

HOME MECHANICS FOR THE NEGRO SCHOOLS OF OKLAHOMA

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J.H.V.

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## CHAPTER I

### A STATEMENT OF THE IMPLICATIONS AND EXTENT OF THE PROBLEM

The idea of home mechanics in the separate schools is relatively new in the field of Industrial Arts. Such courses have been added to the curriculums of a number of white schools, but no studies have been found which relate to the separate schools. The primary aim is that of furthering the education of Negro students as to the proper use, care, and repair of the principal mechanical devices in the home. As in all education, Industrial Arts seeks to meet the needs of students, by aiding them in acquiring consumer's knowledge and avocational activities. Home mechanics can give broader emphasis to education because:

1. There is a variety of materials and tools;
2. It encourages worthy home membership;
3. It provides opportunity for initiative;
4. Individualized instruction predominates.<sup>1</sup>

Since there have been no studies made which relate to home mechanics in Negro schools, the writer felt justified in making a study of this problem.

A Statement of the Problem. The main purpose of this study

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<sup>1</sup>Marl L. Bedell and Ernest G. Garner, Household Mechanics Industrial Arts for the General Shop, page 15.

is to discover the tentative units for a course of study in home mechanics which will be adaptable to the separate schools of small cities where funds will not permit the introduction of a number of varied single unit courses. The proposed solution of the problem depends upon a survey of a selected group of homes for the purpose of discovering the following: (1) What the curriculum should include for a course in home mechanics, as determined from the results of the survey. (2) What minor repairs are made in the home by some members of the family. (3) To determine the belief of the people who are interviewed regarding the value of a course in home mechanics to be taught to students in Industrial Arts in the separate schools.

The city of Tulsa, Oklahoma was selected for the survey because it was recognized as a typical, and progressive city. Tulsa, possesses characteristics that are, to some extent, peculiar to the southern central section of the United States. These peculiarities refer to climate, industry, education, transportation, and wealth.

#### PART A. NEED FOR THE STUDY

In a similar study by Schultz<sup>2</sup> it was reported that in making the survey it was found unnecessary to make a survey of Negro homes, due to the simplicity of the jobs performed

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<sup>2</sup>Leo Schultz, The Place of Home Mechanics in the Junior High School Curriculum, page 7.

in the homes. It was further stated that Negro homes did not have the conveniences and many of the white homes were taken care of by Negroes.

To Meet Certain Criticisms of Industrial Arts and Home Mechanics in the Separate Schools. As an instructor in the separate schools for Negroes for a number of years, the writer has come to the conclusion that the previous opinions though seemingly sound at the time, would not necessarily hold true today. Recent trends in education have caused greater emphasis to be placed on the role of home mechanics and the general shop in the secondary schools. These subjects should be introduced and expanded in the separate schools, since they are gaining in prestige and importance.

As a whole, industrial arts has been criticized because much that has been done in the past has been lacking in sound principles of educational value, especially by teachers in the separate school system. These teachers in the field have done little or no thinking on their particular subjects. Until recent years there has been a lack of capable Negro leaders to guide the destinies of the work and the results is that administrators and, in most cases, many of the Negroes have lost faith in the movement that had the possibilities of being one of the important subjects of the curriculum.

Perhaps one of the most striking criticisms of industrial arts in the separate school is the lack of Negro

teachers who recognize that industrial arts can be developed, who appreciate its possibilities, and who have the ability to apply principles learned to life situations. Industrial arts will be recognized as a worth while part of the educational development in the separate schools when these principles have been applied.

Another common practice and cause for criticism is the limiting of the activities to woodwork and drawing. This is perhaps more true in the smaller school systems. Nearly all industrial arts teachers in the past have lacked the incentive for professional study, and even today the Negro industrial arts teachers lack the professional study which is evidently one of the reasons why progress has been retarded. The hope in the future lies in the hands of competent teachers aware of the issues which will increase the educational opportunities of industrial arts in the separate schools and thereby remove some of the misconceptions and fallacies which have culminated in disrepute.

Home Mechanics. In this study the title Home Mechanics Instruction for Negroes is used in this form for the first time, so far as the writer has been able to determine. While making this investigation, a number of phrases synonymous to Home Mechanics Instruction for Negroes were encountered. The writer is of the opinion that, since the Negro comprises a minority group, and is considered to be socio-economically below the average according to the sta-

tistical reports on community progress, then naturally, meeting the needs of these people would require a different approach. Those phrases that were considered synonymous are typical of titles used to refer to Home Mechanics in general. Since no discrete definition has been found for the title of this study, the writer is obliged to propose one.

The writer will use the term, home mechanics, to refer to jobs of a mechanical nature which are carried on in connection with the maintenance of homes, grounds, and home equipment by owners or members of their families (who are concerned with the instruction given in the separate schools of Oklahoma). It will be noted that under the above definition, home mechanics is a form of industrial arts or practical arts. It has no direct educational objective; hence it approximates much more closely avocational training than other forms of practical activities carried on in schools. Home mechanics, however, under the definition, differs from specific vocational or trade training as follows:

1. It calls for a substitution of amateur standards for trade standards.
2. It deals with parts of a variety of trades.
3. Its content would be limited by amateur ability and local conditions.

Industrial Arts. In the industrial field there is a wealth of inspirational writing related to the various subjects and situations. The fullest comprehension and appreciation of the whole field of industrial life, activity, and education

is dependent upon contact with some of this inspirational material. Industrial arts is:

. . . 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 consumer's needs and comforts for daily living.<sup>3</sup>

Industrial arts includes a study of the fundamental manufacturing processes, the conditions under which these processes function, and the efficient selection, care, use, and enjoyment of the resulting products.

The General Shop. The term general shop seems to have come into general use gradually. Where writers have used the term general shop they seem to have two ideas in mind:

1. A series of shop activities by where a student might spend sometime, varying from three weeks, to a year, in each of several different shops.
2. A single shop equipped with the tools and machines of several different trades all of which are being taught at the same time.<sup>4</sup>

It has been reported that three types of general shops have been observed when the term general shop is used. They are as follows: (1) Household Mechanics, (2) Farm Mechanics, and (3) The Rotation Shop Plan. The general shop is widely used for teaching industrial arts courses at all grade levels.

Vocational Education. The vocational interests that come as

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<sup>3</sup>Louis V. Newkirk, The Industrial Arts Program, page 5.

<sup>4</sup>Louis V. Newkirk, "The History of the General Shop," Industrial Arts and Vocational Education Magazine, 35 (April, 1950), page 327.



a result of industrial arts teaching mature with the boys and girls over a period of years, focusing more clearly as the time for employment approaches. According to Ericson<sup>5</sup> vocational education is: "A specialized program for the purpose of preparing students for remunerative employment." From the point of view of manual skills the vocational shop teacher's opportunities vary greatly. In some instances they are quite limited.

General Education. Recent controversies have revived the ancient dispute between a general education which makes the "all-round man" and specialized education which serves some particular purpose. A definition of general education is:

The development of general intelligence, either by a system of study and discipline, or by the experiences of life. Education includes not only systematic schooling and formal methods of acquiring knowledge, but also that enlightenment and understanding which is gained through experience.<sup>6</sup>

The primary purpose of education is to develop happy, useful, and successful citizens. This leads teachers to assist youth in attaining and retaining desirable attitudes, habits, and accomplishments.

Insufficient Subject Matter. In analyzing the philosophical statements made by Gordon O. Wilber<sup>7</sup> it is easy to see that

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<sup>5</sup>Emanuel E. Ericson, Teaching the Industrial Arts, page 248.

<sup>6</sup>William H. Johnson and Isadore Fenn, Fundamentals of Industrial Arts and Vocational Education, page 26.

<sup>7</sup>Gordon O. Wilber, Industrial Arts in General Education, pages 1-15.

the criteria for home mechanics, as a phase of industrial arts, have been so involved in insignificant details that it has lost sight of its original mission.

Like other industrial arts subjects, home mechanics has been caught between its humble origin of simple shopwork and a soaring technology. One can easily see that society is changing, and that industrial arts is confronted with a real problem. In the case of home mechanics, it is evident that this condition is due more or less to a lack of published material on the subject, as well as a lack of scientific research. Most courses are being taught without any definitely established reasons for the inclusive content. Ericson<sup>8</sup> states that: three outstanding qualifications for successful teaching in shopwork have been generally agreed upon and often expressed as follows: (1) ability as a craftsman (2) ability to teach (3) scholastic and cultural background. Quoting further from his remarks, "It is the duty of the instructor to qualify himself through sufficient practice and contact with trade practice." Another significant statement made in view of the problem is:

Successful teaching is dependent upon knowledge of fundamental educational principles and methods. Such knowledge comes from professional work in teacher training institutions and from continued study and research.

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<sup>8</sup>Emanuel E. Ericson, Teaching the Industrial Arts, pages 45-46.

The writer's personal observation of the course in operation has convinced him that Ericson's first statement is correct. The observed classes engaged in arts and craft work in home mechanics. Nothing can be more irrelevant to the basic principles of the course than to require students to do those jobs that have no connection with the objectives of the course.

Home mechanics can be made to contribute all that the name implies. The real essence of the previous statement may be realized in considering the following statement as reported from the A V A Bulletin:<sup>9</sup>

Many industrial arts teachers group certain learning units to form special courses in home mechanics. They attempt by this means to provide a variety of practical experiences which are not limited to any one of the common shop fields or subjects. They select units that will afford pupils the opportunity to learn activities and jobs that are immediately useful and interesting to them as well as having real value in their adult lives.

If well prepared instructions are made available to pupils, covering fundamental processes, and if each pupil plans the procedure for each job undertaken, the most serious learning and teaching difficulties will have been removed.

To Increase the Use of Related Information. According to Fryklund,<sup>10</sup> the fundamentals of any operation being per-

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<sup>9</sup>American Vocational Association, Improving Instruction in Industrial Arts, pages 22-23.

<sup>10</sup>Verne C. Frylund, Trade and Job Analysis, page 65.

formed by the individual consist not only of manipulative work but they also include related information topics. This information is of such importance that the workman should know it. Related information should not be confused with the detailed points of nature that are integral parts of the operation.<sup>11</sup> It is realized that the task of including a semester program of related information is indeed a problem, but this should not excuse the fact that little attempt has been made to offer it as part of the prescribed work.

Outcomes to be Expected. This study is primarily concerned with the course based upon home repairs. One must analyze these jobs carefully in terms of outcomes expected. Specific outcomes are the only measurable results of any type of instruction and should be the immediate goal. These outcomes result in the outlining of specific objectives for home mechanics. The following items suggest the type of things that have proved best in fulfilling the purposes of home mechanics.<sup>12</sup>

1. Things that tend to make pupils self-reliant and to give them confidence and pride in their ability to meet differing situations.
2. Things that young people can do as a contribution to the upkeep of the home.
3. Things that young people wish to do in meeting their own needs.
4. Things that teach the proper use and care of

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<sup>11</sup>C. R. Allen, The Instructor, the Man and the Job, pages 54-62.

<sup>12</sup>American Vocational Association, page 51.

- equipment about the house, indoors and out.
5. Things that lead to better understanding of the environment and develop the desire to make improvements with small expense.
6. Things that practically all adults should know how to do, regardless of their earning occupations.

To interrelate industrial arts with vocational training is to create confusion especially for the small school where no attempt is made to train students in trade work. Education must prevail in order to think in terms of one's particular interest, and thereby clarify the objectives of each of these separate curriculums.

Uses of Outcomes. Home mechanics will help to serve as a source of additional work to relieve the over emphasized courses which are mainly restricted to woodwork and drawing. The training the student will receive will not be as intensive as he would experience in the unit shop, but it should be an invaluable aid in promoting the acquisition of consumer knowledge. The child will become acquainted with true to life problems of the homes and will have a more intelligent viewpoint of the cost of home repairs and upkeep.

#### PART B. ASSUMPTIONS

These purposes or assumed outcomes of industrial arts work are stated in terms of teacher attempts rather than in the usual terms of departmental or field aims. They should be considered as cumulative and unified rather than distinct ends or effects.

1. Interest in the Home. Home mechanics can be made to develop in each pupil an active interest in home life and in the methods and problems concerned with the upkeep of the home.
2. Appreciation and Use. Home mechanics can be made to develop in each pupil the appreciation of good design and workmanship, and the ability to select, care for, and use the home equipment wisely.
3. Self-Discipline and Initiative. Home mechanics can be made to instill in each pupil the habits of self-reliance, self-discipline, and resourcefulness in meeting practical situations.
4. Cooperative Attitude. Home mechanics can be made to develop in each pupil a readiness to assist others and to join happily in home membership.
5. Health and Safety. Home mechanics can be made to develop in each pupil desirable attitudes and practices with respect to health and safety in the home.
6. Interest in Achievement. Home mechanics can be made to develop in each pupil a feeling of pride in his ability to do useful things and to develop worthy leisure-time interests.
7. Orderly Performance. Home mechanics can be made to develop in each pupil the habit of an orderly, complete, and efficient performance of any task.

8. Shop Skills and Knowledge. Home mechanics can be made to develop in each pupil a measure of skill in the use of common types of constructions and repairs.

Concluding Statement. The writer is of the opinion that since the students of the separate schools rank lowest in socio-economic status, it is more important that these students should be given home mechanics instruction. It is hoped that in the near future every school superintendent and principal throughout this country will realize the importance of home mechanics for the separate schools. In Chapter I the need for a practical education for Negroes has been shown, also the purpose and extent of the problem has been introduced. In Chapter II an effort will be made through a study of contemporaneous literature to show some stratifications of these problems.



