	( )	( )	Vise
( )	( )	Level	( )	( )	Whetstone
( )	( )	Miter box for saw	( )	( )	Wood clamps
( )	( )	Plane, block	( )	( )	Work bench
( )	( )	Pliers	( )	( )	Wrenches
( )	( )	Plane, jack	( )	( )	Carpenter's rule
( )	( )	Putty knife	( )	( )	Square, steel
( )	( )	Chisels	( )	( )	Emery wheel
( )	( )	Saw, coping	( )	( )	Anvil

Mechanical Operations

Check things father has done about the house. Check things boy helps with or has done himself.

Father	Son	
( )	( )	Sharpen lawnmower blades
( )	( )	Plane doors down to fit
( )	( )	Put in window panes
( )	( )	Replace screen wire in doors or screens
( )	( )	Put up shelves
( )	( )	Fix leaks in kettles
( )	( )	Sharpen carpenter tools
( )	( )	Make an ironing board
( )	( )	Put putty around window panes
( )	( )	Sharpen knives
( )	( )	Repair engine in automobile
( )	( )	Shingle roof or repair roof by replacing shingles
( )	( )	Replace washers in faucets
( )	( )	Paint houses

Thank you very kindly for your cooperation.

Clifford R Henderson

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THESIS TITLE: INDUSTRIAL ARTS IN THE SMALL NEGRO HIGH SCHOOL AND THE CONTRIBUTIONS IT MAKES TO COMMUNITY LIFE

NAME OF AUTHOR: CLIFFORD R. HENDERSON

THESIS ADVISER: DEWITT HUNT

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