

A SURVEY OF INDUSTRIAL ARTS TEACHER EDUCATION  
IN TWENTY-TWO NEGRO COLLEGES AND UNIVERSITIES  
AND A  
PROPOSED INDUSTRIAL ARTS TEACHER EDUCATION  
PROGRAM

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PROGRAM

By

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PROGRAM

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## CHAPTER I

### THE PROBLEM AND SOURCES OF INFORMATION

A broad training curriculum offered in industrial arts teacher education is characterized by a good balance of academic, technical, and professional subjects. A well balanced curriculum in industrial arts, for four years, will enable the future industrial arts teacher to develop the essential manipulative skills; to obtain a richer background of technical and related information; to obtain a broader cultural understanding; and to develop through the professional subjects, the techniques of teaching and understanding of youth needs and current educational problems. The curriculums of the twenty-two Negro Colleges and universities are very similar in offerings and requirements, for the bachelors of science degrees, in industrial arts teacher education.

Statement of the Problem. The primary purposes of this study are: (1) to determine how many Negro colleges and universities offer courses in industrial arts; (2) to determine what general, professional, and technical courses are offered; (3) to inspect teacher qualifications; (4) to find the geographical location of these institutions; and

(5) to suggest a desirable curriculum for the preparation of junior and senior high school industrial arts teachers.

The Need for this Study. Surveys are needed in all fields which will show trends and statistical summaries, to furnish information on which predictions for future developments may be based; to obtain a background of information and an understanding of the objectives of each industrial arts department; and to propose objectives for the industrial arts programs of these institutions.

Studies of Similar Nature. In 1949, John Bruce Tate<sup>4</sup> conducted a survey to analyze the curriculum requirements and offerings in fifty-one selected colleges and universities in America; to find the problem that affects the requirements and offerings, which tend to improve or retard the development of an acceptable curriculum for the preparation of junior and senior high school industrial arts teachers.

The result of this study found that the industrial arts teacher education varied considerably in the fifty-one selected institutions. Some of the institutions placed emphasis on the cultural aspects by offering general education courses, while others emphasized the technical aspects by offering little general education for prospective teachers in industrial arts.

The total requirement of semester credits were 131. These semester credits were divided as follows: Sixty-one credit hours of general education, nineteen credit hours in the industrial arts professional courses, forty credit hours in the industrial technical courses, and eleven credit hours in electives.

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<sup>4</sup>Tate, John Bruce, An Analysis of Industrial Arts Education Curriculums in Fifty-one Selected Colleges and Universities, Master's Thesis, Oklahoma A. & M. College, Stillwater, Oklahoma, 1949, 105 pages.

Paul T. McHenry made a similar study in 1933.<sup>5</sup> This survey was conducted to determine the curriculums, personnel, building and equipment costs, and academic requirements in forty-two selected state teacher colleges of the Midwest.

The analysis of the findings showed that the distribution of the credit hours required for graduation, in the forty-two teacher institutions, were in technical, academic, professional, and free electives courses.

Procedure. A brief one page inquiry form was devised for the purposes of this survey (see Appendix). These forms were mailed to sixty Negro colleges and universities in the United States. Catalogs were received from forty-two of the colleges, and four sent letters stating that their catalogs would be of no use in this survey as industrial arts education was not offered at that particular school. It was found in reviewing the forty-two catalogs received that twenty-two colleges and universities have industrial arts included in their curriculum.

Sources of Information. The names of the colleges and universities used in this study were taken from a volume entitled, A Survey of Negro Colleges and Universities.<sup>6</sup>

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<sup>5</sup> McHenry, Paul T., A Comparative Study of Industrial Arts Education Programs for Forty-Two Teacher Colleges, Master's Thesis, Oklahoma A. & M. College, Stillwater, Oklahoma, 1933, 39 pages.

<sup>6</sup> Klein, Arthur J., (Bureau of Education), Survey of Negro Colleges and Universities, Pages 464.

The writer also received a later publication, a Negro College Quarterly,<sup>7</sup> to determine whether or not any of the institutions were omitted because of the change of names which may have taken place since the publication of the survey in 1929, by the Bureau of Education.

Limitation of the Problem. This report like other reports or extensive studies is limited to the survey techniques of locating educational information and data. This study is limited to industrial arts education in twenty-two Negro institutions and colleges. Teacher qualification is limited to the individual catalog from each institution for the year the catalog was published. The two and four year curriculums serve another limitation of this study. No attempt has been made to compare the industrial arts curriculum of the institutions studied with each other or any other institution.

Some courses in the industrial arts curriculums, as shown in the catalogs, are found under the supervision of widely separated schools, with different objectives, aims, and purposes. A true study cannot be made of the offerings in general education, technical or professional education of the industrial arts program. This is a limitation of the report.

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<sup>7</sup> Oak, Vishnu V., Institutions of Higher Learning Among Negroes in the United States of America, Page 267.

The writer could not find any compiled history or studies of similar nature of Negro colleges and universities. Therefore, the information in this report was taken from Negro histories, journals, and surveys of Negro colleges in general. The means of securing information serves as a limitation.

The writer suggests that a more extensive study be made of the industrial arts program of the Negro colleges and universities. This study should be concerned with the Negro leaders in the field of industrial arts education.

## CHAPTER II

A BRIEF HISTORY OF THE DEVELOPMENT OF INDUSTRIAL  
ARTS FOR NEGROES IN THE UNITED STATES

In the institutions under consideration, the aims vary greatly. In some, the primary purpose is to serve a city, a state, or a church, consequently, a large variety of educational programs are offered in the attempt to meet the needs of Negro life.

The objectives of Negro colleges and universities have undergone marked changes since the first institutions were established. From 1854 to 1870 was the period in which were concentrated the pioneer efforts. During these years eighteen Negro colleges were founded by white leaders from the north, with the cooperation of churches, missionary organizations, and philanthropists. Private agencies were the sole promoters of Negro higher education, at the time, as the states manifested little interest in the matter.

The second period was between 1870 and 1890, when nine Negro land-grant colleges and thirteen Negro colleges under state denominational control were founded. This period marked the beginning of the active efforts of Negroes, both independently and in cooperation with others, to establish and to administer their own colleges; and as a result of the Morrill Acts and Nelson amendment both the

Federal and State Governments began to claim a greater interest in the higher education of Negro youth.

The third period, between 1890 and the present time, marks the rapid growth of State normal schools and teacher's colleges, and other institutions, both public and private, with strong teacher-training objectives.

#### Early Trends of Industrial Arts Education for Negroes

In 1870, education for Negroes in the south had not reached a very high stage of organized efficiency, while Negroes in the northern states were enjoying splendid advantages both in high school and in colleges. The industrial development of the south as evidenced by improved and scientific farming, the establishment of mills, factories, great lumber mills, and mining, brought a new economic situation to the south which was soon reflected in better institutions for Negroes.

It was conceded that industrial arts education was essential to the making of comfortable homes and that scientific training in industry would make life more prosperous. Yet, the objection was raised that industrial training might supersede higher education. Industrial education in the south was slow in development because of the lack of finance. Later, the government and philanthropy aided in the advancement of the industrial program.



Government Appropriations. A provision of the Morrill Land-Grant Act, passed by Congress in 1862, was that each state could establish a college for teaching mechanical arts<sup>8</sup> but no such schools for Negroes in the south were established until Congress made further provisions by the Act of 1890. Southern states took advantage of the act and established institutions for Negroes in each of the southern states. (See pages 11-18).

John F. Slater Fund. In 1882, the John F. Slater Fund was created with an initial gift of one million dollars. Negroes were made the chief beneficiaries of this fund. The fund was granted with the general objective of uplifting the lately emancipated population of the southern states by conferring on Negro people the blessings of the Christian education. The denominational schools received considerable help from the Slater Fund in the payment of salaries of teachers and in scholarships for teachers in summer schools. "Industrial education was not specifically mentioned, although the training of the teachers and the encouragement of institutions which trained teachers were given consideration."<sup>9</sup>

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<sup>8</sup> Thomas O. Fuller, Pictorial History of the Negro, page 111.

<sup>9</sup> Charles H. Wesley, Negro Labor in the United States,

John D. Rockefeller Fund. The John D. Rockefeller fund was created in 1903 with the initial gift of one million dollars. The fund was to help the Negro schools of the southern states. The fund served a three-fold purpose: (1) To furnish higher education for Negroes, (2) to raise standards of education in the south, (3) and to help without regard to race.<sup>10</sup> This fund was granted after some of the industrial schools were founded.

There were two additional funds contributed by (1) Anna T. Jeans in 1907 and the other (2) Julius Rosenwald Foundation in 1912.

Anna T. Jeans Fund. The Jeans fund was created in 1907 with an initial gift of one million dollars.<sup>11</sup> In the establishment of the Jeans fund it was stipulated that the use of the fund should be determined by the wishes of Hollis B. Fresell, President of Hampton Institute, and Booker T. Washington, President of Tuskegee Institute. The fund was for the purposes of (1) the appointment of teachers to do industrial work in rural schools under the appointment of the county superintendent; (2) the appointment of special teachers to do extension work using centrally located schools as the basis of operations;

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<sup>10</sup> Thomas O. Fuller, Pictorial History of the Negro, page 128.