## CHAPTER II

### THE PHILOSOPHICAL APPROACH TO HOME MECHANICS IN THE MICRO SCHOOLS

The past decade in American education according to Waller<sup>1</sup> has witnessed more discussion on the subject of leisure time than any preceding period. Philosophical concepts of educational principles that were accepted in the recent past have been challenged by social and economic forces more important than in any previous period. Educators, philosophers, politicians, economists, sociologists, and laymen, are competing for leading roles in the educational drama. Of what should education in a democracy be composed? What are the needs of the individual and society in American democracy? What is the responsibility of the school in the current social order? These and many others are current questions familiar to all those engaged in education from the kindergarten through college.

General Education. The fact that much of the activity in shopwork in the school calls for association in cooperative effort may be pointed out as a contribution to the realization of civic education. Projects of the school shop which

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<sup>1</sup>C. M. Waller, "Adjustment Through the Arts," Industrial Arts and Vocational Education Magazine, 36 (May, 1950), page 424.

lead to the benefit of the school, the community, or certain groups of individuals, make their contribution to general education. The preceding statement brings about the question of what is meant by General Education. Wilber<sup>2</sup> states that almost every writer on the subject of general education has attempted, directly or indirectly, to define its meaning. In many cases these attempts have taken the form of a series of aims or purposes. Among recent examples are the "Seven Cardinal Principles of Secondary Education" and the "Cardinal Objectives of Elementary School." Some of these statements have been broad and inclusive, while others have been specific. Careful consideration reveals, however, that when stripped of verbiage and special application the various statements may be summarized as implying three basic purposes: (1) to transmit a way of life, (2) to improve and reconstruct that way of life, (3) to meet the needs of the individuals.

Philosophy and Objectives of Industrial Arts Education. Industrial Education is that part of the total education program that contributes to the optimal development of students through experiences related to tools, materials, processes, and products, or industry. According to Harrison:<sup>3</sup>

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<sup>2</sup>Wilber, Industrial Arts in General Education, page 5.

<sup>3</sup>E. C. Harrison, "An Evaluation of Industrial Arts Education Programs in the Secondary Schools for Negroes in Louisiana." Journal of Negro Education, pages 38-46.

1. The objectives of industrial education should be consistent with the philosophy and objectives of the whole school.
2. The objectives should be consistent with the values of democracy.
3. The values and objectives should be continuously examined and reconstructed as experience demands.
4. The objectives should result from group planning.
5. The objectives should be considered an integral part of the educational program.
6. The objectives should provide worthwhile work experience for the students.
7. In industrial education emphasis should be placed on vocational objectives near the end of the secondary school period.

These objectives involve two aspects of education. First, there are common learnings that all students should have regardless of the vocation they follow. Second, there are special interests, talents, and needs, which are unique.

#### PART A. STATEMENTS MADE BY LEADERS OF THE FIELD

On the basis of the experiences of many leaders in the field of industrial arts a good many additions, eliminations, and changes of emphasis, have been made in this study. In addition the writer secured extensive reports based on research studies and surveys made by these leaders in the search for facts that cause the development of programs suited for the objectives of industrial arts. The following represents a few selected excerpts by some of the leaders.

Home Mechanics. Of all the satisfaction experienced in a lifetime, there is none greater than the accomplishment of a good piece of work with one's own hands. The further an individual is removed from the class of an artisan or mechan-

ic, the greater the satisfaction. This probably accounts for the fact that statesmen so often find relaxation in using the mason's trowel and hammer, and that scientists are known to spend their spare time at a carpenter's bench. Most people witness a thrill of satisfaction when they manage to repair a chair and find that the job has been performed well.<sup>4</sup>

The Meaning of Home Mechanics. According to Newkirk<sup>5</sup> the meaning of home mechanics is as follows:

A common type of general shop course at the present time is home mechanics, or household mechanics. By home we do not mean a general junk shop, in which numerous articles from the home are repaired in a haphazard way with low standards of workmanship, but rather a carefully validated group of projects taken from the home on the basis of social utility and the technical and related information they contain. It is true that the handy-man activity aim predominates in the selection of home mechanics projects, but it does not exclude the other aims previously mentioned. Rather it gives a central core of validated projects around which to develop these aims.

As a part of the Industrial Arts Program, home mechanics should play a vital role in training of the youth in the junior high schools. While this work may be one of the elective subjects, it is of such fundamental importance that no junior high school should consider its program as satisfactory where the general shop is not offered.

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<sup>4</sup>Douglas Tuomey, The Home Mechanic, page 117.

<sup>5</sup>Louis V. Newkirk, Organizing the Teaching the General Shop, page 62.

The Usefulness of Home Mechanics. Bowman and Tustison<sup>6</sup> comment as follows on the usefulness of home mechanics in the school system:

Home mechanics seems to be coming forward, first, as the small town's solution to the junior high school industrial arts philosophy; second, as a means of providing shopwork for students in junior high school in the larger cities not particularly in the industrial group; third, as one form of shop in which a variety of occupational work may be presented in the school in the larger cities where it does not seem feasible to have a number of single-activity shops; fourth, it is being used in some places as the shopwork to give the part-time pupil in the vocational school who comes without any basis for intelligent schooling of occupational work.

The home mechanic program is proving to be an invaluable aid in helping to instill good work habits in the child.

Life adjustment Education. English and Finch<sup>7</sup> comment as follows to the question, "How can we--parents and teachers--develop in young children healthy, constructive attitudes toward work?":

1. Let your child share in the activities of the household. Feeding the goldfish, planting flowers, dunking dishes in the soapy water, and sweeping off the porch are good fun for children and helps them feel a part of things.
2. Make the child responsible for definite household tasks. The youngster who has the responsibility for keeping the grass trimmed, for dusting the parlor every Saturday morning, and for keeping his room tidy will also find it easier to accept the responsibility of his full-time job someday. Household tasks help develop

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<sup>6</sup>C. A. Bowman and F. L. Tustison, "Home Mechanics at Stout Institute," Industrial Arts Magazine, page 474.

<sup>7</sup>E. Spurgeon English and Stuart S. Finch, Emotional Problems of Growing Up, pages 28-30.

- good work habits, too.
3. Successful choice of career, then depends on: (1) the right attitude toward work, largely acquired from parents in the early years of childhood; and (2) guidance in selecting the career that is best suited to the child's interests and abilities, where counselors and school people can often be helpful. School and home both share in the responsibility of helping youth to prepare for financial independence--an important step in becoming a mature person.

If the youngster has no interest or ability for this type of work--it could be law, engineering, music, writing, or automobile mechanics--but is pressured into it, job failure and serious emotional difficulties may follow.

A Letter Form For Teaching purposes. In order to make a home mechanics course as practical as possible the following plan was devised. "At the beginning of the course each student is given a copy of the following letter:"

Dear parents:

The purpose of industrial arts in our elementary schools is to give the boys an opportunity to explore several different kinds of work. We are trying to improve the desirable activities that are important in life; such as, the practical life problems of the home and community.

We aim to correlate the facts and principles which the boy learns in industrial arts with real life activities.

In order to accomplish this we must furnish the boy with real experiences from life. We are offering a course in home mechanics which we feel gives the boy a splendid opportunity to develop his initiative and to explore further in similar fields.

There are several jobs that the boy can do in the home that cannot be brought to school. In order to promote work in practical experiences we urge the cooperation of the parents in carrying on this activity.

This includes such jobs as refinishing and repairing furniture, electrical appliances, plumbing, and the like.

Kindly enclose the card which is enclosed, to give

us your estimate of work done at home by your boy.

Sincerely yours,

George W. Deffendahl<sup>3</sup>

After a job has been decided upon, the boy and the instructor discuss the best methods and materials to be used. When the job is completed the boy is given a card, like the one below, to be filled out by the parents.

DEPARTMENT OF INDUSTRIAL  
ARTS  
Baker Elementary School  
Evansville, Indiana

HOME MECHANICS

Student..... Date.....  
Address.....  
Project.....  
Brief Description of work done.....  
.....  
.....  
Quality of workmanship:  
Poor... Fair... Good... Superior...  
Parent.....  
Instructor.....

In many cases it is desirable for the instructor to visit the home both during and at the completion of the job.

Practical wisdom, and knowledge of what home mechanics, or the general shop represent may be summarized by the poem which follows:

General Shop

The general shop is a mighty good plan

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<sup>3</sup>George W. Deffendahl, "Making Home Mechanics Effective," Industrial Arts and Vocational Education Magazine, 31(June, 1949), page 395.



To make of the boy a suitable man,  
 A place where he does more things than one,  
 The jobs that in life will have to be done.

A shop where he can sort of explore  
 To see what trade he is best suited for,  
 To grasp somewhat of a bird's eye view,  
 The tricks that old folks wish they knew.

The essential things in more than one line,--  
 Not a tradesman -- no, there's not enough time,  
 But sufficient to guide the future man  
 In the making of his own plan.<sup>9</sup>

William L. Hunter

In brief, this poem points out prevailing problems, and indicates what the general shop in the industrial arts program may contribute toward exploratory and social problems. As previously stated a common type of general shop course at the present time has been considered as home mechanics or household mechanics. This being so, the writer feels obliged to incorporate the above excerpt as suggestive meaning for home mechanics, as well as the general shop.

Negro Problems in Cities. The major problems which Negroes face are socio-economic in nature, and relate to income, living conditions, and lack of opportunities of self expression. The economic problems are difficult to interpret because of limited occupational choices which mean that the salaries earned are low, resulting in low standards of living.

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<sup>9</sup>Louis V. Newkirk, Organizing and Teaching the General Shop, page 5.

Diggs<sup>10</sup> after making a comparative study of delinquency and crime statistics concludes that the social aspect of the problems grow out of unsatisfactory home conditions, poor and even vicious neighborhood environment.

#### PART B. APPLICATION OF THE PHILOSOPHY

The Need for Home Mechanics in the Separate Schools. In the separate school curricula, a course in home mechanics, designed through teacher-pupil planning to meet the needs of the individuals and the community which it serves, could do much in making better socio-economic conditions in Negro homes. The criteria for meeting these needs are as follows: (1) "to keep pace with changing community needs and to translate these needs into a comprehensive program of shop instruction."<sup>11</sup> (2) to instill into the individual an awareness of responsibility in the upkeep of the home, and how he can make a definite contribution toward improving it. (3) to serve as a guide in choosing a career, and (4) to aid the student in acquiring appreciations and the values relating to use of leisure time and the proper attitude toward work. It will be seen that the results of the previous statements are to be desired for the needs of the home mechanics cur-

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<sup>10</sup>Mary Huff Diggs, "Some Problems and Needs of Negro Children as Revealed by Comparative Delinquency and Crime Statistics," Journal of Negro Education, 19(1950), page 291.

<sup>11</sup>Phail Wynn, "A Survey of the Industrial Arts Program in the Separate Schools and a Proposed Program for These Schools," (unpublished Master's thesis, Oklahoma Agricultural and Mechanical College, Stillwater, 1950), page 15.

riculum in the separate schools.

Objectives of Home Mechanics for Negroes in the State of Oklahoma. The following are selected objectives designated to meet the existing problems of home mechanics for Negroes in the state of Oklahoma:

1. Exploratory Opportunities. Exploring and finding values through developmental shop or laboratory type experience, revealing student interests and aptitude for possible vocational pursuits, leisure time activities, or the selection of other courses in the school.
2. Leisure-Time Interest. Developing within the student an awareness of the variety of tasks performed in our industrial environment, and the interesting possibilities for self and material development by encouraging the student to continue with some form of this activity as a hobby.
3. Prevocational Purposes. Where a sampling of industrial training is undertaken in advanced school courses with the intention of acquiring further training within a specific vocation.

As far as the writer has been able to determine there have been no objectives classified to the relative importance of their application. The writer feels obliged to apply these objectives to the needs of the Negroes in home mechanics courses in the state of Oklahoma.

Phail Wynn<sup>12</sup> cited fifty separate schools in the State of Oklahoma. None of these schools offer home mechanics in their industrial arts programs. It is the opinion of the writer that some of the socio-economic problems of the Negro may be met and partially solved if, through long term planning, curriculum builders recognize the importance of those courses which are closely related to everyday living. The only Negro school in the state offering home mechanic instruction is Carver Junior High School, in Tulsa. Table I shows a list of the separate schools in Oklahoma offering instruction in industrial arts that might be considered for a proposed curriculum in a home mechanic course of instruction.

Conclusion. The purpose of this chapter has been to present a philosophy of home mechanics and the need for this type of curriculum to serve better the individuals in the separate schools of Oklahoma. It has been recognized that education cannot be "given to" an individual. Education does not result from the "pouring in" of knowledge but rather from the development of abilities, attitudes, values, and understandings, a process requiring the active participation of the individual.

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<sup>12</sup> Wynn, "A Survey of the Industrial Arts Program in the Separate Schools and a Proposed Program for These Schools," page 17.