<sup>11</sup> Ibid. page 127

(3) the appointment of county agents to improve rural homes and schools, and (4) the creation of public sentiment for better Negro schools.

The Rosenwald Foundation. The Rosenwald Foundation<sup>12</sup> has contributed more than thirty million dollars to education in the South, and thousands of schools bear the name of the great philanthropist, Julius Rosenwald. Aid has been given in the erection of 5,357 school buildings in 883 counties in the south, and in fifteen southern states. It was stipulated that the fund of the Rosenwald Foundation should be disposed of within twenty-five years after the death of the founder. This was regarded wise for three reasons: (1) The race (Negro) should begin to come into its own and largely assist in providing for its own needs; (2) the type of education promoted then might not be a great necessity after twenty-five years; (3) the field should be cleared so as not to hamper other types of philanthropy that might desire to project their program.

The contributions of the philanthropists were made during the beginning of the twentieth century after the establishment of the institutions studied in the report. The writer feels that this was a great step in further industrial training in many of the privately owned institutions.

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Thomas O. Fuller, op. cit., page 60.

### Establishment of Colleges or Institutes

After the Civil War, the need was felt by members of both races for a school whose purpose would be to train Negroes to take their place in competitive industry. This need furnished the necessary impetus for the establishing of several schools of this type throughout the south, some of which are of particular importance in the history of the development of industrial arts.

Hampton Institute: Hampton Institute, the first industrial school for Negroes of any considerable influence, was founded in 1868 by General Samuel C. Armstrong,<sup>13</sup> an officer of the Negro troops during the Civil War. General Armstrong foresaw the needs for educational institutions for the Negroes for the following purpose:

To train selected Negro youth who should go out and teach and lead their people, first by examples, by getting land and homes; to give them not a dollar that they could not earn themselves; to teach respect for labor; to replace stupid drudgery with skilled hands and to these ends build up an industrial system for the sake not only of self-support and intelligent labor but also for the sake of character.<sup>14</sup>

General Armstrong was the first principal of Hampton Institute. In the year of 1870, during General Armstrong's

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<sup>13</sup> Charles A. Bennett, History of Manual and Industrial Education, Up to 1870. Page 245.

<sup>14</sup> Wesley, op. cit., page 219.

administration of the school secured a charter from the state of Virginia and has since been independent of denominational control. In 1878, Indians were admitted to the institute, but after 1912, when the national government withdrew the appropriation for their board, clothing, and traveling expenses, their attendance steadily declined until 1923, when it ceased entirely.

During approximately half a century, Hampton Institute was the land-grant college for Negroes for the state of Virginia. In 1930 the state changed its policy and the Federal Government withdrew the aid from the institution in favor of a state-controlled institution. Since that time, Hampton Institute has depended for its maintenance upon the income from endowment and upon gifts from philanthropists. The institution is a private corporation controlled by a self-perpetuating board of trustees of seventeen members, all of which are white with the exception of one Negro.

In 1927, as the result of an inspection made by the secretary of the state board of education and the supervisor of teacher training of the State of Virginia, Hampton Institute was accredited as a standard technical college.

Tuskegee Institute. Tuskegee Institute<sup>15</sup> had its beginning when two residents of Macon County Georgia, George Campbell, white, and Lewis Adams, Negro, feeling the needs of an educational institution, ask that a teacher be sent to Tuskegee, Alabama. Booker T. Washington came in answer to that call.

The second influence in the industrial training movement for Negroes was that of Booker T. Washington, who founded in 1880, what was known as the Tuskegee Normal Industrial Institute.

In formulating aims for the industrial college, Washington stated that:

Negroes must find new employment and learn new trades; build as well as live in houses; make as well as use furniture--construct bridges as well as pass over them. We need mechanics as well as ministers; workers in iron, clay, leather, authors, and other professional men. To live here, as we ought, we must foster ourselves to to our countrymen through their everyday cardinal wants.<sup>16</sup>

Tuskegee Institute is a privately endowed institution governed by a self-perpetuating board of nineteen members. Prominent philanthropists from the north and south are members of the board. Tuskegee has a two and a four year curriculum.

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<sup>15</sup> Thomas O. Fuller, Pictorial History of the Negro, page 205.

<sup>16</sup> Wesley, op. cit., page 219.

Delaware State College, Dover, Delaware, founded in 1947 was established under the provision of Morrill Act of Congress passed in 1862 and by the 114th General Assembly of the State of Delaware in 1891.

Texas State University, Houston, Texas, for Negroes was established in 1947 by act of the state legislature. Texas State University was established for the purpose of educating Negro students in the departments of Arts and Sciences, Pharmacy, and vocational and technical education.

Tennessee Agriculture and Industrial College at Nashville, Tennessee, was founded in 1912 as a two-year Junior College. In 1922, the institution was raised to a four year college. The college offers education in agriculture, home economics, engineering and mechanical industries.

Langston University, Langston, Oklahoma, was founded in 1897, by the Oklahoma legislature, with J. W. Johnson, president of the council or legislature, at that time a very eminent lawyer at Oklahoma City. The purpose was to instruct students in the departments of agriculture, arts and sciences, education, home economics, mechanical arts, and trades and industrial education.

Oakwood College, Huntsville, Alabama, opened its doors for the first time in 1896. The original name given to the institution was the "Oakwood Industrial School." After a number of years of operation, the name was changed to "Oakwood Manual Training School." Again in 1917, the name was changed to "Oakwood Junior College." The purpose of the department of mechanical arts is to prepare individuals to become skilled artisans and business men in industrial fields.

Fort Valley State College was founded in 1895 by leading white and Negro citizens of Fort Valley, Georgia, led by John W. Davison, graduate of Atlanta University. In this school industrial arts education is found in the department of arts.

Agriculture and Technical College, Greensboro, North Carolina, was established as the Agriculture and Mechanical College for the colored race by an act of the General Assembly of North Carolina in 1891. The work of the college is carried on through several major divisions or schools. These are the schools of agriculture, education and science, and mechanical arts.

West Virginia State College, Institute, West Virginia, founded in 1891 by the West Virginia State legislature for the purpose of the training of the colored students in general education, agriculture, home economics, technical and industrial curricula.



Agriculture and Mechanical College, Tallahassee, Florida, was founded by a constitutional provision and legislature enactment in 1887 as Colored Normal School. This institution is now known as the Agriculture and Mechanical College. Industrial arts is included in the college curriculum.

Wilberforce College, Wilberforce, Ohio was founded in 1886 and was named by the Cincinnati Conference of Methodist Episcopal Church, for the English statesman and abolitionist William Wilberforce. Industrial arts is included in the college curriculum.

Lincoln University, Jefferson City, Missouri, was founded in 1866 by soldiers and officers of the sixty-second United States infantry stationed at Fort McIntosh, Texas. The regiment was organized in Missouri. The men were volunteers and the regiment was made up principally of men from the state of Missouri. There were three purposes stated in the founding of the university, namely: (1) This institution shall be designed for the special benefit of free Negroes; (2) it shall be located in the state of Missouri; (3) its fundamental aim shall be to combine study and labor.

Maryland State College, Princess Anne, Maryland, was founded in 1886. The college began as a preparatory branch of the Centenary Bible instruction, a Methodist school chartered in 1867. Later, for the state of Maryland to receive federal funds the Negro institution was designated as the institution for training students in the field of mechanical industries, academic and agriculture.

Kentucky State College, Louisville, Kentucky, is the result of an act passed by the General Assembly of Kentucky in 1886. It was founded to teach only academic curriculums, but in 1890 there were added the department of home economics, and the department of mechanics.

Southern University, New Orleans, Louisiana, was founded in 1880 by the constitution convention of the State of Louisiana. Under federal acts of 1890 and 1907, known as the Morrill-Nelson Acts, the school was recognized by the federal government as a land-grant college offering definite training in mechanical education. Under provisions of the act, the school receives annually a certain per cent of the funds to carry on substantial training in industrial arts

Saint Paul's Polytechnic Institute, Lawrenceville, Virginia, was founded in 1880 by Reverend James Solomon Russell, Rector of Saint Paul's Church. The purpose of

Saint Paul's Polytechnic Institute is to instruct in industrial, technical, agriculture and academic fields.

Alabama Agriculture and Mechanical College, Normal, Alabama, was organized in 1875 as a state institution under the name of the "Huntsville Normal and Industrial College." William Hooper Council, an ex-slave, was founder of the school and was for thirty-five years the president. The aim of the college is to provide students with an opportunity to secure a functional education in terms of individual and social needs. This includes the preparation of workers in home economics, agriculture, mechanical arts, and teaching.

In 1873 Arkansas Agriculture and Mechanical College, Pine Bluff, Arkansas, for Negroes, was established as state separate college. Arkansas A. & M. College was operated as a junior college from 1873 to 1929 when the school elaborated into a standard four-year Negro college with a curriculum in industrial education and agriculture.

Alcorn Agriculture and Mechanical College, Alcorn, Mississippi, founded for white students in 1830. Later it was disbanded during the Civil War. In 1871 the college was changed by legislative enactment for the training of Negro students. Industrial education was made a part of the curriculum at the beginning of the first school term.

Winston-Salem Teachers College, Winston, North Carolina, was founded as the Slater Industrial Academy in 1892. In 1895 the college was recognized by the State of North Carolina and in 1897 it was chartered by the state as the Slater Industrial and State Normal School.

State Agricultural and Mechanical College located in Orangeburgh, South Carolina was founded in 1895. The purpose of the college is to develop specialized interest and to afford opportunities for intensive training within the applied sciences which involves an understanding of the fundamental principles of vocational and industrial aspects of life accomplished by experiences in the application of these principles.

Geographical Location. The geographical locations of the twenty-two Negro colleges and universities studied in this report are shown on Figure I. The key to Figure I is on page 23.

#### SUMMARY

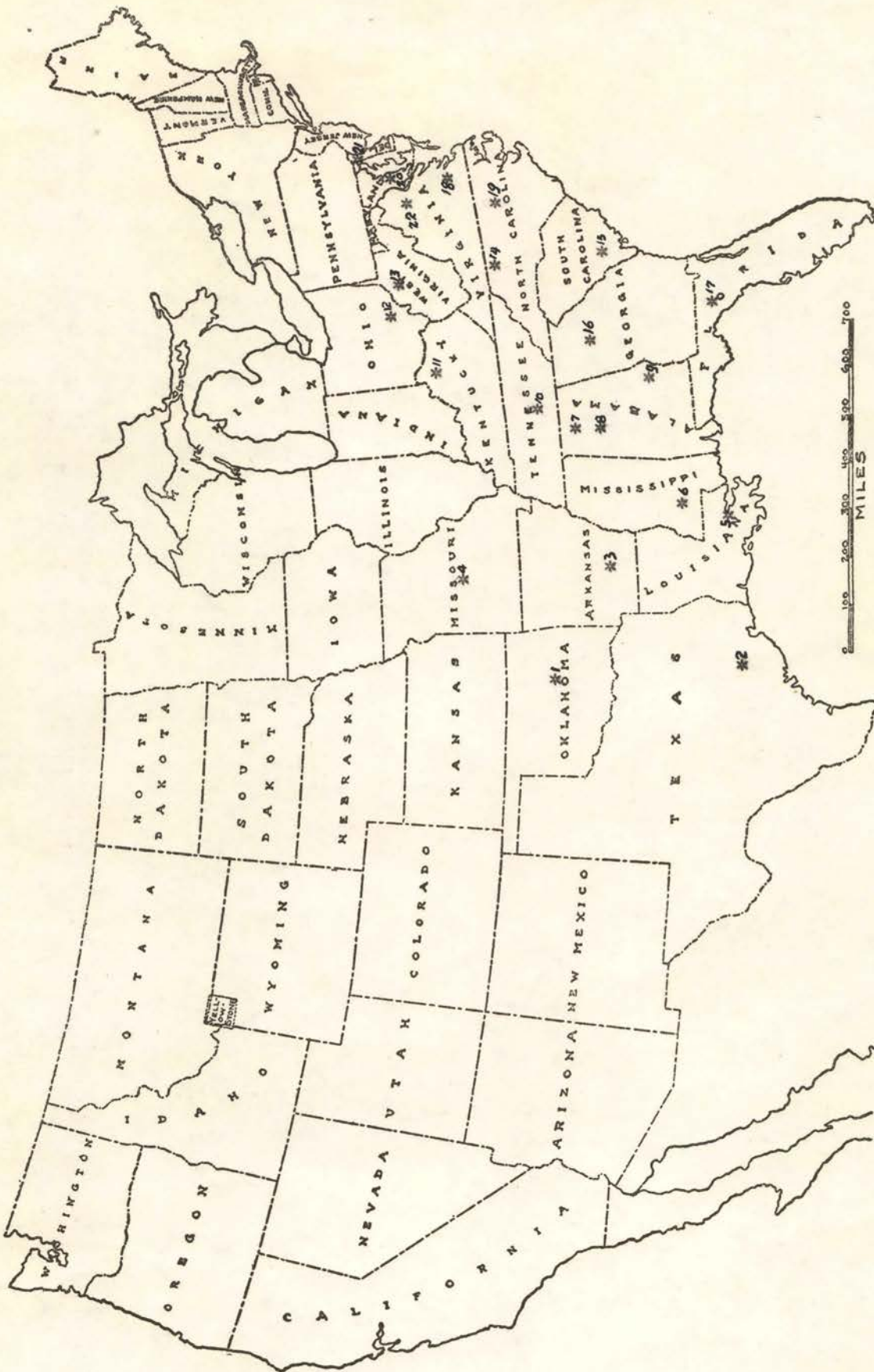
Early concepts of education in the south upheld the belief that industrial arts education was essential to the making of comfortable homes and that scientific training in industry would promote greater efficiency in living standards.

Governmental and philanthropic appropriations aided in the advancement of Negro education in the south. The

Morrill Land-Grant Act, with the Nelson amendments, the John F. Slater Fund; John D. Rockefeller Fund, Anna T. Jeans Fund; and the Rosenwald Foundation, all contributed to the development and growth of the institutions of learning for Negroes in the southern states.

Geographical Location

(See key on page 23)



Geographical Location

Number	Name of Institution	State
1.	Langston University	Langston, Oklahoma
2.	Texas State University	Houston, Texas
3.	Arkansas A. & M. College	Pine Bluff, Arkansas
4.	Lincoln University	Jefferson City, Missouri
5.	Southern University	New Orleans, Louisiana
6.	Alcorn A. & M. College	Alcorn, Mississippi
7.	Alabama A. & M. College	Normal, Alabama
8.	Oakwood College	Huntsville, Alabama
9.	Tuskegee, Institute	Tuskegee, Alabama
10.	Tennessee A. & I. College	Nashville, Tennessee
11.	Kentucky State	Louisville, Kentucky
12.	Wilberforce College	Wilberforce, Ohio
13.	West Virginia State College	Institute, West Virginia
14.	Winston-Salem College	Winston, North Carolina
15.	State A. & M. College	Orangeburgh South Carolina
16.	Fort Valley State College	Fort Valley, Georgia
17.	Florida A. & M. College	Tallahassee, Florida
18.	A. & T. College	Greenboro, North Carolina
19.	St. Paul's Polytechnic	Lawrenceville, Virginia
20.	Maryland State College	Princess Anne, Maryland
21.	Delaware State College	Dover, Delaware
22.	Hampton Institute	Hampton, Virginia

## CHAPTER III

## A PHILOSOPHY OF INDUSTRIAL ARTS

What is a philosophy? John F. Friese's definitions of the term philosophy are "The study and knowledge of principles," and "Practical wisdom that comes from knowledge of general laws or principles."<sup>17</sup>

Industrial arts education like all phases of education has been undergoing rapid changes during the past seventy years. Accordingly the philosophy of industrial arts education must change to meet the needs of present day education. To form a philosophy of industrial arts or any other subject, researches, experiments, and surveys have to be made. In this chapter will be found the early and modern philosophies of industrial arts. A definition of industrial arts will be found in the first chapter of this report.

A. Early Philosophy of Manual Training in America

Manual training is the term used for the type of shopwork introduced from Russia by the exhibit at the Centennial Exposition at Philadelphia in 1876. "Manual

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<sup>17</sup> John F. Friese, Course Making in Industrial Education, page 55.



training is the name applied to shopwork taught in high schools beginning in the late seventies and continuing until about the second decade of the present century."<sup>18</sup>

Manual Training. Manual training in America was first used to describe the work that was done in the school program similar to the industrial arts program of today. Calvin M. Woodward, founder of the manual training school, Washington University in St. Louis and John T. Runkle, founder of the Mechanic Arts School of Boston were instrumental in starting manual training courses in American schools. The philosophy of the beginning manual training curriculum was the process of analyzing the material or information to be studied.

"The establishment of teacher training work on a broad scale at Bradley Polytechnic Institute, Peoria, Illinois, in 1897 marked another important step in the development of manual training in the middle west."<sup>19</sup>

Manual training was not intended to develop high skills or to prepare for a trade. Rather, it was to be considered a part or phase of the general education. In the early teaching of manual training students were required to make

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<sup>18</sup> DeWitt Hunt, Definitions of Significant Industrial Education Terms, Oklahoma A. & M. College, Stillwater, Oklahoma.

<sup>19</sup> John F. Friese, Exploring the Manual Arts, page 15

models which had no functional value. This method of teaching was taken from the Russian system. The projects constructed by the students were usually not useful, that is, they did not have a place in the home or factory.<sup>20</sup>

Industrial Arts. Charles A. Richards, director of the manual training department of Teachers' College, Columbia University, was the first to use the term "Industrial Arts" in an editorial of the Manual Training Magazine in 1904. Richard suggested that the term, industrial arts, be substituted for that of manual training due to the changing view points of its contribution to education.<sup>21</sup>

Mays in a summary of the factors of industrial arts states:<sup>22</sup>

The subject of industrial arts, while it has certain very significant vocational values, is properly regarded as an important phase of the program of general education rather than a program of specific trade training.

There are many problems which should be made the basis for students' investigations in the industrial arts field. Such studies will help in the development of a scientific attitudes and methods of attacking problems, and will extend greatly the knowledge of industrial materials, processes, and products.

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<sup>20</sup> Charles A. Bennett, History of Manual and Industrial Education, 1870 to 1917, page 67.

<sup>21</sup> Ibid., page 453.