TABLE I

## SEPARATE HIGH SCHOOLS IN OKLAHOMA WHICH OFFER INDUSTRIAL ARTS

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Lincoln High School . . . . .	Altus
Lincoln High School . . . . .	Anardarko
Dunbar High School . . . . .	Arcadia
Douglass High School. . . . .	Ardmore
Dunbar High School. . . . .	Atoka
Douglass High School. . . . .	Bartlesville
Wheatley High School. . . . .	Beggs
Boley High School . . . . .	Boley
Lincoln High School . . . . .	Bristow
Lincoln High School . . . . .	Chickasha
Excelsior High School . . . . .	Clinton
Booker T. Washington High School. . . . .	Cushing
Douglass High School. . . . .	Duncan
Booker T. Washington High School. . . . .	El Reno
Booker T. Washington High School. . . . .	Enid
Booker T. Washington High School. . . . .	Eufaula
Faver High School . . . . .	Guthrie
Colored High School . . . . .	Hartshorne
Grayson High School . . . . .	Hoffman
Booker T. Washington High School. . . . .	Idabel
Lewisville High School. . . . .	Kinta
Douglass High School. . . . .	Kingfisher
Douglass High School. . . . .	Lawton
Douglass High School. . . . .	Lenapah
Booker T. Washington High School. . . . .	Luther
Manual Training High School . . . . .	Muskogee
Lincoln High School . . . . .	Nowata
Douglass High School. . . . .	Oklahoma City
Dunbar High School. . . . .	Okmulgee
Grayson High School . . . . .	Okmulgee
Booker T. Washington High School. . . . .	Pawhuska
Lincoln High School . . . . .	Pawnee
Blaine High School. . . . .	Perry
Attucks High School . . . . .	Ponca City
Miller High School. . . . .	Red Bird
Rentiesville High School. . . . .	Rentiesville
Booker T. Washington High School. . . . .	Sand Springs
Booker T. Washington High School. . . . .	Sapulpa
Booker T. Washington High School. . . . .	Seminole
Dunbar High School. . . . .	Shawnee
Douglass High School. . . . .	Spiro
Washington High School. . . . .	Stillwater
Moton High School . . . . .	Taft
Booker T. Washington High School. . . . .	Tishomingo
Woodson High School . . . . .	Tallahassee
Booker T. Washington High School. . . . .	Tulsa
Douglass High School. . . . .	Vian
Dunbar High School. . . . .	Wellston

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TABLE I (continued)

## SEPARATE HIGH SCHOOLS IN OKLAHOMA WHICH OFFER INDUSTRIAL ARTS

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Douglass High . . . . .	Wewoka
Lincoln High School . . . . .	Wynnewood

### CHAPTER III

#### HISTORY OF THE MOVEMENTS IN EDUCATIONAL HANDWORK.

Manual work is not a subject of modern introduction into the school curriculum, but has formed for several centuries past, a part of the education of children. Sometimes it has been favorably accepted, and has formed a prominent feature in the work of the school. According to Salomon<sup>1</sup> manual work has been neglected, in regards to the varying moods of public opinion. A history of manual instruction will be presented to show its origin and its progress up to the present-day industrial arts program.

Early Beginnings of Handwork. As far back as 2000 B.C. the Jews recognized the social values of handwork. After perusing statements on the subject by Frieze<sup>2</sup> the writer finds that the youth went to school to learn the Law for one-half of the day. In their Talmud was the commission to all fathers to teach their sons a trade in the other half of the day. From the above source of information it was mentioned that Comenius (1592-1670) was the first to make a scientific

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<sup>1</sup>Otto Aron Salomon, The Theory of Educational Study, page 125.

<sup>2</sup>John F. Frieze, Exploring the Manual Arts, page 3.



study of the child. Here is where modern pedagogy began. He concluded that the constructive and destructive instincts in children were alike. He was responsible for putting handwork into primary education for the first time.

Noted Exponents of Manual Arts. Rousseau (1712-1778) was recognized as the first noted exponent of manual arts in education. In the second edition of the English translation of his *Emile* (1763) was outlined a new system of education, in which handwork in the trades and agriculture form a part.

Pestalozzi (1745-1827), Froebel (1782-1852) and Herbart (1776-1841) were considered as champions of the new idea in education which was rising in Europe, namely, educational handwork.<sup>3</sup> The belief was that the kind of education would benefit society socially and economically. Pestalozzi, hoped to bring about moderation in class distinction.

Fellenberg's institution at Hofwyl, Switzerland, probably influenced manual arts more than all of the educational experiments of the early nineteenth century. Fellenberg believed in class distinction. He also believed that both upper and lower classes should be regenerated, and good relations established between them. Like others, he hoped to accomplish this social reform through organized instruction in handwork.

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<sup>3</sup>Friese, Exploring the Manual Arts, page 4.

A number of educational "movements" in Europe and America influencing educational handwork, developed during the nineteenth century. The first of these was largely due to Fellenberg's experiment at Hofwyl.

The Development of Manual Training in the United States.

Manual training developed rapidly in the United States. By the year 1900 it was well established. Struck<sup>4</sup> cites that with experience came modifications in points of view and corresponding changes in aims and methods. Before the close of the first decade during the twentieth century leaders in industrial education were making distinctions between general industrial education of the manual training type and specific vocational industrial education such as was to be provided for in the National Education Act of 1917.

In the manual labor movement the social values of handwork were again emphasized. In his report of a survey (1833) Weld stated that the type of education prevalent was detrimental to health, the mind, morals, also destroyed habits of industry, and was so expensive that its effects were anti-republican.<sup>5</sup> All of these bad conditions it was thought by some would be alleviated by the introduction of the manual labor idea in education.

Manual training, given for purposes of general educa-

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<sup>4</sup>Theodore F. Struck, Foundations of Industrial Education, page 31.

<sup>5</sup>Friese, Exploring the Manual Arts, page 5.

tion, was soon expressed in terms of the newer theories and beliefs in education; it later emerged from a "special" subject into one that was considered fundamental and one that was to be required in grades seven, eight, and nine. Its very name was gradually to be changed in many states to industrial arts.

The Mechanics' Institute Movement. During the first three decades of the nineteenth century there was a definite movement among the common people of Great Britain to obtain more knowledge.<sup>6</sup> About the same time that the Manual Labor Movement was attracting attention in the United States another educational movement known as the Mechanics Institute Movement was being nurtured in England, Scotland, and the United States. In 1800 at Glasgow College, Scotland, a course in physics adapted for mechanics was organized. The aim was to give mechanics some idea of the theories upon which they worked when in the shops. Applied physics was the chief study. This idea spread to England.

In the United States the movement found friends and it was called the lyceum. At the town lyceum speakers would talk about some subject of interest to mechanics and then all present would discuss the subject.

The Industrial Art, and Arts and Crafts Movements. One of

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<sup>6</sup>Charles A. Bennett, History of Manual and Industrial Education Up to 1870, page 301.

the outstanding characteristics of the arts and crafts movement was; the distinct emphasis put upon the aesthetic side of the work instead of the skill that had been stressed formerly.<sup>7</sup>

Industrial art, that is the securing of refined design in industrial products, should not be confused with the term "industrial arts." In 1841 the English government made grants for this type of art training. From the previously mentioned sources it was found that the World's Fair, held in London in 1851, made evident the fact that the industrial products of France and Germany were more interesting, and therefore more saleable, than those of England, due to the application to support industrial art instruction, and when the national department of education was established in 1856 it took over the supervision and control of this instruction. The results of this movement in England were immediately noticeable.

The Arts and Crafts Movement originated with a group of Englishmen, notable Ruskin and William Morris. Ruskin believed that art should serve the people in their daily life. William Morris was interested in the removal of superfluous applied design, "applied" in the sense that it was not an integral part of the structure of a thing, but rather something added.

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<sup>7</sup>Ray Stombaugh, A Survey of Movements Culminating in Industrial Arts Education in Secondary Schools, page 7.

The Arts and Crafts Movement influenced the products of the building trades, industries, and of the schools, particularly the woodwork offered as hand instruction. This influence was felt in the United States down to the close of World War I.

The Technical School Movement in the United States. Another movement, of collegiate grade, which also concerned itself with educational handwork was the development of numerous scientific, polytechnic, and engineering schools, between 1824 and 1865. These schools were organized principally in the East. The Morrill Land Grant by Congress in 1862 brought about continued development of engineering colleges in connection with Mid-western and Western state universities. The significant thing about this movement was that shops were established in these schools. It was and still is considered that shopwork of various kinds forms a valuable part of the training of engineers.

The early history and influences surrounding the history of the movements in educational handwork up to 1862 have been presented. The European influences that have affected American manual arts will be discussed in Part A.

#### PART A. EUROPEAN INFLUENCES AFFECTING AMERICAN MANUAL ARTS

While the development of industrial education in the United States was influenced by the important changes as they developed in Europe, the process of evolution was more

simple than in England because, from early Colonial times, the principle of elementary education for everybody and free public schooling for the poor was well established.

Influence of the Russian System of Tool Instruction. The Imperial Technical Institute of Moscow, Russia, inaugurated shopwork in that school in 1868.<sup>8</sup> Its purpose was strictly vocational. Through the shopwork it was hoped that the following desirable results would occur: (1) mechanics would be trained in a shorter time, (2) a larger number of pupils would be trained at one time, (3) a higher technique in handwork would be secured, (4) the progress of pupils could be determined.

Many practices in manual arts instruction today can be traced directly to this Russian system of technical tool instruction. Probably the most important phase of this system, in its influence on American manual arts was that the products were of little economic value. They served only as a medium for the technical instruction with tools and machines.

Class instruction, followed by individual help to prevent the forming of bad habits, was the method used at the beginning. Later the teacher's help was lessened, and independence was developed during the latter part of the course. The division of labor was recognized in the instruc-

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<sup>8</sup>Friese, Exploring the Manual Arts, page 9.

tion given and in the organization of the shops.

The work of the Russian system of tool instruction was shown at the Philadelphia Centennial Exposition in 1876. It created an immediate and far-reaching influence on educational handwork or manual training in the United States.

Influence of Educational Sloyd. Salomon<sup>9</sup> defines Sloyd as a system of Educational Handwork. A sloyder was a man skilled in many ways. Sloyd was first practiced as a home art. It was introduced into the Swedish schools to help raise the moral standards which had deteriorated with the advent of the factory system and decay of home sloyd.

During the period 1870 to 1872 the famous trade school at Naas, Sweden, was established, with Otto Salomon in charge. Salomon saw in handwork a means of general education as well as trade instruction. He was firmly established in this belief after his visit to Finland in 1873 where he came in contact with the sloyd work of Uno Cygnaeus. A study of his aims revealed this fact. He wanted to develop the normal activity of children in a beneficial way, instill respect for labor, develop independence and self-reliance, train in habits of order, exactness, and cleanliness, train the eye in the sense of form, and develop physical powers.

In Denmark sloyd instruction was first begun by a manufacturer who established a sloyd school for his appren-

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<sup>9</sup>Salomon, The Theory of Educational Sloyd, page 74.

tices for their cultural development. He was also responsible for its introduction into the grammar grades in Copenhagen.

French Influence. The French did very little in educational handwork which influenced that in the United States. As early as the close of the eighteenth century shops were established in schools. The general characteristics of French manual arts were very similar to those of the Russian system. One development was when Fichet in 1842 established shopwork in a school for the purpose of giving boys the opportunity of finding out what they were best fitted to do. It was exploratory in nature.<sup>10</sup>

German Influence. There is apparently little in German educational handwork which influenced that in the United States. The instruction given was usually of highly technical or of trade character. The continuation schools of Germany, particularly Munich, were models in the scope of trade instruction offered. A very large percentage of the population received this type of education. One contribution, however, was the recognition of the need that the teachers be trained both in pedagogy and their particular trades or crafts.

The influences and developments affecting the American Manual Arts have been presented in Part A. In Part B.

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<sup>10</sup>Friese, Exploring the Manual Arts, page 11.



a discussion will be made of present trends of industrial arts in the school systems.

#### PART B. THE BEGINNINGS OF AMERICAN MANUAL ARTS

An interesting side-light upon the development of industrial arts in the United States may be obtained from a study of the manual training movement. Manual training deserves consideration in connection with the study of industrial arts because the traditions and ideals of manual training have strongly influenced current educational thought and practice.

Effect of the Russian Exhibit. As was pointed out, the exhibit of the Imperial Technical Institute of Moscow, Russia, at the Philadelphia Centennial Exposition in 1876 had an immediate and far-reaching effect on American educational handwork. The former was a system of fundamental tool instruction based upon the application of the methods of formal discipline or transfer of training, to instruction in handwork. It was wholly vocational in its objective. Instruction was given through a system of models, many of which were abstract in their application and of no intrinsic worth.<sup>11</sup>

The First American Manual Training School. In St. Louis

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<sup>11</sup>Ibid., page 12.

there had been developing slowly since 1857 a plan for hand-work instruction in secondary preparatory schools associated with Washington University. These experiments culminated in 1879 in the organization of the St. Louis Manual Training School of Washington University. Clavin M. Woodward<sup>12</sup> had been associated with the previous experiments and was the real founder of the school, funds for which were provided by public-spirited individuals.

In 1873, before the founding of the Manual Training School, Woodward advocated the introduction of handwork instruction as a part of the education of all boys regardless of their educational aims. On this ground he has been considered the real father of manual training. The school he established in 1879, however, was not organized for the purpose of giving handwork as a part of cultural education.

The Scandinavian Sloyd Influence. In 1882 the sloyd system gained a foothold in the schools of Boston. Immediately after, that city had been recognized as a great experimental center for educational handwork in America.

Frank M. Leavitt, of Boston, who had been trained in the Russian system, saw the interest value to be derived from the adoption of useful articles. Gustaf Larsson, another early teacher and experimenter in Boston, first used the Swedish models in his work. He found that to be useful in America the models had to be re-designed. This he

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<sup>12</sup>C. M. Woodward, The Manual Training School, page 8.

did. He also added mechanical drawing and found in the wood lathe a valuable adjunct. Coping saw work and whittling were frequently a part of the early American sloyd.<sup>13</sup>

Struggle for Recognition. Manual training, principally woodwork, some metal work, and mechanical drawing, had to fight for a place in American education. In the National Association the controversy raged from 1882 to 1889. In 1893 the Western Drawing Teachers' Association, which later developed into the Western Arts Association, was formed. Friese<sup>14</sup> indicated that 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. He also states that in 1899 the Eastern Arts Association was formed and by 1913 various state and regional manual arts associations had been organized. The International Exposition in St. Louis in 1900 gave manual training, including drawing, added impetus.

Growth and Development. Following the technical and trade influence from Russia, the Woodward influence which turned the Russian idea into the realm of general education, and the influence of the finished useful product of Scandinavian sloyd, manual training started on a period of country-

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<sup>13</sup>Salomon, The Theory of Educational Sloyd, pages 144-9.