<sup>22</sup> Arthur Mays, The Problem of Industrial Education, page 209.

Many writers on the meaning of industrial arts have formulated definitions of this subject. Bonser offered this definition:<sup>23</sup>

Industrial arts is a study of the changes made by man in the forms of materials to increase their values, and of the problem of life related to these changes.

The State Advisory Committee for Industrial Arts in Oklahoma Schools proposes this definition: (From an unpublished report).

Industrial arts, as a school subject, may be defined as a study of the processes, tools, and machines by means of which the materials of nature are changed by man to make them more valuable and pleasing. It includes an understanding of the native qualities of raw materials and of the natural forces, together with a knowledge of the methods and practices of utilizing and changing these materials and forces. It is also concerned with the social and economic problems incident to these changes.

One would expect to find the best meanings of industrial arts in a recent bulletin from the Office of Education which is devoted entirely to this subject. Its contributions will be analyzed briefly.

Industrial arts is a phase of general education that concerns itself with the materials, processes and products of the manufacturer. The student's learning comes through experiences with tools and materials and through the study of resulting conditions of life. Industrial arts has general values that apply to all levels of education.

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23

F. G. Bonser and L. C. Mossman, Industrial Arts for Elementary Schools, page 5.

The Office of Education Bulletin includes these statements concerning the values of industrial arts in the junior high school:<sup>24</sup>

Industrial arts, as a part of general education, in three years (a) provides information regarding industry and workers; (b) reveals employment opportunities offered by industry; (c) satisfies the boys and girls desires to create useful things; (d) develops hobby and handyman interests and abilities; (e) contributes to the taste and judgment of the prospective consumer; (f) develops interest and ability in home repairs and maintenance; (g) affords practice in safety related to the school, home, and industry; (h) give opportunity for cooperative effort in groups; and (i) illustrates and vitalizes the academic subjects.

These interests prevail in the fifth and sixth grades of the elementary schools. One of the problems is to organize an industrial arts program in these elementary schools giving the girls opportunities comparable to those of the junior high school. The value of industrial arts as a contribution to general education of all youth is being recognized and there is an increasing tendency to provide industrial arts experiences for girls.

The Office of Education Bulletin includes these statements concerning the values of industrial arts in the senior high schools:

Industrial arts as a part of general education contributes to this end by: (a) developing

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<sup>24</sup> Commission of Education, Industrial Arts Its Interpretation in American Schools, page 41.

<sup>25</sup> Ibid., page 61.

an appreciation of design and quality in manufactured products; (b) providing practice in the use of materials and tools for recreation and home utilization; (c) sampling a variety of industries, through advance as a beginner in the skilled trades or into college courses in engineering and architecture.

Industrial arts, a function of complete living, should not be restricted to the programs of the elementary, junior, and senior high schools. Due to needs and interests of college students it is suggested that offerings be arranged in higher institutions. It has been acknowledged that industrial arts is an essential part of general education and should be offered in college as well as in the junior and senior high schools.

Industrial Arts in General Education. What is education? Spencer<sup>26</sup> defines it as "Preparation for complete living." The primary purpose of the American public schools is to provide for an education. Living in a democracy this education must be life itself. Social changes affects the life of every individual so profoundly that the schools must provide a general education which gives a cultural development. Industrial arts has general education values that apply to all levels. Though largely manipulative, industrial arts provides a content which is informational, technical and social in character. It

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26

Herbert Spencer, Education: Intellectual, Moral and Physical, page 9.

gives opportunity for observation, discussion, reading, experimentation, and creation of many things, therefore, satisfying many of the impulses inherent in the individual.

#### B. Modern-Day Philosophy of Industrial Arts

Philosophy is not static, rather it is continually changing to meet the needs of the modern world. The present-day philosophy was derived from a collection of experiences and ideas that have been tried, revised and tried again.

The influence of industry brought about a period of development, which was referred to by Richards, Russell, and Bonser as Industrial Arts (1907-10). These great educators believed that the old concepts of industrial arts, that are good, should be retained but that certain new concepts should dominate.<sup>27</sup>

Industrial arts should cover a greater variety of courses.

Democratic Society. To meet the needs for a democratic society, industrial arts can do much to prepare the student as an individual for future participation in the complex society. A personnel organization in the shop in which students are given real responsibilities develops leadership and followership abilities and will do much to develop and equip the student for future life. The instructor should endeavor to establish a series of real-

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27

United States Office of Education, Industrial Arts: Its Interpretation in American Schools, page 27.

life situations, giving the student opportunities to help plan and organize the shop procedures.

Industrial Society. The ever-changing complexity of industry will test the teacher to the fullest. The divisions of labor, the ever increasing amount and variety of manufactured goods, and the development of new machine processes are extremely important in the field of industrial arts. Labor has time for recreation due to the shorter working hours, consequently there is need for many home workshops. The student of industrial arts is working and thinking in terms of concrete materials. The students learn the processes of construction by first planning for the object to be built. This is followed by systematic construction of the project.

Objectives of Industrial Arts. The industrial arts curriculum should be analyzed and definite objectives or aims established. These objectives or aims should be the guide or measuring device in the industrial arts program. The following quoted statement of objectives may be realized from proper experiences in industrial arts. These objectives are for the junior high school and senior high school industrial arts program.

Junior High School Objectives of Industrial Arts<sup>28</sup>

- A. Exploratory and finding values of shop and drawing courses for the detection, discovery, or tryout of interests and aptitudes.
- B. Education guidance as a result of student observation and analysis of numerous vocations by which he finds out what to anticipate in further education and training.
- C. Vocational guidance and information gained through the study of various industries by visits, readings, and reports.
- D. Consumer's or utilizers' knowledges and appreciation and development of all-round intelligence for things industrial, such as making more intelligent choosers and users of the products of industry.
- E. Household mechanics or the development of handy-man abilities about the home.
- F. Desirable personal and social habits with respect to practical situations, such as neatness, judgment, cooperation, observation, initiative, and responsibility when the social setting of a shop or laboratory offers the opportunity for pupil participation in purposing, planning, doing, and evaluating these practical activities.
- G. Pre-vocational purposes where the training undertaken is intended to lead up to apprenticeship or further training in a specific vocation.
- H. Avocational purposes, or the pursuit of hobbies that relate to shop work and drawing, and making or doing things for oneself or others.
- I. A degree of skill with tools and processes commensurate with the ability of the pupil and incidental to the completion of a project which seems to have educational value.
- J. The seven cardinal principles which seem to summarize the purposes of principles of shop work and drawing:  
(1) worthy use of leisure; (2) worthy home membership;

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<sup>28</sup> William E. Warner, Policies in Industrial Arts Education, page 36.



(3) command of fundamental processes; (4) citizenship; (5) health; (6) vocation and (7) ethical character.

- K. Correlation with studies intrinsically abstract by providing experiences that will clarify other studies, activities, or interests in or out of school.
- L. Certain specific faculties, such as attention, reasoning, honesty, memory, concentration, and accuracy, developed by making things.
- M. Coordination of "hand and eye" by making things. Formal education.
- N. Vocational purposes, definitely preparing for a future industrial occupation.

#### High School Objectives of Industrial Arts<sup>29</sup>

- A. To explore industry and American industrial civilization in terms of its organization, raw materials, processes and operations, products, and occupations.
- B. To develop recreational and avocational activities in the area of constructive work.
- C. To increase an appreciation for good craftsmanship and design, both in the product of modern industry and in artifacts from the material cultures of the past.
- D. To increase consumer knowledge to a point where students can select, buy, use, and maintain the products of industry intelligently.
- E. To provide information about, and-in so far as possible experiences in, the basic processes of many industries, in order that students may be more competent to choose a future vocation.
- F. To encourage creative expression in terms of individual materials.
- G. To develop desirable social relationship such as co-operation, tolerance, leadership, followership, and tact.

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<sup>29</sup> Gordon O. Wilber, Industrial Arts in General Education, page 43.

H. To develop a certain amount of skill in a number of basic industrial processes.

If the teacher of industrial arts will keep these objectives in mind when establishing a course of study, or revising the old course, and adhere to these objectives then, the demand of society, both democratic and industrial will be attained.

Industrial Arts Teacher Education. The development of new philosophies of manual training, manual arts, and industrial arts in the public schools of America has brought about the term and concept of industrial arts teacher education. The concept of industrial arts teacher education has been a changing one. This change has been a gradual evolution as the needs of the teacher in the public schools have changed. Such terms as manual training and manual arts are still used by many public school administrators. The term "industrial arts teacher education" is used more when referring to industrial arts on the college level where students are preparing to teach. The public school administrators and the public as a whole should be educated to the concept of industrial arts.

#### SUMMARY

The objectives of industrial arts have been discussed on the junior and senior high school level. On the junior high school level, industrial arts is more exploratory

than on the secondary level. Industrial arts on the high school level expresses educational guidance, consumer knowledge, development of handy-man abilities, and the seven cardinal principles of education.

The development of new philosophies of manual training, manual arts, and industrial arts have brought about the term and concepts of industrial arts teacher education. The term industrial arts teacher education is used more frequently to identify a program on the college level, one in which students are preparing to teach industrial arts.