<sup>14</sup>Friese, Exploring the Manual Arts, pages 15-16.

wide expansion and growth. With this growth came also misconceptions of the aims of manual arts which made it fight for and eventually justify its place in general education on a sound basis. Large vocational or trade values to be derived from manual arts was one of these misconceptions. This was one of the causes which led to the movement for vocational education in the United States.<sup>15</sup>

Vocational Schools for the Education of the Negro. Anderson<sup>16</sup> cites that one condition contributing to the vocational education movement was the success with which it had been carried out in schools established for the education of the Negro soon after the close of the Civil War. "The Massachusetts Commission says":

Broader-minded students of education...see that this sort of (vocational, industrial, school) training ... is being used to elevate the colored race in the South; and they ask why it may not be equally efficient in improving the social conditions of white as well as black children.

Writing in 1915, Booker T. Washington, himself a pupil of General Armstrong, the founder of Hampton Institute, the first of the great vocational schools for the Negro, says:

At the present time there is almost no Southern state that is not putting forth efforts in the direction of securing industrial education for its white boys and girls, and in most cases it is easy to trace the history of these efforts back to Gen-

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<sup>15</sup> Lewis Flint Anderson, History of Manual and Industrial School Education, pages 206-210.

<sup>16</sup> Ibid., pages 210-211.

eral Armstrong.<sup>17</sup>

Among the most formidable of the conditions resulting from the Civil War was the existence, closely intermingled with the white population of this country, of millions of emancipated Negro slaves, heavily handicapped under the burden of the habits of their former condition, lacking the knowledge, the experience, the worthy ideals and ambitions which alone could render them capable of the right performance of their duties as free members of a democracy.

The amelioration of the condition of this race through school education, in the industries, as well as in the liberal arts and sciences, constitutes one of the most inspiring chapters in our educational history.

The great pioneers in the work of elevating the condition of the Negro race in this country saw clearly, as Pestalozzi had seen, that the intellectual and moral enlightenment of a submerged class must be based upon, must be an outgrowth of, their economic efficiency. It was this principle which guided the efforts of General S. C. Armstrong in organizing, in 1868, for the education of the Negro, the Hampton Normal and Agricultural Institute, an institution which has been characterized as "the first industrial school of any importance in the United States."

The Founding of Hampton Institute. According to a report

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<sup>17</sup>Booker T. Washington, Up from Slavery, page 166.

made by Bennett,<sup>18</sup> Hampton Institute, Hampton, Virginia was the first industrial school for Negroes of any considerable influence founded after the civil war. It was founded in 1868 by General Samuel Chapman Armstrong, a man who had foreseen the need for an educational institution specifically adapted to the need of the ex-slave. General Armstrong said his purpose in founding Hampton was:

To train selected Negro youth 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 these 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.

Hampton Institute was incorporated as an independent institution in 1870, and was assigned one-third of the funds accruing to the state from the provisions of the Land Grant Act.<sup>19</sup> Aiming to provide an elementary and secondary education to students of extremely limited means, and, at the same time, to foster in them the spirit of independence, the institution embodies certain of the characteristics of the manual labor school.

The success of Hampton Institute in realizing its aims led to the establishment of numerous similar institutions. One of these was the Tuskegee State Normal and In-

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<sup>18</sup> Charles A. Bennett, History of Manual and Industrial Education from 1870 to 1917, page 244.

<sup>19</sup> Anderson, History of Manual and Industrial School Education, page 213.

ustrial Institute.

The Founding of Tuskegee Institute. A second most influential movement culminating in industrial training for Negroes was the work of Booker T. Washington, who came to Hampton in 1872. After graduation, he came to Tuskegee, which was founded in 1870 by the Alabama legislature and placed under his direction. Since then this school has had an even more remarkable growth than the parent institution at Hampton.

From a humble and simple beginning in an old church, Booker T. Washington, with dauntless courage and indomitable perseverance, planned, organized, and developed, an institution to meet the needs of Negroes in the South. Such a tremendous undertaking with little or no resources was "making brick without straw." His was a two-fold task-- that of procuring facilities for industrial education and that of convincing Negroes and white people that such a type of education was necessary.<sup>20</sup>

The Establishment of Langston University. Prior to admission to the union the present State existed as Oklahoma and Indian territories. These Indians were freed and the United States entered into a new treaty with the Indians. Schools for Indians date back as far as 1836 but the rec-

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<sup>20</sup>Tuskegee Institute Bulletin, XL( April, 1947), page 36.

ords of Negro schools before 1907 are incomplete.<sup>21</sup> It is known that the first territorial legislature set aside land for the support of schools. During the period from 1895 to 1905 there were established about 500 schools for whites and Indians and about sixty schools for Negroes.<sup>22</sup>

Langston University is the only accredited institution of higher learning to be established for Negroes in the state of Oklahoma. It was created by an Act of the Territorial Legislature in 1897. The citizens of the community of Langston donated the site and the school opened on September 14, 1898.<sup>23</sup>

Federal Aid Asked For Negro Schools. The first Morrill Bill was signed by president Lincoln before the Emancipation Proclamation. There was no Negro college question then. Not only were there separate agricultural colleges for Negroes and whites, but there were Negro schools of less than college grade which were doing an excellent job in training for agriculture. Senator Morrill did not anticipate these situations. When he became aware of this, he tried to extend federal aid to Tuskegee Institute, one of the Negro schools of less than college grade. This created a new problem for

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<sup>21</sup>R. H. Wilson, Fourth Biennial Report of State Superintendent of Public Instruction, pages 223-224.

<sup>22</sup>Annual Report of the Department of Interior, page 8.

<sup>23</sup>Nathaniel J. Washington, Historical Development of the Negro in Oklahoma, page 17.



him because he was faced with the demand for the same kind of aid to the Worcester Polytechnical Institute which was serving the needs of industrial Massachusetts.<sup>24</sup>

Conclusion. Manual training as a form of public education was a slowly developed process. The underlying thought and philosophy date back to Comenius, Rousseau, Pestalozzi, and Froebel. The immediate impulses stimulating manual training in the United States came from Russia where Della-Vos had developed a series of manual exercises at the Imperial Technical School at Moscow, and from Sweden where Otto Salomon had developed, at Naas, the underlying psychology, the methods, and the technique of teaching sloyd. The introduction of manual training to the United States dates back to the Centennial Exposition at Philadelphia in 1876.

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<sup>24</sup>John A. McCarthy, America's Greatest Resource, page 22.

## CHAPTER IV

### A SURVEY OF OTHER STUDIES IN THE FIELD

It is doubtful if any other research study directly concerning the home mechanics curriculum for the separate schools of Oklahoma has been made. If so, this writer has been unable to find that information. Parker made a study of the need for a cooperative vocational program for Negro youth in Tulsa, Oklahoma.<sup>1</sup> Since the writer selected Tulsa as the city for the survey this study proved helpful in acquainting the writer with the economic and social background of the Negro in Tulsa. The study was as follows:

This study indicates that retail trades, personal services and construction industries have offered the Negro more opportunities for employment than had other industries.

In this investigation it was disclosed that the employers of the 164 establishments which employed Negroes listed 513 as the number of Negro workers who were at that time employed on jobs which required a definite training or learning period. Of the Negroes employed, 12 per cent were more than 55 years of age.

In the establishments studied in Tulsa, only 1 per cent of the Negro workers was engaged in occupations that required college training. The distribution of the majority of the other Negro workers showed that 9 per cent were engaged in selling, 17 percent were skilled workers, and 34 per cent were semiskilled workers.

Of the 164 payroll jobs that required a training period, 39 percent of the jobs listed by the

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<sup>1</sup>F. N. Parker, "Need for a Cooperative Vocational Program for Negro Youth in Tulsa, Oklahoma," (unpublished master's thesis, Iowa State College, Ames, 1944), page 41.

Tulsa employers required one year or less of training. Only 6 Negroes were reported to be in training for payroll jobs. The employers reported a scarcity of employees for 135 payroll jobs.

The information given by the Tulsa employers interviewed in this survey suggested that a part-time vocational program in the high school for Negroes in Tulsa was needed. The information also indicated that the employers would cooperate with the program.

The above mentioned study was not influential in the final analysis of the study made by the writer, but it was quite helpful in the gathering of information for the survey. The following studies were made concerning home mechanics, hence they proved a valuable aid in the writing of this study.

Reviews of Similar Studies. A review of the literature of the field of Industrial Arts reveals very few studies similar to the one the writer is undertaking. In addition to making a search in the field of Industrial Arts Education, the writer examined the Readers Guide from the years 1911 to 1951, the Industrial Arts Index, and a list of over a thousand graduate theses and dissertations published in studies in Industrial Education accepted by institutions of higher learning in the United States.<sup>2</sup> The search showed only ten similar studies on home mechanics and none concerning home mechanics as affiliated with the education of Negroes. The writer tried to secure all of these theses for

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<sup>2</sup> American Vocational Association, page 86.

examination, but only the ones mentioned in this writing were available to be loaned from their respective libraries.

Editorial by C. A. Bennett. An editorial by Bennett,<sup>3</sup> which appeared in the January, 1927, issue of the Industrial Education Magazine, credited the origin of home mechanics to J. H. Trybrom of Detroit.

This brought a response from R. H. Rodgers of Milwaukee, Vocational School in which he stated that home mechanics originated at the Stout Institute, Menomonie, Wisconsin, in 1908, and that this could be verified by the Stout Institute bulletin, December, 1910, page 61. Rodgers stated further that L. D. Harvey, G. Buxton, and Fred Curran initiated the course in connection with teacher training work.

Bennett then wrote Buxton, who in turn replied that the work was started at the Stout Institute in 1908, but that the idea originated with E. H. Harlackner, a Stout graduate who had begun the first work in home mechanics at Eau Claire, Wisconsin, in 1908.

The May, 1927 issue of the Industrial Education Magazine cleared up the situation by giving the credit to Eau Claire and Menomonie, Wisconsin. To Detroit was given the credit for being the first large city to include the course in its system.<sup>3</sup>

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<sup>3</sup>Schultz, The Place of Home Mechanics in the Junior High School Curriculum, pages 2-3.

Study by Newkirk. In this study, 126 jobs were formulated into a questionnaire which in turn were given to 100 mature people. From the returns, 105 jobs were formed into a course of study consisting of 71 jobs and 34 supplementary jobs. These were grouped into 9 general units as follows:<sup>4</sup>

- |               |                   |
|---------------|-------------------|
| 1. General    | 5. Finishing      |
| 2. Electrical | 6. Metal          |
| 3. Drawing    | 7. Auto Mechanics |
| 4. Woodwork   | 8. Concrete       |
| 9. Plumbing   |                   |

Under each general unit were grouped the single jobs of the work. Under each single unit were listed the references, job sheets, and questions for class discussion. There was also a list of abilities which the pupil should gain by his experience in the shop.

Study by Bottenslog. An examination of existing studies was made, and an available list of jobs was revised, combined and submitted to groups of teachers and students for further modification and additions. The final check sheet was given to parents and students, and from these two sources 385 returns were obtained. The checklist contained 54 jobs or activities and the frequencies varied from 377 for the most frequently mentioned job to 25 for the job mentioned the least number of times.<sup>5</sup>

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<sup>4</sup>Louis V. Newkirk, Course of Study in Practical Mechanics, page 8.

<sup>5</sup>F. E. Bottenslog, "Home Mechanics Based on Home Repairs in Ashville, North Carolina," (unpublished Master's Thesis, Peabody College for Teachers, Nashville, 1931).

The five highest ranking activities were:

1. Sharpening knives
2. Hanging Pictures
3. Polishing a car
4. Putting in a new electric fuse
5. Installing a radio serial

The five lowest ranking jobs were:

1. Making a new screen
2. Patching a concrete walk
3. Cleaning wallpaper
4. Painting a barn
5. Repairing a mechanical doorbell

Study by Schultz. The purpose of this thesis was to build a course of study in junior high home mechanics by selecting curriculum content characterized as follows:<sup>6</sup>

1. Opportunities for experience in a variety of fundamental activities.
2. Selection of activities to realize exploratory values rather than specific trade preparatory values.
3. Selection of projects in accord with the interest and achievement levels of the group.
4. Provision for individual work based upon individual differences.

The solution of the problem was based upon a survey conducted in the cities of Cape Girardeau, Missouri, and Cairo, Illinois. Four hundred fifty home mechanics charts were prepared by the writer, and were placed in as many homes of the cities named as were possible. The purpose of the charts was to determine who performed the various jobs about the the home and at what time of the year they were performed.

The jobs that were finally incorporated in the course

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<sup>6</sup>Schultz, The Place of Home Mechanics in the Junior High School Curriculum, pages 2-3.

of study met the following criteria:

1. They were practical and adapted to shop instruction.
2. They had high ranking in similar studies.
3. They were jobs that were actually being performed in the homes.

A Study by Schubert. Two methods of procedure were considered in obtaining information for this study; one was for the questionnaire to be forwarded through the mail; the other a check sheet to be used in conjunction with the personal interviews. The latter method was chosen because it was felt that it would be more reliable from the standpoint of the number of returns, not forgetting the advantages of personally contacting the people who were to cooperate in the survey.

The jobs included in the check sheet were obtained from the following sources: (1) similar studies by Bottenslog, Newkirk, and Schultz, (2) published articles by Bodell, and Stiedtman and Scott.<sup>7</sup>

A Study by Prebble. This study<sup>8</sup> was started in preparing a report on boys' home economics and girls' home mechanics for a class in Industrial Arts Education at Iowa State

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<sup>7</sup>W. H. Schubert, "Evaluation of Home Mechanics Content Based Upon A Survey of Jobs Done in the Home," (unpublished Master's thesis, Iowa State College, Ames, 1934).