## CHAPTER IV

## A CATALOG STUDY OF INDUSTRIAL ARTS TEACHER EDUCATION

This chapter includes the study of the industrial arts curriculum in twenty-two Negro colleges and universities. The tables will present an analysis of the findings with limited statements to describe each table. The total number of professional, academic, and technical courses will be discussed separately. There is no comparison of these institutions with each other or any other institution. The entire industrial arts curriculums of the twenty-two institutions are analyzed and presented.

Technical Courses

The industrial arts technical courses discussed in the findings are those courses taught in the industrial arts shops, shop and laboratory, shop and theory subjects. These courses were designed to teach the students the technical information as well as the manipulative ability in shop courses.

Technical Courses. An extensive number of technical courses are offered in the institutions studied. (See Table I). The subjects listed in sequences of I, II,

TABLE I

TECHNICAL COURSES OFFERED IN TWENTY-TWO NEGRO INSTITUTIONS  
WITH NUMBER OF INSTRUCTIONS OFFERING EACH COURSE

Name of Course	Frequency Offered
Automobile - Construction and Design . . . . .	9
Automobile - Fuel and Lubrication . . . . .	12
Automobile - Trade Practice . . . . .	12
Automobile - Front End Design . . . . .	5
Automobile - Advanced Trade Theory . . . . .	10
Automobile - Mathematical Computation . . . . .	2
Automobile - Engine Type . . . . .	2
Automobile - Cooling System . . . . .	3
Automobile - Electric System . . . . .	9
Automobile - Body and Fender Repair . . . . .	7
Automobile - Generator and Starter . . . . .	6
Automobile - Service and Repair . . . . .	12
Automobile - Refinishing . . . . .	1
Automobile - Internal Combustion Engine . . . . .	4
Automobile - Shop Management I . . . . .	1
Automobile - Shop Management II . . . . .	1
Barbering - Science I . . . . .	3
Barbering - Science II . . . . .	2
Barbering - Practice . . . . .	3
Barbering - Advanced Practice . . . . .	3
Barbering - Introduction to Barbering . . . . .	1
Boiler Practice . . . . .	1
Boiler Firing . . . . .	1
Boiler Practice II . . . . .	1
Boiler Practice III . . . . .	1
Bricklaying . . . . .	7
Bricklaying II . . . . .	7
Bricklaying III Tile . . . . .	4
Cabinet Making I . . . . .	17
Cabinet Making II . . . . .	16
Cabinet Making III . . . . .	7
Cabinet Making - Historical . . . . .	1
Cabinet Making - Equipment . . . . .	2
Carpentry - Basic Trade Practice I . . . . .	15
Carpentry - Advanced Trade Practice . . . . .	9
Carpentry - Shop Computation . . . . .	1
Carpentry - Trade Practice III . . . . .	5

TABLE I (continued)

TECHNICAL COURSES OFFERED IN TWENTY-TWO NEGRO INSTITUTIONS  
WITH NUMBER OF INSTRUCTIONS OFFERING EACH COURSE

Name of Course	Frequency Offered
Descriptive Geometry I . . . . .	18
Descriptive Geometry II . . . . .	3
Design - Architectural . . . . .	3
Design - Industrial Arts . . . . .	10
Design - Machine . . . . .	4
Drafting - General . . . . .	1
Drafting - Advanced . . . . .	2
Drawing - Architectural I . . . . .	16
Drawing - Architectural II . . . . .	13
Drawing - Architectural III . . . . .	4
Drawing - Architectural IV . . . . .	1
Drawing - Architectural V . . . . .	1
Drawing - Architectural VI . . . . .	1
Drawing - Machine I . . . . .	12
Drawing - Machine II . . . . .	17
Drawing - Machine III . . . . .	3
Drawing - Mechanical I . . . . .	18
Drawing - Mechanical II . . . . .	18
Drawing - Working . . . . .	1
Drawing - Perspective . . . . .	1
Drawing - Freehand . . . . .	4
Drawing - Technical I . . . . .	2
Drawing - Technical II . . . . .	1
Drawing - Technical Fundamentals . . . . .	1
Drawing - Engineering . . . . .	2
Drawing - Surveying . . . . .	1
Electricity - Introduction . . . . .	13
Electricity - Practice and Theory . . . . .	13
Electricity - House and Power Wiring . . . . .	8
Electricity - Light and Power . . . . .	4
Electricity - Illumination . . . . .	2
Electricity - D. C. Machinery . . . . .	10
Electricity - A. C. Machinery . . . . .	10
Electricity - Motor Repair . . . . .	7
Electricity - Armature Wiring . . . . .	3
Electricity - Shop Computation . . . . .	1
Electricity - Radio Communication . . . . .	6

TABLE I (continued)

TECHNICAL COURSES OFFERED IN TWENTY-TWO NEGRO INSTITUTIONS  
WITH NUMBER OF INSTITUTIONS OFFERING EACH COURSE

Name of Course	Frequency Offered
Electricity - Circuit and equipment . . . . .	12
Electricity - Refrigeration . . . . .	1
Electricity - Radio and Electronics . . . . .	2
Electricity - Radio and Electronics . . . . .	2
Foundry - Practice and Theory . . . . .	2
Foundry - Practice . . . . .	1
General Shop - Drawing . . . . .	3
General Shop - Woodworking . . . . .	4
General Shop - Metalwork . . . . .	4
General Shop - Electricity . . . . .	4
General Shop - Leather Craft . . . . .	1
General Shop - Home Mechanics . . . . .	2
Machine Shop - Elementary I . . . . .	5
Machine Shop - Elementary II . . . . .	4
Machine Shop - Advanced . . . . .	3
Machine Shop - General Metal . . . . .	6
Machine Shop - Essentials of Bench Work . . . . .	3
Machine Shop - Tool Operation . . . . .	5
Machine Shop - Metallurgy . . . . .	4
Machine Shop - Trade Practice . . . . .	3
Metal Work - Elementary Sheet . . . . .	13
Metal Work - Pattern Making . . . . .	9
Metal Work - Roofing . . . . .	7
Metal Work - Advanced Sheet Metal Roofing . . . . .	1
Metal Work - Soldering and Brazing . . . . .	6
Metal Work - . . . . .	1
Metal Work - General I . . . . .	15
Metal Work - General II . . . . .	10
Mining - I . . . . .	2
Mining - II . . . . .	2
Photography - Theory and Practice . . . . .	4
Photography - Enlargement . . . . .	4
Printing - Typography I . . . . .	4
Printing - Typography II . . . . .	3
Printing - Bindery Operation . . . . .	2
Printing - Trade Practice . . . . .	5
Printing - Machine Composition . . . . .	5

TABLE I (continued)

TECHNICAL COURSES OFFERED IN TWENTY-TWO NEGRO INSTITUTIONS  
WITH NUMBER OF INSTITUTIONS OFFERING EACH COURSE

Name of Course	Frequency Offered
Printing - Linotype Operating . . . . .	4
Printing - Press Work I . . . . .	5
Printing - Press Work II . . . . .	2
Printing - Press Work III . . . . .	1
Printing - Cost Accounting . . . . .	2
Printing - Advanced . . . . .	3
Printing - Typography . . . . .	4
Printing - Platen Press . . . . .	5
Printing - Cylinder Press . . . . .	3
Printing - Cutting, Folding and Bending . . . . .	1
Printing - Make-up and Imposition . . . . .	3
Printing - Engraving . . . . .	2
Printing - Linotype . . . . .	4
Printing - Linotype Key Board Operation . . . . .	3
Print Shop Management . . . . .	6
Print Shop Mechanics . . . . .	1
Plumbing - Repair . . . . .	3
Plumbing - Roughing-in . . . . .	4
Plumbing - Installation of Fixtures . . . . .	5
Plumbing - Trade Practice . . . . .	3
Plumbing - Advanced Heating Practice . . . . .	3
Plumbing - Advanced Heating Practice II . . . . .	2
Radio - Communication . . . . .	5
Radio and Television . . . . .	1
Tailoring - Introduction . . . . .	4
Tailoring - Practice and Theory . . . . .	4
Tailoring and Dry Cleaning . . . . .	1
Tailoring - Trade Practice I . . . . .	3
Tailoring - Trade Practice II . . . . .	2
Tailoring - Trade Practice III . . . . .	2
Tailoring - Advanced Practice . . . . .	3
Tailoring - Material . . . . .	1
Tailoring - Shop Computation . . . . .	1
Tailoring - Pattern Drafting . . . . .	3
Tailoring - Management . . . . .	1
Tailoring - Style and Design . . . . .	2



TABLE I (continued)

TECHNICAL COURSES OFFERED IN TWENTY-TWO NEGRO INSTITUTIONS  
WITH NUMBER OF INSTITUTIONS OFFERING EACH COURSE

Name of Course	Frequency Offered
Tailoring - Fundamentals . . . . .	1
Tailoring - Cleaning and Pressing . . . . .	1
Tailoring - Practice and Commercial Techniques . . . . .	1
Toy Making . . . . .	3
Upholstering - Tools and materials names . .	3
Upholstering - Weaving . . . . .	1
Upholstering - Decorative . . . . .	2
Upholstering - Decorative Upholstering . . .	1
Upholstering - Advanced . . . . .	1
Upholstering - Slip Cover Making . . . . .	3
Welding - Essentials . . . . .	6
Welding - II . . . . .	4
Welding - III . . . . .	2
Welding - IV . . . . .	2
Welding - V . . . . .	2
Woodworking - Elementary I . . . . .	22
Woodworking - Elementary II . . . . .	15
Wood Finishing . . . . .	6
Woodworking - Hand . . . . .	16
Woodworking - Hand II . . . . .	9
Woodworking - Productive Basis . . . . .	12
Woodworking - Productive Basis II . . . . .	9

and III, are the manner in which these courses are offered, and in case of the last course number the preceding courses are prerequisite in most cases. The number of technical courses offered in the twenty-two Negro colleges and universities is 177. (See Table I).

Technical Courses Offered. The number of technical courses offered the greatest number of times are presented in Table II. The majority of the institutions offer courses that are shown in Table II. Example, introduction to automobile mechanics is offered in nine institutions whereas automobile refinishing was offered in only two institutions.

In one of the institutions, Fort Valley State College, Fort Valley, Georgia, industrial arts was in the curriculum of art education. The following industrial arts courses were found: Freehand drawing, mechanical drawing, general woodwork, advanced woodwork, ceramics, art metal, leather craft, and household mechanics. There were no academic or professional courses listed. The professional and academic courses pertained to art education.

Industrial arts is in the art department at the Winston-Salem Teachers College, North Carolina for Negroes. The manual activities, such as, metal work, woodworking, construction of objects for household use, and applying the principles of drawing and design, are taught. The major technical courses are those courses in which the student may major or specialize. (See Table III). The total number of hours credits for each major course curriculum are shown. The objectives of these courses are to meet the needs of the Industrial Society.

TABLE II

NUMBER OF TECHNICAL COURSES OFFERED THE GREATEST  
NUMBER OF TIMES

Course	Number of Institutions Offering
Automobile - Construction and Design . . . . .	9
Automobile - Fuel and Lubrication . . . . .	12
Automobile - Trade Practice . . . . .	12
Automobile - Advanced Theory and Practice . . . . .	10
Automobile - Electric System . . . . .	10
Automobile - Service and Repair . . . . .	11
Bricklaying - I . . . . .	6
Bricklaying - II . . . . .	6
Cabinet Making I . . . . .	18
Cabinet Making - II . . . . .	16
Cabinet Making - III . . . . .	7
Carpentry - Basic Trade Practice . . . . .	15
Carpentry - Advanced Trade Practice . . . . .	8
Descriptive Geometry I . . . . .	18
Design - Industrial Arts . . . . .	10
Drawing - Architectural I . . . . .	16
Drawing - Architectural II . . . . .	13
Drawing - Machine . . . . .	12
Drawing - Mechanical I . . . . .	18
Drawing - Mechanical II . . . . .	18
Electricity - Introduction or Basic . . . . .	13
Electricity - Practice and Theory . . . . .	13
Electricity - House and Power Wiring . . . . .	8
Electricity - D. C. Machinery . . . . .	9
Electricity - A. C. Machinery . . . . .	9
Electricity - Circuit and Equipment . . . . .	12
Metal Work Elementary . . . . .	13
Metal Work - Pattern Making . . . . .	9
Metal Work - Soldering and Brazing . . . . .	6
Metal Work - General I . . . . .	15
Metal Work - General II . . . . .	10
Woodworking - Elementary I . . . . .	21
Woodworking - Elementary II . . . . .	19
Wood - Finishing . . . . .	6
Woodworking - Productive Basis . . . . .	12
Woodworking - Productive Basis . . . . .	7



In one institution, West Virginia State College, mining is offered. The chief occupation of that state is mining. Therefore, a student may take a course in mining theory and practice.

Hours of Credits, Technical. The average number of credit hours for the bachelor of science degree were thirty-six. General woodworking I was offered by fifteen institutions. Nineteen institutions offered courses in elementary woodworking II. Mechanical drawing I and II, descriptive geometry, and cabinet making I were offered in seventeen institutions. There were fifteen institutions offering architectural drawing and cabinet making I. General woodwork I and carpentry were offered in fourteen institutions. Twelve institutions offered woodworking, productive basic I, elementary metal work, electricity I and II, and automobile trade practice.

#### Professional Courses

The industrial arts professional courses are those courses taught in theory, such as, history of industrial arts, organization and management, and job & trade analysis. The industrial arts professional courses are for the purpose of furnishing information to the cultural aspect of industrial arts teacher education.

Professional Courses. Table IV presents the number of professional courses offered in the institutions co-operating in this study. The courses were fairly uniform in course credits, averaging between two and three credit hours.

TABLE IV

A LIST OF THE PROFESSIONAL COURSES  
AND NUMBER OF INSTITUTIONS OFFERING  
THESE COURSES

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Survey of Industries . . . . .	2
History of Industrial Education . . . . .	6
Job & Trade Analysis . . . . .	11
Guidance . . . . .	8
Methods of Teaching Industrial Arts . . . . .	11
Occupational Orientation . . . . .	18
Seminar . . . . .	2
Foremanship Fundamentals . . . . .	3
Industrial Safety . . . . .	1
Curriculum Construction . . . . .	1
Problems in Industrial Arts Education . . . . .	2
Measurements and Evaluation . . . . .	7

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In the industrial arts curriculum, there is a tendency for the professional courses to be scheduled for the second,

third, or fourth year. The greatest number of professional courses are history of industrial education, job & trade analysis, vocational guidance, methods of teaching industrial arts, occupational orientation, organization and management, and measurements and evaluation.

Hours Credit, Professional. The average number of credit hours for the bachelor of science degree were sixteen. Slightly greater emphases were placed on methods of teaching industrial arts, job & trade analysis and occupational orientation. Occupational orientation was scheduled for the first year. Methods of teaching industrial arts was scheduled for the junior or senior year.

General Education Courses. The general education requirements for the institutions were about the same. Two-thirds of the institutions required a general program for the first year or during the student's freshman year. The basic subjects were algebra, English I and II, history I and II, two courses of natural science, and trigonometry. (See Table V).

It seemed from the study that the basic requirements were for students who are undecided as to their choice of a major. The students are given help during this period of time by their advisors or counselors,





in determining their educational objectives. The general educational curriculum was for all students regardless of their prospective major. The general educational curriculum of the institutions is presented in Table V.

There are three institutions, Oakwood, Winston-Salem Teachers College, and Fort Valley State College in which general education for industrial arts will not be presented in Table V. The catalogs of these institutions did not present a program for industrial arts. However, some phases of industrial arts were taught.

It is to be noticed in Table V that the entire general education curriculum for industrial arts is presented with the number of credit hours in each course or subject.

Table VI gives the number of subjects and the number of schools requiring these subjects. It will be seen in Table V that Texas State College, (for Negroes) was the only college requiring Audio-Visual Aid. Arkansas Agriculture and Mechanical College and Southern University, Louisiana, required three hours credits each of Negro history. Directed teaching was required in eleven institutions.

Hours Credit, Academic. The number of credit hours required to receive the bachelors of science degree for the curriculum in industrial arts academic courses are fifty-two.

TABLE VI

A LIST OF THE GENERAL EDUCATION SUBJECTS  
THAT ARE REQUIRED WITH THE NUMBER OF  
SCHOOLS OFFERING

Subjects	Schools
English I . . . . .	20
English II . . . . .	19
English III . . . . .	12
English (Speech) . . . . .	15
Algebra . . . . .	18
Trigonometry . . . . .	15
History I (1492-1865) . . . . .	11
History II (1865-Present) . . . . .	6
History, Negro . . . . .	1
Biology . . . . .	3
Government . . . . .	3
Physics I . . . . .	13
Physics II . . . . .	11
Methods of Teaching . . . . .	2
Psychology, General . . . . .	6
Psychology, Educational . . . . .	12
Psychology, Adolescent . . . . .	9
Accounting, Elementary . . . . .	1
Directed Teaching (Observation) . . . . .	11
Directed Teaching (Practice) . . . . .	12
Economics, Principles . . . . .	11
Labor Problems . . . . .	15
Physical Education I . . . . .	10
Physical Education II . . . . .	10
Physical Education III . . . . .	7
Physical Education IV . . . . .	6
Chemistry I . . . . .	10
Chemistry II . . . . .	9
Introduction to Literature . . . . .	4
Business Law . . . . .	4
Botany . . . . .	1
Principles of Education . . . . .	8
Military Science I . . . . .	5
Military Science II . . . . .	4
Military Science III . . . . .	2
Military Science IV . . . . .	2

TABLE VI (continued)

A LIST OF THE GENERAL EDUCATION SUBJECTS  
THAT ARE REQUIRED WITH THE NUMBER OF  
SCHOOLS OFFERING

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Subjects	Schools
Audio Visual Aid . . . . .	1
Sociology . . . . .	5
Analytic Geometry . . . . .	1
Educational Statistics . . . . .	1
Introduction to Education . . . . .	4