<sup>8</sup>Fred Prebble, "Original Material for Curricula in Home Mechanics for Girls, and Home Economics for Boys," (unpublished Master's thesis, Iowa State College, Ames, 1933).

College. This was followed by a conference led in the 1931 summer quarter class (Vocational Education 546) Conference Leadership, Iowa State College, the problem being, "What should be the mechanical knowledge and abilities of the average housewife?" This conference resulted in a list of things the average housewife should be able to do or know, and concluded with a list of jobs which might be taught to a class of girls in home mechanics.

Form Letters were sent out to eighteen teachers who have had articles published on a similar topic or who had been cited as having had experience in this field. Returns were received from twelve.

The purpose of these letters was to make contact with people of some experience in this field and if possible, to get their opinions on the problem and whatever information and material they might care to submit or offer. A small amount of usable material was received in this way.

Form Letters were sent to approximately 250 homes of eighth and ninth grade boys and girls for their parents to consider and answer. Approximately 75 per cent of these were returned and 30 per cent of the 75 per cent contributed material.

A Study by Garrand. The first part of this study required the securing of a list of jobs that needed to be done about the home. This involved the selecting of the best type of survey for securing the information, the best method to use,



and the best source of information from which to draw.

The direct fact-finding survey and the assembling of home mechanics courses already published, were considered. The writer adopted the direct fact-finding survey, because when evaluated by the criteria of speed of operation, reliability, possibility, and limiting factors, it was rated highest of the types considered. The following three methods of securing information were considered; conference, personal interview, and having individuals write out the list of jobs.<sup>9</sup>

A Study by Parker. The purpose of this study was to use material gathered as a basis to justify the need for a school devoted to industrial education for Negroes in the state of Oklahoma and to propose a program for this school. This study made a minor contribution to the present writing, due to the information presented that contained statistics on the status of the Negro in Oklahoma. In addition to the above information there were objectives listed for home mechanics offered in some public schools, either in the division of industrial arts or the division of home economics.

The Need for Home Mechanics in an Industrial School for Negroes was indicated with the aid of a table showing that 1387 Negro males and 11,231 females were engaged in domestic work in 1940 in the state of Oklahoma. The table

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<sup>9</sup>Sidney F. Garnand, "A Study of Procedures in Establishing a Home Mechanics Course for Towns the Size of Garden City Kansas," (unpublished Master's thesis, Colorado Agricultural and Mechanical College, 1933).

also indicated that more Negroes were employed in domestic work than in any other line of work. After perusing this study it is the opinion of the writer that if people are to be employed in a phase of work there should be some means of training them to qualify for this employment.<sup>10</sup>

A Study by Brown. At the time of the present writing this study was found to be the most recent writing concerning itself with home mechanics. Due to the similarity of techniques employed, this study proved very helpful to the writer, in that ideas were manifested within the writer's proposed course of instruction. The following list of things the domestic worker should learn to do is based on the study by Brown<sup>11</sup> of jobs actually done by housewives.

A. Things Domestic Workers Should Learn To Do.

1. Sharpen a knife. . . . . \_\_\_\_\_
2. Varnish furniture. . . . . \_\_\_\_\_
3. Lubricate a sewing machine . . . . . \_\_\_\_\_
4. Polish a floor . . . . . \_\_\_\_\_
5. Paint woodwork and furniture . . . . . \_\_\_\_\_
6. Clean and polish furniture . . . . . \_\_\_\_\_
7. Lubricate washing machine. . . . . \_\_\_\_\_
8. Install and check an electric fuse . . . . . \_\_\_\_\_
9. Lubricate small electric appliances. . . . . \_\_\_\_\_
10. Remove scratches from furniture. . . . . \_\_\_\_\_
11. Repair an electric extension cord. . . . . \_\_\_\_\_
12. Paint interior walls . . . . . \_\_\_\_\_

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<sup>10</sup>Hubert L. Parker, "The Need for Industrial Education for Negroes in the State of Oklahoma," (unpublished Master's thesis, Oklahoma Agricultural and Mechanical College, 1951), pages 48-49.

<sup>11</sup>Ray E. Brown, Home Mechanics for Girls, pages 15-16.

13. Sharpen a pair of scissors . . . . . \_\_\_\_\_
14. Repair a screen door . . . . . \_\_\_\_\_
15. Make stakes for garden or flowers. . . . . \_\_\_\_\_
16. Adjust and clean burner of oven gas stove. . . . . \_\_\_\_\_
17. Upholster chair seats. . . . . \_\_\_\_\_
18. Varnish linoleum . . . . . \_\_\_\_\_
19. Replace loose joints in furniture. . . . . \_\_\_\_\_
20. Remove old finish on furniture . . . . . \_\_\_\_\_
21. Repair a garden hose . . . . . \_\_\_\_\_
22. Replace handles in hoes, rakes, shovels, etc . . . . . \_\_\_\_\_
23. Solder pans, buckets, tubs, etc. . . . . \_\_\_\_\_
24. Repair drawers in furniture. . . . . \_\_\_\_\_
25. Replace washers in faucets . . . . . \_\_\_\_\_
26. Apply kalsomine. . . . . \_\_\_\_\_
27. Repair an electric iron. . . . . \_\_\_\_\_
28. Fill holes and cracks in floors. . . . . \_\_\_\_\_
29. Put in a window pane . . . . . \_\_\_\_\_
30. Make a house plan. . . . . \_\_\_\_\_
31. Make a simple furniture drawing. . . . . \_\_\_\_\_
32. Adjust a lawn mower. . . . . \_\_\_\_\_
33. Clean and adjust door locks. . . . . \_\_\_\_\_
34. Replace fuse in electric percolator. . . . . \_\_\_\_\_
35. Put a new valve in a gas stove . . . . . \_\_\_\_\_
36. Make a knife and fork box. . . . . \_\_\_\_\_
37. Adjust a refrigerator . . . . . \_\_\_\_\_
38. Clean an electric motor. . . . . \_\_\_\_\_
39. Replace door hinges. . . . . \_\_\_\_\_
40. Paint porch floor and ceiling. . . . . \_\_\_\_\_

#### B. Things Domestic Workers Should Know.

1. Kinds of fuses and their uses. . . . . \_\_\_\_\_
2. How the electric meter works . . . . . \_\_\_\_\_
3. Safety rules in working with electric appliances . . . . . \_\_\_\_\_
4. How to identify different kinds of metals . . . . . \_\_\_\_\_
5. How to identify different kinds of wood . . . . . \_\_\_\_\_
6. Kinds of finish in common use such as stain, oil, wax, shellac, varnish, enamel, and paint. . . . . \_\_\_\_\_
7. Types of locks and where used. . . . . \_\_\_\_\_
8. How to paper a room to make it look larger or smaller. . . . . \_\_\_\_\_
9. The principles of refrigeration. . . . . \_\_\_\_\_
10. How to light a gas stove safely. . . . . \_\_\_\_\_
11. How to sharpen knives. . . . . \_\_\_\_\_
12. How to hang pictures . . . . . \_\_\_\_\_
13. The proper care of appliances made from different kinds of materials. . . . . \_\_\_\_\_

The above list of jobs represent the criteria upon which Brown based his proposals for a course of instruction for girls. After realizing the practicability of these jobs the writer is of the opinion that they would be suitable for a course of instruction for boys as well as girls.

Conclusion. In this chapter the writer has presented the available similar studies. The methods employed by these studies have been outlined and explained. In many instances the uses for the knowledge gained from other studies have been indicated by the writer's own opinion. Before considering the proposed course content, an effort will be made to present the writer's findings, according to the results of the survey.

## CHAPTER V

### A SURVEY TO DETERMINE WHAT SHOULD BE TAUGHT IN A HOME MECHANICS COURSE IN THE SEPARATE SCHOOLS OF OKLAHOMA

Before a course of instruction could be planned for the separate junior high schools, it was necessary to obtain certain information from the home of the type that would represent the jobs done by the individual who would benefit from such a course. This information was obtained through the use of a survey chart. A three page survey chart was prepared and mimeographed.

Selection of Type Survey. The two types of survey that the writer used were: first, the direct fact-finding survey, and second an assembling of home mechanics courses already published, from which a special course content could be extracted as desired. The writer used this combination type of survey.

Direct Fact-Finding Survey. This survey was used to; (1) determine if the jobs used in the survey were common in the community and within the home, (2) determine if there were additional jobs.

For selecting the type of direct fact-finding survey to be used the following criteria were applied: (1) speed, (rapidity with which data could be secured), (2) reliabili-

bility, (3) possibility (as determined by general conclusions), (4) working limitations.

For selecting the most desirable method for the survey the writer selected the following criteria: (1) ease of operation, (2) speed of operation, (3) uniformity of form in which data would be obtained.<sup>1</sup>

Selected Course Content From Already Published Home Mechanics Courses. The general procedures which may be used in selecting subject matter for course content is indicated by the following statements: (1) the knowledge and experience gained by others should always prove helpful to one who plans to follow a similar line of work, (2) every job and every lesson to be taught should be taken from the shop note books of experienced teachers.

In developing criteria for selecting course content, the curriculum maker should check various methods against the standard and intelligently select the best material to use. Hopkins<sup>2</sup> cites the following criteria for selecting course content:

1. That material has come from an extensive examination of possible subject matter that may be utilized in a course in home mechanics.
2. That material which will best meet the needs of individuals and the community.

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<sup>1</sup>Sidney F. Garnand, "A Study of Procedures in Establishing A Home Mechanics Course for Town the Type of Garden City Kansas," pages 9-11.

<sup>2</sup>L. T. Hopkins, Curriculum Principles and Practices, page 256.

Methods of Obtaining Information. The methods used for obtaining information were: (1) Homogeneous Grouping Method. This method was used to get a group of individuals assembled at one time, who were of the same social and economic status. After making this survey, the writer found that this was probably the most undesirable type of survey because of its unreliability. In making this survey, the president of the Parent-Teachers' Association of Carver Junior High School, in Tulsa was contacted. This resulted in an opportunity for the writer to explain to a group, the purpose of the survey, and to help individuals to attempt to find solutions for their problems.

One of the problems with which the writer was confronted was the fact that many of the individuals showed indifference to filling out the questionnaire. This was probably due to the lack of understanding on the part of some and because the limited time did not give the writer a chance to make individual explanations. A similar survey was made of the Jolly Thirty Club, a civic organization, and again some of the same problems were experienced. (2) Visitation Method. In this method an attempt was made to interview some of the individuals in their homes. After approximately sixty homes were visited, this method was discontinued, because it was time consuming. This does not indicate that the personal visits were not of some use. They served as sources of information from which many ideas were gathered. (3) State-



ments by Skilled Tradesmen. As the survey progressed, it became necessary to obtain the services of skilled workmen who, through choice, had specialized in these various jobs. This method proved very beneficial in that these people were familiar with the jobs commonly done in the home; and it required less time in determining what may be incorporated in a course in home mechanics.

The Questionnaire. Before attempting to develop a questionnaire form for this survey, the questionnaires of two similar surveys, namely one of the University of Iowa Studies by Schultz,<sup>3</sup> another of the Colorado Agricultural College by Garnand,<sup>4</sup> were examined for possible assistance and suggestions. An attempt was made in these studies to find the practical jobs that are done about the house and premises. The writer is indebted to the persons who conducted these surveys for some of the ideas used in the construction of the questionnaire form used in this study. The form was divided into ten major units as follows: (1) plumbing, (2) heating, (3) painting and finishing, (4) building repairs, (5) electrical repair, (6) household repair, (7) cleaning, (8) automobile, (9) yard work, (10) miscellaneous. Each of these divisions was broken up into jobs which resulted in

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<sup>3</sup>Schultz, The Place of Home Mechanics in the Junior High School Curriculum.

<sup>4</sup>Garnand, "A Study of Procedures in Establishing a Home Mechanics Course for Town the Type of Garden City Kansas,"

thirty-nine practical jobs of a mechanical nature. These thirty-nine jobs were selected because they would meet the criteria listed below:

1. They were practical and adaptable to shop instruction.
2. They had high ranking in former surveys.
3. They were known to be performed in a number of homes.
4. They were inserted to obtain additional information concerning their actual performance within the home.

Analysis of Items in Chart. To determine if these jobs were common in the community and within the homes and if there were additional jobs, the material was placed into a chart which was distributed to the participants of the survey. A place was provided for one check-mark for each job as performed by the members of the family. The individuals were asked to check the jobs as they had been performed. The arrangement on the chart was to promote accuracy and convenience for tabulation and clearness of explanation. Individuals were not asked to sign their names to the charts. A sample of the chart will be found in appendix B. This chart was used to indicate the jobs which were considered as most important by the participants of the survey. The participants were skilled tradesmen who were considered as

experts in their trade and members of the home.

Survey of Carver Junior High School. In the beginning of this study it was planned to obtain courses of instruction from as many schools as possible that were offering home mechanics to Negro students. A thorough search was made of the various Negro schools without favorable results. The writer believing there must be some schools or school offering work of this type later found through source of the Tulsa Board of Education that Carver Junior High School was the only school in the State of Oklahoma offering this type of work. After being convinced of the findings, the writer made contact with the instructor of home mechanics in this school. This instructor presented the following course of study which was used in this school:

#### Home Mechanics

Home mechanics has become a well established course in the junior high schools. Educators recognize the importance of training boys and girls to cope with the problems that center around the use of the products of the machine age. Home mechanics courses develop elementary skills in and information about maintenance and operation of mechanical devices in the modern home and community. Emphasis is placed on safety in the home, on making minor repairs and

adjustments, and on employing the services of skilled labor for extensive installations or repair jobs where the services of an expert are needed.

The instructional content should be closely related to the problems of modern life in the home and the community. All processes and elementary skills should be given a practical application through useful projects and related learning experiences. Girls as well as boys should be permitted to work with types of tools and materials that will enable them to meet intelligently the many mechanical problems that arise in the modern home.

#### SUGGESTED JOBS - OTHERS TO BE ADDED

- I. Wood Area - Furniture repair, refinishing and upholstery
  1. Repair broken furniture
  2. Refinish furniture
  3. Upholster or repair upholstered piece
  4. Re-glue loose veneer
  5. Re-glue chair rails or stretchers
  6. Make new part for furniture piece
  7. Calk a window
  8. Replace a pane of glass
  9. Patch a screen
  10. Install a hinge
  11. Install a turnbuckle
  12. Use of common woodwork hand tools
  13. Repair window and door screens

14. Cleaning paint and varnish brushes
15. Applying paint, varnish and enamel
16. The care of floors and upkeep
17. Plaster patching
18. The care of linoleum

## II. Metal Area

1. Sharpening knives and garden tools
2. Use of common metalworking tools
3. Tightening and sharpening scissors
4. Soldering
5. Cutting metal and pipe
6. Threading pipe
7. Replace a fuller ball
8. Replace washer in a compression faucet
9. Cleaning drains and traps
10. Cleaning and adjusting a flush tank
11. Reading the gas meter
12. Checking the gas stove
13. Cleaning and polishing brass and copper
14. The hot water system
15. Care and upkeep of plumbing
16. Make a metal brace
17. Etc.

## III. Electrical Area

1. Electricity and its use in the home
2. Testing for a defective fuse and installing a new fuse

3. Making an extension or heating cord
4. Repairing an appliance cord
5. Making a splice
6. Repairing or replacing a broken heating element
7. Reading an electric meter
8. Install wall plug or lamp
9. Install socket on cord
10. Safety rules in connection with the use of electricity
11. Minor radio checking
12. The electric iron
13. The vacuum sweeper
14. Lighting in the home
15. Electrical trouble-shooting

IV. Leather Area - Shoe repair and leather-craft

1. Use of common leather-working tools
2. Re-soleing operations common to all types of shoe construction
3. assembled operations necessary in repairing the most common type of shoes
4. Miscellaneous repairs
5. The care of shoes
6. Operation of shoe machinery
7. Design and make a key container
8. Design and make a purse
9. Lacing

## V. Power Machines and Transportation

1. Types of engines
2. A study of transportation
3. Repair of bicycle
4. Principles of internal combustion engine
5. Run 1½ h.p. gas engine
6. Oil and clean an electric motor

### COURSE OUTLINE

#### JOBS

##### I. Woodwork

1. To attach a corner plate, corner brace, and mending plate
2. To strengthen a joint with corrugated fasteners
3. To apply outside paint
4. To stain, fill, and varnish
5. Fastening device for wood
6. How to make a hot-pad holder
7. Using common woodwork hand tools
8. Care of paint brushes
9. Refinish a piece of furniture
10. Repair a broken piece of furniture
11. Refinish and repair a toy
12. Remove old varnish
13. Re-gluing loose joints in furniture
14. How to make a clothes stick
15. How to make a home rack

16. How to clinch a nail
17. How to drive a nail
18. How to set a finishing nail

#### Things to know about wood

Figuring lumber

Fastening devices for wood

Nails and Nailing

Preparation of wood for finishing

Screws

Kind of screws

Tools

## II. General

1. To replace a broken glass
2. To frame a picture
3. To tie some of the common useful knots
4. To read a water, gas, or electric meter
5. To attach hose coupling and hose menders to a garden hose
6. To install a hinge
7. To repair a door that sticks
8. What to do when the latch will not catch
9. How to install a screen door spring
10. How to shim a hinge
11. How to lubricate hinges
12. How to hang a door with butt hinges
13. How to install a hasp for a padlock



14. How to adjust a window that sticks
15. How to weatherstrip a window
16. How to mix putty
17. How to replace old putty
18. How to store screen and storm windows
19. How to sharpen a knife
20. How to sharpen and adjust shears
21. How to remove burr heads from tools
22. How to reinforce a handle with wire
23. How to fit a hammer handle to a hammer head
24. How to make a file handle
25. How to sharpen a hoe or spade
26. To cut glass
27. To cut and fit window screens
28. To patch holes in screen
29. To paint window screens
30. How to prevent a rope from untwisting
31. How to splice a rope
32. How to store garden tools
33. Outfitting the home workshop
34. How to remove rust from tools
35. Replacing handles in garden tools

### III. Sheet Metal

1. To tin a soldering copper
2. To mend a hole in a piece of sheet metal
3. To make a sugar scoop from a tin can
4. To make a cookie cutter from tin plate

5. To make a key tag
6. To solder a butt seam
7. To solder a lap seam

#### Bench Metal

1. To replace a broken spring in a mortise lock
2. To make a metal corner brace
3. To drill and tap hole for stove bolts
4. How to sharpen a knife
5. How to sharpen and adjust shears
6. How to fit a handle in a hammer or axe
7. How to reinforce a handle with wire
8. How to remove burred heads from tools
9. Safety in the use of tools

#### IV. Plumbing

1. To recognize and re-washer a leaking compression faucet
2. Put a new Fuller Ball in a Fuller faucet
3. To cut and thread a piece of pipe
4. To assemble pipe fittings commonly found in the home
5. To re-washer and re-seat a ball cock of a closet tank
6. Turning off water
7. How to clean a drain-trap
8. How to insulate water pipe

#### V. Electricity

1. To make an electro-magnet

2. To make an end splice and a tap splice
3. To wire up one door bell, one push button, and one dry cell
4. To replace and refill a burned out fuse
5. To assemble an attachment cord of an electrical appliance
6. Install an electric light socket
7. Install a wall plug
8. How to make a chart for the fuse box
9. Safety in the home, rules, etc.

#### VI. Jobs at Home

1. Washing the automobile
2. Remove tire from rim
3. Checking tires for nails, etc.
4. Repairing an innertube
5. Clean an oil lamp, an electric fan, or motor
6. Care of other electrical appliances in the home: washing machine, vacuum cleaner, sewing machines, etc.
7. Cleaning and waxing floors
8. Hanging window shades
9. How to use casein paint
10. How to repair a damaged finish
11. How to mix a can of paint
12. How to tint paint
13. How to paint a plastered wall
14. How to patch a hole in plastered walls

Suggested reference books are included for each of the following items:

#### GENERAL SHOP

##### AREA 1: Electricity in the house

###### Job 1. Hooking up doorbell and buzzer

###### References:

Dragoo and Dragoo, General Shop Electricity, pages 13-16

E. W. Jones, General Electricity, pages 5-7

###### Job 2. Testing for a defective fuse and installing a new fuse

###### References:

J. C. Woodin, Home Mechanics, pages 54-55

Dragoo and Dragoo, General Shop Electricity, pages 35-36

###### Job 3. Make an extension or heating cord or bring a cord from home and repair

###### References:

Dragoo and Dragoo, General Shop Electricity, pages 44-46

Woodin, Home Mechanics, pages 62-66

###### Job 4. Read an electric meter

###### References:

Bedell and Gardner, Household Mechanics, pages 111-112

###### Job 5. Attach wire to a binding post

###### References:

Dragoo and Dragoo, General Shop Electricity, pages 22-23

###### Job 6. Install an electric light socket

References: Woodin, Home Mechanics, page 65

Job 7. Connect dry cell batteries in parallel and series

References: Dragoo and Dragoo, General Shop Electricity, pages 25-28

Job 8. Wire a bell circuit so that one button will ring a bell and another will ring a buzzer, both using the same battery

References: Bedell and Gardner, Household Mechanics, pages 120-121

Job 9. Study the construction of the electric iron and become familiar with its several parts

References: Woodin, Home Mechanics, pages 71-73

Job 10. Bring an electric appliance from home and repair

NOTE: Students will be expected to complete eight (8) jobs from the above list by the end of the fourth week.

PROJECTS: Simple switch

Simple coil buzzer

Lamp

## AREA II: Shoe repairing and leathercraft

Job 1. Remove old soles from shoes and prepare for half-soleing

References: Krag, Shoe Repairing, pages 35-46

Job 2. Attach new soles to shoes and finish

References: Krag, Shoe Repairing, pages 46-56

Job 3. Remove old heel from shoes and replace with new heel

References: Krag, Shoe Repairing, pages 73-84

Job 4. Patch rip in uppers

Reference: Krag, Shoe Repairing, pages 80-89

Job 5. Make designs for a project to be made in leathercraft

Reference: Cherry, General Leathercraft, pages 21-22

Job 6. Transfer designs to leather

Reference: Cherry, General Leathercraft, page 24

Job 7. Do edge lacing using the double buttonhole stitch

Reference: Cherry, General Leathercraft, page 45

NOTE: Students will work in only one phase of leather, shoe repair, or leathercraft. The job will be completed at the end of the fourth week.

PROJECT: Car key case

Book mark

Coin purse

Key case

Belt

One-fold billfold

Ladies purse

### AREA III: Wood and Plastic

Job 1. Make a bill of material for a project and work problems on board measure.

Reference: Frylund and LaBerge, General Shop Woodworking, pages 89-91

Job 2. Repair broken furniture

Reference: Bedell and Gardner, Household Mechanics, pages 80-83

Job 3. Clean and care of paint and varnish brushes.

Reference: Woodin, Home Mechanics, pages 24-26

Job 4. Refinish a piece of furniture.

Reference: Woodin, Home Mechanics, pages 21-23

Job 5. Recover and upholster a piece of furniture

Reference: Woodin, Home Mechanics, pages 29-33

Job 6. Apply wood filler.

Reference: Woodin, Home Mechanics, Pages 29-33

Job 7. Bore holes with the auger bit and brace

Reference: Frylund and LaBerge, General Shop Wood-working, pages 28-32

Job.8. Drive and draw nails

Reference: Frylund and LaBerge, General Shop Wood-working, pages 33-35

Job 9. Fasten screws with screw driver

Reference: Frylund and LaBerge, General Shop Wood-working, pages 35-38

Job 10. Repair window or door screen

Reference: Woodin, Home Mechanics, pages 41-44

Job 11. Repair door lock

Reference: Woodin, Home Mechanics, pages 44-46

NOTE: Student will complete six (6) of the above jobs.

PROJECTS: Book ends

Magazine racks

Shelves

Letter holders

Salt and pepper shakers

#### AREA IV. Metal

Job 1. Clean gas burner

Reference: Woodin, Home Mechanics, pages 80-81

Job 2. Repair a leaky pipe

Reference: Bedell and Gardner, Household Mechanics, pages 126-127

Job 3. Thaw out frozen pipe

Reference: Bedell and Gardner, Household Mechanics, page 127

Job 4. Assemble pipe fittings

Reference: Bedell and Gardner, Household Mechanics, pages 127-130

Job 5. Re-washer a leaking compression faucet

Reference: Bedell and Gardner, Household Mechanics, pages 131-133

Job 6. Replace a compression faucet

Reference: Bedell and Gardner, Household Mechanics, pages 133-134

Job 7. Clean lavatory trap

Reference: Woodin, Home Mechanics, pages 82-84

Job 8. Sharpen and adjust a pair of household shears

Reference: Bedell and Gardner, Household Mechanics, pages 216-217

Job 9. Sharpen a knife

Reference: Bedell and Gardner, Household Mechanics, pages 211-212

Job 10. Cut and thread a piece of pipe

Reference: Smith, Bench Metal Work, pages 39-40

Job 11. Drill and tap hole for stove bolt

Reference: Smith, Bench Metal Work, pages 35-37

NOTE: Student will complete eight (8) of the above jobs.

PROJECTS: Cookie cutter

Sugar brace



Industrial Arts  
Carver Junior High

PLAN OF PROCEDURE

Project or Job \_\_\_\_\_ Cost \_\_\_\_\_

Date started \_\_\_\_\_ Date Finished \_\_\_\_\_ Evaluation \_\_\_\_\_

Materials Required:

Tools Required:

Read carefully and study the directions for performing all the operations with which you are not familiar.

List the steps in the order in which you perform them in making the project or doing the job.

Procedure:	Sketch or Drawing
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
11.	
12.	
Student _____	Instructor _____

The preceding course of instruction was obtained during the time of the survey of Carver Junior High School. The type of survey used in this investigation was of note-taking form. The information was gathered from a tour of the shop with the instructor, who explained in detail all of the various "areas" of the shop. According to George Homer, instructor of home mechanics at Carver Junior High School, the beginning of a course which he called the general shop was the original idea provided by the supervisor of Industrial Arts and Vocational Education of Tulsa Public Schools, to develop a new field for students of Carver Junior High School. The task of beginning a curriculum in a new field proved to be a difficult one. In the first place, the selection of an instructor had to be made, and there was no available instructor with sufficient knowledge of a program of this type. Then with some consideration of the problem, the supervisor selected George Homer, who at the time was woodwork instructor in a general unit shop at Carver. The curriculum was formed through the decision of Mr. M. J. Raley, supervisor of Industrial Arts and Vocational Education of the Tulsa Public Schools, and the principal of Carver Junior High School, Mr. Whitlow. A course of instruction was developed to meet the needs of this program.

In this chapter the two types of surveys that the writer used were presented and explained. Three methods of obtaining the information were discussed, the chart used in the survey was presented and an analysis of the items that

appeared on the chart was explained. The complete course of instruction used at Carver Junior High School, which was found to be the only program of this nature in the State of Oklahoma, was outlined and presented. In Chapter VI the criteria used to determine the selection of instruction sheets for a proposed curriculum in home mechanics for Negroes in the Junior High Schools of Oklahoma will be presented, an effort will be made by the writer to explain this procedure.