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TABLE VII

STATE, INSTITUTION, TEACHING FORCE  
AND QUALIFICATION

State	Name of Institution	Certificate	Diploma	Bachelor of Science	Master of Science	Doctor of Philosophy	Number of Teachers	State Control	Private Control
Alabama	Tuskegee Institute	7	4	22	4	0	37		x
	Oakwood College	0	0	1	0	0	1		x
	A. & M. College	2	1	4	2	0	9	x	
Arkansas	A. & M. College	0	0	1	3	0	4	x	
Delaware	Delaware State College	0	0	1	3	0	4	x	
Georgia	Ft. Valley State College	0	0	1	0	0	1	x	
Florida	A. & M. College	7	5	1	1	0	14	x	
Kentucky	Kentucky State College	0	0	0	2	0	2	x	
Louisiana	Southern University	1	0	6	0	0	7	x	
Missouri	Lincoln University	0	0	5	2	0	7	x	
Mississippi	Alcorn A. & M. College	0	5	8	0	0	13	x	
Maryland	Maryland State College	1	0	4	1	0	6	x	
	A. & T. College	14	0	8	5	0	27	x	
N. Carolina	Winston-Salem Teacher College	0	0	0	1	0	1		x
Ohio	Wilberforce	0	0	6	2	1	9	x	
Oklahoma	Langston University	0	1	3	2	0	6	x	
S. Carolina	A. & M. College	6	0	2	1	0	9	x	
Tennessee	A. & M. College	1	0	6	1	0	8	x	
Texas	Texas State University	9	0	6	1	0	16	x	
	Hampton Institute	0	2	3	1	0	6		x
	St. Paul's Polytechnic Institute	2	0	8	4	0	14		x
W. Virginia	W. Virginia State College	0	0	9	2	1	12	x	

Teaching Force and Qualification. The present study based on the catalogs from twenty-two Negro colleges and universities does not give a true analysis of the teacher qualification because of the dates of the catalogs. The catalogs were for the years 1949 and 1950.

In making the analysis of teacher qualification from the catalogs, it was found that a number of teachers were on leave for further study, some had worked on advanced degrees.

Table VII presents a breakdown of the teacher qualification in the following order: The state in which the institution is located, the name of the institution, certificate, diploma, bachelors of science degrees, masters of science degrees, doctors of philosophy degrees, number of teachers in each institution, and the agency of control.

#### SUMMARY

The curriculums were similar in nineteen of the institutions studied. In three of the institutions, the industrial arts curriculums were found in the art department. A general education program was revised in the institutions for the freshman year.

The geographical locations of the institutions studied are in the southern states.

There are 208 industrial arts teachers in the twenty-two colleges and universities studied. There were fifty

industrial arts teachers with teaching certificates, eighteen industrial arts teachers with diplomas, thirty-eight industrial arts teachers with masters of science degrees, one hundred with bachelors of science degrees, and two with doctors of philosophy degrees.

## CHAPTER V

A PROPOSED CURRICULUM FOR TRAINING  
INDUSTRIAL ARTS TEACHING

The following proposed curriculum is divided into three instructional phases, academic, professional, and technical courses. The proposed curriculum will enable the student to gain vast experiences in industrial arts with a refined cultural background. This suggested program for the preparation of industrial arts teachers is guided by the aims of the institutions and the objectives of industrial arts. John F. Friese<sup>30</sup> states that "the first step in the preparation of a course of study is the formulation of aims or objectives toward the achievement of which all subject matter, methods, and pupil activities are directed."

Aims of the Institution. The establishment of proper objectives or aims is of great importance to the success of this proposed curriculum. Without a goal or several goals to work toward, one cannot hope to accomplish definite achievements in the establishment of a valid curriculum. The aims of the institutions are for the purposes of (1) developing to the highest possible degree

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<sup>30</sup> John F. Friese, Course Making in Industrial Education, page 78.



the whole personality of the student, (2) preparing the student to live effectively in a democratic society, and (3) provide specialized education in several fields leading to occupational success in professions, etc.

Industrial Arts Department Objectives. The proposed curriculum for industrial arts teacher education requires specific objectives which should be related to those of the school. The aims of the department should be to (1) prepare industrial arts teachers for the junior and senior high schools, (2) provide professional, technical, and general education for the training of prospective industrial arts teachers.

The industrial arts objectives are stated in Chapter III of this report. These objectives are for the two grade levels, junior and senior high schools.

A Suggested Industrial Arts Curriculum for the Preparation of Industrial Arts Teachers

Total Requirements. The four-year course curriculum in industrial arts teacher education will have a sufficient amount of hours credit in general education and professional courses in addition to their major field to teach a combination of shop courses. This curriculum is so designed that a student may specialize in one phase of industrial arts with the sufficient amount of hours credit to receive

the bachelor of science degree or the student may choose several courses to be prepared to teach in many shops and theory courses.

The number of semester credit hours required to graduate with a bachelor's degree in the proposed curriculum, for industrial arts teachers are as follows:

English and Speech		12
Natural Science		16
Mathematics		6
Education		9
Educational Psychology	3	
Adolescent Psychology	3	
Test & Measurements	3	
Political Science		12
Industrial arts Professional Courses		11
Industrial arts Technical Courses		40
Secondary Teaching		10
Elementary Accounting	3	
Principles of Economics	3	
Health Education	2	
Guidance	2	
Elective, General		<u>14</u>
Total		130

Industrial Arts Curriculum. From the analysis of the catalog study, the writer has proposed this industrial arts curriculum. The proposed plan offers a four-year curriculum in the professional, academic and technical courses. This industrial arts curriculum is offered for the benefit of all students. In addition to serving this need, it offers training to the student who wishes to prepare to teach several industrial arts subjects or specialize in one phase of industrial arts.

(The technical courses are indicated by an asterisk, professional courses are indicated by two asterisks.)

<u>Freshman Year</u>	<u>Semester</u>	I	II
English I		3	
English II			3
Algebra		3	
Trigonometry			3
Biology		4	
Drawing, Mechanical		2*	
Occupational Orientation		1*	
Metal Work, General			2*
Chemistry			4
Drawing, Mechanical II			2*
History I		3	
Elective, General			2
		<hr/>	<hr/>
		16	16

<u>Sophomore Year</u>	<u>Semester</u>	I	II
English Composition		3	
Public Speaking			3
College Physics		4	
College Physics			4
History II		3	
Industrial Arts Design		2*	
History III			3
Problems in Industrial Arts		2**	
Welding, Gas and Arc		2*	
Descriptive Geometry			2*
Health Education			2*
History IV			3
		<hr/>	<hr/>
		16	17

<u>Junior Year</u>	<u>Semester</u>	I	II
Elementary Accounting		3	
Care of Shop Equipment			2*
Educational Psychology		3	
Methods of Teaching Industrial Arts			2**
Adolescent Psychology			3
Principles of Economics		3	
Architectural Drawing			2*
Cabinet Making		2*	
Wood Finishing			2*
Wood Turning and Pattern Making		2*	
General Shop			2*
Shop Electives (Major Shop)		4*	
Electives, General			4
		<hr/>	<hr/>
		17	17

<u>Senior Year</u>	<u>Semester</u>	I	II
Test and Measurements		3	
Directed Teaching (Observation		1**	
Directed Teaching (Practice Teaching in Industrial Arts)			4**
Machine Shop Practice			2*
Machine Drawing		2*	
Organization and Administration of Industrial Arts		2**	
Guidance		2	
Printing			2*
Shop Electives (Major Shop)		4*	3*
Electives, General		<u>3</u>	<u>3</u>
		17	14

Description of General Education Courses. Twelve semester hours of English are required. English I is a course in grammar reviews, recitations, themes, general expressions, and assigned readings. English II is a course in advanced grammar, verb usage and sentence analysis. English III is a course in composition and writing. English IV, public speaking, is a study of the principles of effective delivery, practice in preparing, presenting and criticizing speeches.

Six hours of mathematics are required. Three hours in algebra and three hours in trigonometry. Six hours of mathematics will give the student a sufficient amount of training to meet the needs of various shop activities requiring mathematics.

Twelve hours are required in social science. History I is a study of the explorations and discoveries leading to the colonization of the United States. History II is a continuation of History I. History III will present to the student the growth of industry, commerce, transportation, and population. History IV, government, is a study of the functions of the states in the United States with emphasis on organization and administration.

Sixteen hours of natural science are required, two courses in biology and two courses in physics. Biology is designed to give the student a knowledge of cell structure of the plant and animal kingdom. Physics I and II will present to the student an understanding of the principles of force, magnetism, sound and light.

Nine semester hours are required in education. Educational psychology is a study of the mental, social and emotional development of children from infancy through adolescence. Emphasis is placed on the relationship between growth and development.

Adolescent Psychology is the study of conduct, personal and social adjustment of children during pre-adolescent and adolescent years.

Education, Test and Measurements, is designed to give the student an understanding of the techniques involved in the improvement of teacher-made tests and examination.

Three hours are required in accounting. Accounting prepares the student with the necessary background to understand and interpret financial statements and book-keeping.

Five hours of directed teaching are required. Directed teaching (observation) is provided to give the student knowledge of the teaching faculties and equipment in shop and classrooms and to study the mental, physical, emotional and social characteristics of the pupil and to study the results of various methods of teaching under different conditions.

Practice teaching is required of all industrial arts students. Students will do actual teaching in one of several schools. Each student is required to make his own program of work, to organize and arrange his teaching material, and to take full charge of the class.

Industrial Arts Professional Courses. Ten semester hours of professional courses are required.

Methods of teaching industrial arts is designed to help students of industrial subjects in the selection, organization, and presentation of teaching material in the field of industrial education.