## CHAPTER VI

### COURSE MATERIAL FOR GENERAL SHOP

Before going further with this study, two questions will be answered in order that the purpose of this chapter might be more clear to the reader. First, what is a course of instruction and second, how is a course of instruction made?

The Nature of a Course of Instruction. The answer to the question; What is a course of instruction? Bollinger and Weaver<sup>1</sup> stated that the purpose and importance of a course of instruction to a teacher is comparable to a set of blue-prints and specifications to the building contractor, or a dress pattern to a dressmaker. The definition is as follows:

The course of instruction is the plan or program which guides the teacher in producing a product in keeping with the purpose of the work. The plan of a proposed building describes the building in terms of materials, measurements, shapes, and arrangements.

In teaching, the plan is usually expressed in terms of the things to be taught, that is, in terms of the things which the learner will do (operations) and the ideas which he will be expected to acquire (trade information), all as-

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<sup>1</sup>Bollinger and Weaver, Occupational Instruction, page 31.

sociated with appropriate jobs typical of the trade.

Development of the Course of Instruction. In answering the question; How is a course of instruction made? One must take into consideration that courses of instruction are made in several ways. One method in common practice is for specialists and teachers to collect available courses of instruction and after a complete analysis of them, form from these, a course of instruction most applicable to the existing conditions of a particular school. Sometimes the supervisor of the course makes the course of instruction. A much better method is found to be one where, under a skillful supervisor, the making of a course of instruction will eventually become the responsibility and privilege of the teacher. The latter can be expected to have the expert knowledge of the proper sources of subject matter and its possibilities in application to the interests and life of the students to be served. Probably one of the most desirable plans for course of instruction making is for all the teachers of like subjects and grades, with the aid of the supervisor to construct a course of instruction suited to the needs of a particular school or locality.

It is the common practice of a curriculum committee to decide the activities and experience necessary to achieve certain educational objectives. Since the writer was not able to work with a group to determine what should be taught in the Proposed Home Mechanics Instruction Course

for Negroes he was forced to use the survey chart explained in a previous chapter and to determine the subject content. Then he gathered the course of instruction already decided upon by the instructor and supervisor of industrial arts in the Tulsa Public Schools, and with this, chose those jobs that would correspond with the jobs selected from the survey to establish a proposed curriculum.

What Should be Taught as Determined by the Survey. The following list of jobs in Table II which is entitled, "A LIST OF JOBS SELECTED BY THE WRITER TO BE CHECKED BY THE MEMBERS OF THE HOME," was taken from the survey chart entitled, "SURVEY FOR THE JUNIOR HIGH SCHOOL HOME MECHANICS IN THE SEPARATE SCHOOLS OF OKLAHOMA."

The jobs in Table II are ranked according to the number of times they occurred. The larger number of persons checking the same job determining the ranking. In some instances jobs were indicated by the participant writing in the space to be checked, using such terms as "many times" or "several times." These jobs are not included as instructional material.

The jobs were selected because they had a high frequency rating and due to the fact that they were adapted to shop instruction, are proposed to be taught in the home mechanics course for Negroes. They are indicated by asterisks as follows:

TABLE II

A LIST OF JOBS SELECTED AND PLACED IN THE CHART BY THE WRITER TO BE CHECKED BY THE MEMBERS OF THE HOME

Job	Frequency
*1. Clean and polish furniture . . . . .	125
2. Clean and wax floors. . . . .	111
*3. Wash and polish car. . . . .	98
4. Grease car. . . . .	69
*5. Repair faucet . . . . .	67
6. Clean wallpaper . . . . .	65
*7. Replace fuse in switch box. . . . .	63
8. Repair puncture . . . . .	51
*9. Repair electric iron. . . . .	47
*10. Repair flush tank . . . . .	46
*11. Sharpen household tools . . . . .	42
12. Clean clogged drain pipe. . . . .	37
*13. Wire socket and plug. . . . .	37
*14. Clean and care for paint brushes. . . . .	36
*15. Put knob or pull to drawer. . . . .	32
16. Test and clean spark plugs. . . . .	27
*17. Sharpen garden tools. . . . .	32
18. Clean out traps in sink and floor drains. . . . .	22
19. Regulate mixer or gas burner. . . . .	22
20. Repair leaky roof . . . . .	20
21. Make door open and close easily . . . . .	20
22. Thaw frozen pipes . . . . .	20
23. Repair window screens . . . . .	18
24. Hang wallpaper. . . . .	16
*25. Care for tools to prevent rust. . . . .	16
26. Clean heater and/or range . . . . .	15
27. Outside paint building. . . . .	14
28. Repair garden hose. . . . .	14
*29. Solder kitchen utensils . . . . .	14
*30. Refinish furniture. . . . .	12
31. Repair crack in plastered wall. . . . .	11
32. Care for house furnace. . . . .	10
*33. Making an angle iron. . . . .	9
34. Repair furniture . . . . .	7
*35. Making a key tag . . . . .	6
36. Weather stripping windows and doors . . . . .	6
*37. Read electric meter . . . . .	5

Jobs Placed in the Chart by Members of the Home. The jobs listed in Table III are titled, "JOBS THAT WERE NOT ALREADY LISTED IN THE CHART, BUT OCCURRED IN THE HOME AND PLACED IN THE CHART BY THE MEMBERS OF THE HOME." The jobs in this table appeared less frequently on the chart than those in Table II and were considered the least important of all the jobs listed in the entire study. These jobs, if used, would have to be divided into smaller units of operation, since there are jobs appearing in an additional list already divided into the same operations, giving reason to eliminate them from the final course outline.

TABLE III

JOBS THAT WERE NOT ALREADY LISTED IN THE CHART, BUT OCCURRED  
IN THE HOMES AND PLACED IN THE CHART BY  
THE MEMBERS OF THE HOME

- 
1. Install automatic washer
  2. Install automatic hot water heater
  3. Replace bathroom heater (wall type)
  4. Cut roots from outside pipes
  5. Replace faucet
  6. Repair floor furnace
  7. Replace heater for hot water tank
  8. Repaint kitchen sink
  9. Paint kitchen and bath
  10. Paint and decorate interiors
  11. Paint the garage
  12. Paint walls
  13. Polish floors
  14. Sand floors
  15. Put on siding
  16. Build new porch
  17. Repair electric cords
  18. Repair electrical shorts
  19. Repair wood around sink
  20. Put arm on chair
  21. Put rubber tips on chair



TABLE III (continued)

JOBS THAT WERE NOT ALREADY LISTED IN THE CHART, BUT OCCURRED  
IN THE HOMES AND PLACED IN THE CHART BY  
THE MEMBERS OF THE HOME

- 
- 22. Clean venetian blinds
  - 23. Pruning shrubbery
  - 24. Clean lawnmower
  - 25. Replace wall switch
- 

Jobs Selected by Skilled Tradesmen. The following Table IV was used to indicate the jobs which did not appear in other tables and which were ranked as most important by skilled men, who were considered to be experts in their trades. The jobs selected to be included in the material to be taught are replaced by jobs in Table II that were not adapted to shop instruction. Those jobs selected are indicated by asterisks.

TABLE IV

JOBS THAT WERE NOT LISTED IN THE CHART, BUT OCCURRED IN THE  
HOME AND PLACED IN THE CHART BY SKILLED TRADESMEN

---

Carpenter:

- \*1. Drive and draw nails
- \*2. Saw to a line
- \*3. Fasten with screws
- 4. Cut and set glass
- 5. True up a door that sags or binds
- 6. Adjust a window-sash that binds

TABLE IV (continued)

JOBS THAT WERE NOT LISTED IN THE CHART, BUT OCCURRED IN THE HOME AND PLACED IN THE CHART BY SKILLED TRADESMEN

---

Electrician:

- \*1. Install electric bells

Plumber:

- 1. Regulate the mixer on a gas-burner
- 2. Remove stoppages in pipes

Plasterer:

- \*1. Mix and pour concrete
- \*2. Finish concrete surfaces

Furniture Repairman:

- \* 1. Prepare and use glue
- \*2. Tighten loose joints in a chair or other furniture
- 3. Reseat chairs
- 4. Repair upholstery
- \*5. Remove old finish from furniture

Painter; Interior Decorator Finishing:

- \*1. Apply paint on old and new surfaces
  - 2. Apply varnish and enamel in home decoration
- 

Jobs Selected from Magazines and Periodicals. The jobs found in Table V are those jobs which did not appear in the other tables and were listed under the title, "JOBS

THAT WERE NOT LISTED IN THE CHART, BUT OCCURRED IN THE HOME AS TAKEN FROM MAGAZINES, PERIODICALS, AND OTHER LITERATURE."

These jobs were used to replace jobs taken from Table III due to unsuitability for shop instruction. The items selected for this list are indicated by asterisks.

TABLE V

JOBS THAT WERE NOT LISTED IN THE CHART, BUT OCCURRED IN THE HOME AS TAKEN FROM MAGAZINES, PERIODICALS, AND OTHER LITERATURE

- 
- 
- \*1. Sharpen a garden hoe or shovel
  - \*2. Sharpen a plane bit or chisel
  - 3. Sharpen a hand sickle
  - 4. Adjust a lawn mower
  - 5. Trim with a cold chisel
  - \*6. Drill holes
  - \*7. Bore holes with an auger bit
  - 8. Draw file and cross file
  - 9. Put hangers in plastered walls, without breaking plaster
  - \*10. Fit a key to a lock
  - 11. Adjust and repair rim-lock or mortise lock
  - \*12. Fit a tool-handle
  - 13. Attach casters and glides
  - 14. Paint pipes and radiators
  - \*15. Renew carbon brushes in a small motor
  - \*16. Solder
  - 17. Replace sash-cord and weights
  - 18. Repair and hang window-shades
  - \*19. Wrap and tie packages properly
  - \*20. Tie Boy Scout tenderfoot knots
  - \*21. Read working-drawings
  - 22. Put up a clothes-line
  - 23. Fit and lay linoleum
- 
- 

Information That Should be Taught Based on the Findings of the Investigation. An intensive analysis of all the data

summarized in the survey charts, magazine articles, and opinions of the skilled tradesmen, indicates that the following subjects and jobs should be taught:

---

#### TENTATIVE COURSE OUTLINE

---

##### I. Jobs in woodwork area

1. Drive and draw nails
2. Fasten with screws
3. Saw to a line
4. Bore holes with an auger bit
5. Draw file and cross file
6. Prepare and use glue
7. Put new wire on screen frames
8. Fit a tool-handle
9. Tighten loose joints in a chair or other furniture
10. Repair furniture with corner fences and mending plates
11. Put knobs or puller on drawers
12. Attach caster and glides
13. Re-seat chairs
14. True up a door that sags or binds
15. Adjust a window sash that binds
16. Replace sash cord and weights

##### II. General

1. Shape a screw
2. Sharpen a knife
3. Sharpen scissors and shears
4. Sharpen a garden hoe or shovel
5. Sharpen a hand-sickle
6. Sharpen a plane bit or chisel
7. Adjust a lawn mower
8. Trim with a cold chisel
9. Drill holes
10. Put hangers in plastered wall
11. Repair holes in plastered walls
12. Cut and set glass
13. Fit a key to a lock
14. Adjust and repair in lock or mortise lock
15. Set or adjust butt hinges
16. Repair upholstering
17. Repair and hang window shades
18. Wrap and tie packages properly
19. Tie Boy Scouts tenderfoot knots
20. Read working-drawings
21. Make a key tag
22. Make an angle iron

23. Mix and pour concrete
24. Finish concrete surface
25. Care for a house furnace
26. Care for tools to prevent rust
27. Put up a clothes-line
28. Fit and lay linoleum

### III. Electrical

1. Splice wire
2. Install electric bells
3. Replace carbon brushes in a small motor
4. Replace fuses
5. Wire a socket and plug
6. Read an electric meter

### IV. Painting and Refinishing

1. Remove old finish from furniture
2. Refinish furniture
3. Clean and refinish floors
4. Apply paint on old and new surfaces
5. Apply varnish and enamel in home decoration
6. Paint pipes and radiation
7. Clean and care for paint brushes

### V. Plumbing

1. Read gas meter
2. Regulate the mixer on a gas-burner
3. Repair faucets
4. Solder
5. Repair flush-tanks
6. Clean out traps in sink and floor-drain
7. Remove stoppage in pipes

Final List of Jobs in all work Areas. This final list of jobs represents what the writer believes students in the separate schools should be able to do. The inclusion of the material contained herein is based on subjective thinking and on the findings in the surveys. The following is a proposed course of instruction for use in a Home Mechanics Instruction Course for Students in the Separate Schools of

Oklahoma, one semester in length and consisting of thirty-seven lessons to be arranged in an effective instructional order by the teacher.

I. Jobs in all Work Areas

1. Clean and polish furniture
2. Wash and polish car
3. Repair faucet
4. Replace fuse in switch box
5. Repair electric iron
6. Repair flush tank
7. Sharpen household tools
8. Wire socket and plug
9. Clean and care for paint brushes
10. Put knob or pull to drawer
11. Sharpen garden tools
12. Care for tools to prevent rust
13. Solder kitchen utensils
14. Refinish furniture
15. Make an angle iron
16. Make a key tag
17. Read electric meter
18. Drive and draw nails
19. Saw to a line
20. Fasten with screws
21. Install electric bells
22. Mix and pour concrete
23. Finish concrete surfaces
24. Prepare and use glue
25. Make a book rack
26. Remove old finish from furniture
27. Apply paint on old and new surfaces
28. Sharpen a garden hoe or shovel
29. Sharpen a plane bit or chisel
30. Drill holes
31. Bore holes with an auger bit
32. Fit a key to a lock
33. Fit a tool-handle
34. Replace carbon brushes in a small motor
35. Wrap and tie packages properly
36. Tie Boy Scout tenderfoot knots
37. Read working-drawings

The groups of instructional material just listed do not make a course of instruction in its complete form, but it is a course outline arranged in a possible order of pre-

sentation. There remains for the teachers using the outline the task of selecting their own methods and instructional devices and the task of selecting or making instruction sheets.

Suggested Instructional Material. At present there is no book or set of job sheets available including all the work contained in the final course outline. It is apparent that job sheets must either be selected from existing commercial sets of job sheets or be made for the jobs proposed. In order to guide the beginning teacher in making job sheets or select them for use in this course, five typical job sheets are reproduced in this study. The jobs for which instruction sheets are included, are with two exceptions, those jobs ranking highest in the survey chart, and jobs obtained from results of a search in the field.

Making a book rack was included in the place of tightening joints in a chair because the latter job will be performed in making a book rack. The final list of job sheets suggested includes the following:

	Area
1. Tighten loose joints in a chair or furniture	I
2. Sharpen a knife	II
3. Splice wire	III
4. Apply paint on old and new surface	IV
5. Repair faucet	V

## JOB SHEET

By Bedell and Gardner

Student's Name \_\_\_\_\_ Class \_\_\_\_\_

Name of School \_\_\_\_\_ Date Begun \_\_\_\_\_

---

TITLE JOB: Making a book rack.

When one takes a book from the library, he is under a very real obligation to return it in good condition. This is sometimes a difficult thing to do when there is no special place to keep the library book. However, a book rack can be made which will serve this purpose very well. If a little care is used, it can be made an attractive decoration for the room.

REFERENCE:Bedell and Gardner, Household Mechanics, pages 84-86.TOOLS AND MATERIALS:

Softwood, ordinary woodworking tools

PROCEDURE:

1. Finish the pieces to the size desired.
2. Lay out the design for the ends.
3. Saw the ends to shape.
4. Smooth the edges.  
    Note: If a carved design is used, the carving should be done at this point.
5. Lay out the stock for the bottom of the book rack.
6. Cut dado in bottom piece with a saw and 3/4" chisel.
7. Locate and drill holes for the screws.
8. Countersink holes in the bottom piece.
9. Drive the screws with a screwdriver.
10. The finish on the book rack may be of any type desired.

Date completed \_\_\_\_\_ Instructor's Grade \_\_\_\_\_



## JOB SHEET

By Bedell and Gardner

Student's Name \_\_\_\_\_ Class \_\_\_\_\_

Name of School \_\_\_\_\_ Date Begun \_\_\_\_\_

THE JOB: Sharpening a knife.

A sharp knife is a very handy article to have. Yet many people carry a dull knife. Kitchen knives seem to be dull most of the time. A dull knife is more dangerous to use than a sharp one because so much pressure is needed to make a dull knife cut, that it is likely to slip and cause a serious injury. The ordinary person can learn to sharpen a knife if he is willing to follow a few simple instructions very carefully.

REFERENCE:Bedell and Gardner, Household Mechanics, pages 105-106.TOOLS AND MATERIALS:

Grinder, oilstone and oil

PROCEDURE:

1. Inspect the blade to see what it needs.
2. Grind the blade.
3. Hone the blade on an oilstone.
4. Test the edge for sharpness.
5. Strop the edge on the smooth surface of a piece of leather.

Note: Be sure to use oil on the stone for it washes off the small particles of stone and metal, and keeps the stone clean.

Date completed \_\_\_\_\_ Instructor's Grade \_\_\_\_\_

## JOB SHEET

By Bedell and Gardner

Student's Name \_\_\_\_\_ Class \_\_\_\_\_

Name of School \_\_\_\_\_ Date Begun \_\_\_\_\_

THE JOB: Splice wire.

It is often necessary to splice the wires of an electrical circuit. An electrician uses just as few splices as possible. A splice must be tightly wound, and the ends cut close, because loose ends might cause a short circuit. It requires considerable practice to gain the skill necessary to make a good splice. Therefore, some practice in splicing insulated wire is necessary.

REFERENCE:Bedell and Gardner, Household Mechanics, pages 36-37.TOOLS AND MATERIALS:

Insulated electric wire, solder, rubber tape, friction tape, pliers, knife, and soldering equipment

PROCEDURE:

1. Peel the insulation from the wire.
2. Scrape the wire bright and clean.
3. Make the splices with five turns of the wire.
4. The Western Union splice is used for joining the ends of two wires in a line.
5. Solder the splices.
6. Tape the splices.

Date completed \_\_\_\_\_ Instructor's Grade \_\_\_\_\_

## JOB SHEET

By Bedell and Gardner

Student's Name \_\_\_\_\_ Class \_\_\_\_\_

Name of School \_\_\_\_\_ Date Begun \_\_\_\_\_

---

THE JOB: Apply paint on old and new surface.

The buildings at home often need repainting to brighten them, and to preserve the wood. They should be repainted every three or four years, or oftener if necessary. This is as important as the original painting.

REFERENCE:Bedell and Gardner, Household Mechanics, pages 92-93.TOOLS AND MATERIALS:

Ready mixed paint and turpentine for thinning, putty, shellac, rag, sandpaper and strong soap. The equipment should be the same as for a new job except that a stiff wire brush is needed for removing loose paint.

PROCEDURE:

1. Prepare the surface.
2. Mix the paint for the first coat thoroughly.
3. Apply the first coat over the old paint.  
Caution: The brush should be kept in a solution of linseed oil and turpentine while the first coat is drying. All oily rags should be picked up and burned.
4. Prepare the paint for the second coat.
5. Apply the second, and third coats.
6. Clean the brushes and care for the equipment.

Date completed \_\_\_\_\_ Instructor's Grade \_\_\_\_\_

## JOB SHEET

By Bedell and Gardner

Student's Name \_\_\_\_\_ Class \_\_\_\_\_

Name of School \_\_\_\_\_ Date Begun \_\_\_\_\_

THE JOB: Repair a leaking compression faucet.

Anyone who will make a careful study of the mechanism of a faucet will be able to stop its leaking. It will leak either through the nozzle or through the packing put around the valve stem.

REFERENCE:Bedell and Gardner, Household Mechanics, pages 92-93.TOOLS AND MATERIALS:

Screw driver, monkey wrench, small rubber for gaskets,  
and some cotton for packing

PROCEDURE:

1. Determine where the faucet leaks.
2. Shut off the water.
3. Remove valve stem.
4. Replace gaskets, packing, etc. Have work checked by instructor.
5. Assemble
6. Test. If handle operates with difficulty, loosen packing nut.

Note: Wrap all nickel parts with cloth before using a wrench.

Date Completed \_\_\_\_\_ Instructor's Grade \_\_\_\_\_

## CHAPTER VII

### CONCLUSIONS AND RECOMMENDATIONS

This study is based on a survey of homes owned by Negroes in Tulsa, Oklahoma. The information gathered from the homes which are occupied by Negro families has been used to propose a course of instruction for the Junior High Schools attended by the youth of these Negro families. It is intended that this proposed course of instruction would meet the needs by preparing students for available job opportunities as well as for college.

Before the returns of the survey were tabulated and the tentative course constructed, much time was spent studying the specific problems of home mechanics as proposed for the separate schools. These problems together with a history of the development of Industrial Arts Education in the Negro schools of higher learning in America and Oklahoma, are presented in the first part of this thesis. This is presented as a historical and an educational background of this work.

Conclusions Based on the Returns From the Survey. The incorporation of Home Mechanics in the separate schools for Negroes will be welcomed by parents of the youth of these schools in Oklahoma. Many people favor this program as long as it does not interfere with the work of the trades-

man who depends on his speciality for a living. The following comments and criticisms were made by tradesmen who cooperated in the survey. They were unsolicited.

1. "I think that all boys and girls should be taught to make minor repairs about the home, as it will give them an appreciation and respect of the cost of home maintenance."
2. "Practical work, as this study suggests, should be a part of the training of every person."
3. "I would have appreciated this course as a boy, and no doubt would have completed my high school education, but for my dislike of some of the academic subjects which I was required to take."
4. "I believe that every boy should become acquainted with those things he will participate in all his life."
5. "I think that some of the items are too specialized in nature to be taught in school. However, I think the idea is a splendid one and should be put into practice."
6. "I would like to suggest that a manual of these jobs be made available for those people who will not have the advantage of such a course."
7. "There are a number of items on the list it would be more satisfactory to replace than to repair."

These statements obtained from the survey substantiate a need for a course that will train the boy to do the many

repair jobs that accumulate about him.

It is evident from the previous favorable comments that people are interested in education of a practical nature and that the value of a course in home mechanics is fully appreciated. The following is further proof of these conclusions as based upon the actual findings in the survey.

1. The survey indicated that Negroes are interested in education of a practical nature and that they feel a course in home mechanics would be valuable to teach boys Industrial Arts.
2. The survey indicated that most Negro homes maintain their own minor repair program. It would appear then, that a course in home mechanics would be valuable in training a-vocational abilities.

The following points are based upon the personal opinion of the writer.

1. Home mechanics should develop fundamental knowledge in the use of tools and materials from the standpoint of non-specialized trade experience.
2. Home mechanics should provide intelligent selection, use, and care of the industrial products commonly found in the home.
3. Home mechanics should develop specific interests and aptitudes that may be important for the future life of the boy.
4. Home mechanics should provide intelligent appreciation and respect for industrial work.

5. Home mechanics should provide an outlet for leisure time activities.
6. Home mechanics should provide a medium for bringing the home and school into a more common understanding of the interest and problems of each other.
7. Home mechanics should help to solve the problem of providing additional activities for the small school where funds will not permit the introduction of the unit shop.
8. Home mechanics offers subject matter based upon true-to-life problems, a feature impossible often neglected in many of the other subjects of the curriculum.
9. Home mechanics meets a practical need at a relatively low cost.
10. Home mechanics teaches one to be informative as well as manipulative.

Recommendations for Schools. The instruction in Home Mechanics for Negroes which has resulted from this study is not claimed to include all that the Negro youth should be taught in a course of this type, but the writer feels confident in recommending the course to all schools where Industrial Arts is offered to Negroes. Realizing that there are certain fundamental requirements for any good shop project a number of items were taken into consideration in selecting each job. It must be interesting, must awaken new



interest along new mechanical lines, must challenge the boy's ability, should require fundamental tools and mechanic operations, must be inexpensive, should be timely, and it must be useful. The jobs in this course will fulfill these requirements.

## APPENDICES

- A. A SELECTED BIBLIOGRAPHY
- B. SHELVEY CHART

## APPENDIX A

## A SELECTED BIBLIOGRAPHY

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## APPENDIX B

## SURVEY CHART

Please Fill Out For Our Information

SURVEY FOR JUNIOR HIGH  
HOME MECHANICS IN THE  
SEPARATE SCHOOLS OF  
OKLAHOMA.

Members of Family Living at Home:

Husband \_\_\_\_\_ (indicate "Yes" or "No")

Wife \_\_\_\_\_ ( " " " " )

Boy \_\_\_\_\_  
Number \_\_\_\_\_ ages \_\_\_\_\_

Girl \_\_\_\_\_  
Number \_\_\_\_\_ ages \_\_\_\_\_

Fill out necessary space for jobs.<sup>2</sup>

Number of times jobs  
occur<sup>1</sup>

PLUMBING

1. Repair Faucet
2. Repair Flush Tank
3. Thaw Out Frozen Pipes
4. Clean a Clogged Drain Pipe
5. Clean Out Traps in Sink and Floor Drain

Space For Two More Plumbing Jobs

1. \_\_\_\_\_
2. \_\_\_\_\_

HEATING

1. Regulate Mixer or Gas Burner
2. Clean Out Heater and/or Range
3. Care for a House Furnace

Space For Two More Heating Jobs

1. \_\_\_\_\_
2. \_\_\_\_\_

PAINTING AND FINISHING

1. Outside Paint Building and House
2. Hang Wallpaper
3. Repair Crack in Plastered Wall
4. Refinish Furniture
5. Clean and Care for Paint Brushes

Space for Three More Painting and Finishing Jobs

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

<sup>1</sup>Indicate the number of times each job has occurred in your home in the last year.

<sup>2</sup>Place those jobs that occur in your home in the past year that are not already listed.



BUILDING REPAIRS

1. Repair Window Screen
2. Make Door Open and Close Easily
3. Repair leaky Roof
4. Weather Stripping Windows and Doors

5. Repair Brick Work

Space for Three More Building Repair Jobs

- 1.
- 2.
- 3.

ELECTRICAL REPAIR

1. Replace Fuse in Switch Box
2. Repair Electric Iron
3. Wire a Socket and Plug
4. Home Electric Seters

Space for Three More Electrical Jobs

- 1.
- 2.
- 3.

HOUSEHOLD REPAIRS

1. Solder Kitchen Utensils
2. Sharpen a Screw Driver
3. Sharpen Household Tools (Knives, Scissors etc.)
4. Put Knobs or Pulls to Drawers
5. Repair Furniture
6. Care for Tools to Prevent Rust

Space for Three More Repair Jobs

- 1.
- 2.
- 3.

CLEANING

1. Clean Wallpaper
2. Clean and Polish Furniture
3. Clean and Wax Floors

Space for Two More Cleaning Jobs

- 1.
- 2.

AUTOMOBILE

1. Grease Car
2. Repair Puncture
3. Test and Clean Spark plugs
4. Wash and Polish a car

Space for Three Additional Jobs

- 1.
- 2.
- 3.

YARD WORK	
1. Repair Garden Hose	
2. Sharpen Gardening Tools	
Space for Three More Yard Work Jobs	
1.	
2.	
3.	
MISCELLANEOUS	
1. Plan Procedure in Doing a Job	
2. Develop Habits of Observing How Jobs Are Done	
Space for two More Miscellaneous Jobs	
1.	
2.	

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