Organization and administration of industrial arts is designed to deal with school shop planning, installment

of machinery and equipment, arrangement, maintenance, and records.

Vocational guidance gives a student a general knowledge of the economic activities and qualities demanded in the various technical courses. It touches upon the modern educational and industrial systems, problems of youth, and ways of meeting these problems. (May be required of all students.)

Problems in industrial arts gives the student an insight on teaching problems, training aids and shop management, selection of text, subject matter, and methods of teaching.

Industrial Arts Technical Courses. Forty semester hours credits are required of all industrial arts majors.

The courses are:

- Electricity
- Occupation Orientation
- General Woodwork
- Mechanical Drawing I
- General Metal Work
- Mechanical Drawing II
- Industrial Arts Design
- Welding, Gas and Arc
- Cabinet Making
- Wood Finishing
- Wood Turning and Pattern Making
- General Shop
- Machine Shop Practice
- Printing
- Care of Shop Equipment
- Architectural Drawing

General Woodwork is designed to give the student the principles of joint construction. Special emphasis is placed on mortise and tenon joints.

Electricity gives the student theory and practice in wiring simple fixtures, such as, door bells, and transformers.

General metal is a course designed to motivate the student in the arts of forming and making metal patterns.

Mechanical Drawing I gives the use of drawing instruments and a study of orthographical projects.

Mechanical Drawing II involves the making and reading of drawings, including the development and application of curves.

Occupational Orientation is designed for freshmen. The purpose of this course is to give the student an opportunity to decide upon a shop major. One hour is given for occupational orientation.

General shop gives the student the fundamental techniques of operation and theory of several shops in industrial arts. Two hours credits are given for general shop.

Sheet Metal Work covers a phase of metal work related to soldering, layout, forming of various metals, riveting, and two hours of credit are given for sheet metal.

Machine shop training is made available in the various sub-divisions of machine shop practice. Distinct emphasis on bench work and the operation and care of most standard power machine tools used in local industries and private machine shops.



Welding is designed to prepare a student to do repair shop welding using either oxy-acetylene or electric arc equipment. The objectives of the welding course is to present and teach the fundamentals of gas and electric welding.

Industrial Arts Design will give the student theory and practice of designing projects used in the various shops.

Cabinet Making is a beginning course in machine wood-working, including production work and individual projects. The student is taught to file saws, sharpen cutting tools of all sorts, and the care of machine equipment.

Woodfinishing is the study of various finishes and their composition. Woodfinishing will provide the student with information of the various types of wood.

Woodturning and pattern making is for the purpose of making turned projects such as table legs, lamps and bowls and making wood forms for metal work and foundry.

Architectural drawing provides the students with an elementary study of architectural unity and compositions of projects. It also includes the study of problems in designs and building construction.

Industrial Arts Elective Courses. The general technical courses, which may be selected as an elective,

are stated below.

Course	Semester Credits
Automobile Mechanics	2
Carpentry	2
Brick Masonry	2
Tailoring	2
Upholstery	2
Photography	2
Radio	2
Shoe Repairing	2

Automobile Mechanics acquaints the student with the fundamental tools and equipment used in the mechanical industries.

Carpentry acquaints the student with the fundamental processes in carpentry and the care and uses of common woodworking hand tools, and machinery.

Brick masonry offers the student experience in several occupations of the trowel trade, including bricklaying, plastering, and cement finishing.

Tailoring is designed to develop skill in the art of tailoring.

Upholstery provides the student with technical training in a combination of subjects, tailoring and cabinet making. Upholstery is designed to give the student knowledge of repairing furniture, modeling furniture, and furniture craftsmanship.

Photography provides the student with theory and practice with hand cameras, development of plates and

printing, enlargements and reproduction of photographs.

Radio provides the student with information of elementary circuits, oscillating circuits and low frequency cycles.

Shoemaking is for the purpose of teaching the student the care and use of shoe making tools, equipment, types of shoe construction, and how they are repaired.

#### SUMMARY

The establishment of proper objectives are of great importance in establishing an industrial arts curriculum. The objective of the institutions are for the purposes of (1) developing to the highest possible degree the whole personality of the student, (2) preparing the student to live effectively in a democratic society.

The aims of the industrial arts department are (1) to provide professional, and technical training in each of the technical courses outlined in the foregoing proposed curriculum, (2) to prepare teachers for the junior and senior high school, and (3) to offer adequate education and training for teachers and skilled workers in industrial arts in each of the states where such an institution is located.

The proposed plan offers a four-year industrial arts curriculum in the professional, academic and technical courses. There are 130 required semester hours needed to receive the bachelor's of science degree. Sixty-eight

credit hours in the industrial arts academic courses, ten credit hours in the industrial arts professional courses, forty credit hours in the industrial arts technical courses, and twelve credit hours in general electives are required to receive the degree of bachelors of science.

## CHAPTER VI

### SUMMARY AND RECOMMENDATIONS

In order to facilitate the use of this study, a summary of the findings is given in this chapter.

The primary purposes of this report, as stated in Chapter I are: (1) to determine how many Negro colleges and universities offer curriculums in industrial arts; (2) to determine what general, professional and technical courses are offered; (3) to inspect teacher qualifications; (4) to find the geographical locations of these institutions; and (5) to suggest a desirable industrial arts curriculum of the preparation of junior and senior high school industrial arts teachers.

### SUMMARY

A brief, one-page inquiry form was mailed to sixty Negro colleges and universities in the United States for the purpose of making this study. In answer to the inquiry, catalogs were received from forty-two colleges and universities. Four colleges sent letters which stated that their schools did not offer industrial arts. Thirteen colleges and universities did not answer the inquiry.

A follow up postal card was mailed to these institutions. There were no answers to the postal cards. Of the forty-two catalogs received, twenty-two were found to have industrial arts in their curricula. The catalog study revealed that nineteen colleges and universities offered a four year industrial arts teacher education curriculum. In three institutions, the industrial arts curricula were found in the art department. Industrial arts technical courses were offered in twenty-two institutions.

The average required credit hours of graduation were as follows: academic courses fifty-two, industrial arts professional courses sixteen, industrial technical courses thirty-six, and electives thirty-two.

There are 208 industrial arts teachers in the twenty-two institutions studied. There are fifty industrial arts teachers with teacher's certificates, eighteen with diplomas, one hundred with the degree of bachelor of science, thirty-eight with master of science degrees, and two with the degree of doctor of philosophy.

The geographical locations of the twenty-two Negro colleges offering industrial arts are in the southern states.

The proposed industrial arts curriculum is planned to prepare industrial arts teachers for the junior and senior high schools. The proposed curriculum requires sixty-eight

credit hours in the general education or academic courses, ten credit hours in the industrial arts professional courses, forty credit hours in the industrial arts technical courses, and twelve credit hours in electives.

There are one hundred-thirty credit hours in the proposed industrial arts curriculum, required for the bachelors of science degree.

Recommendations. Based upon the findings of this study of industrial arts teacher education in the twenty-two Negro colleges and universities the following recommendations are made:

1. A national conference be held of the twenty-two Negro colleges and universities.
2. All schools should provide experiences in general shop for teacher preparation.
3. The technical course, general shop, be required by all industrial students.
4. The term Industrial Arts Education be adopted universally for the description of the curricula which includes the academic, professional, and technical courses.
5. The qualifications of industrial arts teachers should be equal to that of all other teachers on the college level.

From the given recommendations there are a number of improvements which may be realized by the Negro colleges and universities. Some of these are as follows:

1. Students could transfer from one institution to another without interrupting their course outline.
2. Students would be prepared to accept a position as a general shop teacher, after completing their course of study.
3. The student would get acquainted with many unit courses in one subject.
4. The industrial arts curriculum would be centralized under one name.
5. The teacher of industrial arts in the junior and senior high grades meets situation requiring broad teaching preparation and accepted skill and knowledge in one or more crafts.

The writer recommends that a more extensive study be made of the industrial arts program in the Negro colleges and universities. A further study should be made of the qualification of the teachers in the Twenty-two colleges and universities.



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## A P P E N D I X

OKLAHOMA INSTITUTE OF TECHNOLOGY  
OF THE  
OKLAHOMA AGRICULTURAL AND MECHANICAL COLLEGE  
SCHOOL OF INDUSTRIAL ARTS EDUCATION  
AND ENGINEERING SHOPWORK  
STILLWATER

July 24, 1950

Office of Admission

Gentlemen:

I am a graduate student in the School of Industrial Arts Education, Oklahoma A. & M. College, Stillater, Oklahoma, working toward a masters degree.

In order to complete the requirements for my degree, I am to make a survey of the industrial arts programs in all Negro colleges and universities in the United States. To aid me in my study, will you kindly send to me one of your school catalogs.

Thank you in advance for your cooperation.

Yours truly,

*Alexander Jones*  
Alexander Jones,  
Student.

Approved:

*C. L. Hill*

C. L. Hill, Advisor and  
Associate Professor Industrial  
Arts Education.

THESIS TITLE: A SURVEY OF INDUSTRIAL ARTS TEACHER EDUCATION  
IN TWENTY-TWO NEGRO COLLEGES AND UNIVERSITIES  
AND A PROPOSED INDUSTRIAL ARTS TEACHER EDUCATION  
PROGRAM

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