TO DETERMINE THE NEEDS OF THE COMMUNITY OF
HIGHLAND PARK FOR THE INDUSTRIAL ARTS

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TO DETERMINE THE NEEDS OF THE COMMUNITY OF
HIGHLAND PARK FOR THE INDUSTRIAL ARTS

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By

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CHAPTER I

INTRODUCTION

The Highland Park Independent School District is located in the northern section of Dallas, Texas. The school system consists of four elementary schools, one junior high school, and one senior high school. The average scholastic population of the entire school system for a five year period, beginning in 1943 and ending in 1948, is four thousand and eighty five.

The junior high school has a five year average scholastic population, beginning in 1943 and ending in 1948, of nine hundred and seventy five. The seventh, eighth, and ninth grades are included in the junior high school. The curriculum includes the following subjects: English, mathematics, science, foreign languages, social sciences, speech, physical education, art, home economics, music and the industrial arts. The industrial arts program of the junior high school includes both woodwork and metalwork, and is available to the eighth and ninth grade students.

The senior high school has a five year average scholastic population, beginning in 1943 and ending in 1948, of twelve hundred and ten. The tenth, eleventh, and twelfth grades are included in the senior high school. The curriculum includes the following subjects: English, mathematics,
history, science, foreign languages, social sciences, speech, physical education, safety, art, home economics, music and mechanical drawing.

The industrial arts program in the Highland Park schools has been in operation since 1936. Since the program is relatively new, it is still in the formative stage. At present, woodwork and metalwork are taught in the eighth and ninth grades. The mechanical drawing is taught in the tenth, eleventh, and twelfth grades.

The Problem

The desirability of an enlarged industrial arts program in the Highland Park Schools is questioned because the financial status of the residents is above average and because of the low percentage of industrial workers of the community.

The problem of this study is to determine to what extent the present industrial arts program of the Highland Park Schools of Dallas, Texas, serve the actual needs of the community. Emphasis will be placed upon the various interests of the junior high school and the senior high school boys and the interests of the parents of the boys. The industrial arts program will be analyzed to determine whether it should foster such interests as the pupils show to possess. The selection of this problem is due to an active concern over the high school boys' interests and the
manner in which our educational program has provided for them. It is within the scope of this problem to determine whether the industries located in a school district and the financial status of the parents does or should influence the industrial arts program of a community.

Limitations of the Study

The study is limited to an analysis of the industrial arts program in the junior high and the senior high school of the Highland Park Schools of Dallas.

Definition of Terms

Hobby is interpreted to mean the favorite sport, craft or exercise pursued in leisure time by a person.

Leisure time refers to vacant time which is free from employment and at one's own convenience.

Community needs refers to the educational needs of the community for a well rounded educational program.

Occupations refers to the principal business of one's life or a trade that one prefers to follow.

The term industrial arts is implied to mean any course of study that concerns itself with the teaching of crafts and mechanical drawing and to diffuse general knowledge concerning industry.

Sources of Data

The general background for the study was obtained from 462 questionnaires from junior high school and senior high
school boys and from one hundred questionnaires from the parents of some of the boys. An analysis was also made of books written by leading educators, professional magazines, and bulletins from the United States Office of Education.

The questionnaires sought general information concerning interest in certain courses, hobbies, leisure time and home membership, and how the industrial arts program has helped the individual.

Related Studies

Within recent years, schools of all kinds have begun to examine their programs with a critical eye to see if they are meeting the needs for which they were established, the needs of the students, and the needs of the community in which the school is located. This is being done in order to appraise the school program in all its phases and to determine what additions, if any, are necessary to the school curriculum.

The industrial arts seems to be much more easily measured than the usual purely academic subjects. One of the objectives of the industrial arts program is to teach or impart at least some skill. A survey of the graduates of any one school can determine some measure of the success or failure of the program. Such a survey of graduates is seldom made even though educators are generally agreed that they should be. Elmore Hayes, in 1941, made such a
study of the graduates of Technical High School of Dallas, Texas.\textsuperscript{1} Questionnaires were sent to the graduates of the school each year over a period of seven years. Information was sought regarding the work status of the graduate, satisfaction in work, the length of employment, and the attitude of the graduate toward the help his secondary vocational training had been to him on the job and in life activities. The results of the study showed that the graduates in a great many instances, had been employed in industry without any other training than their high school training and that they had been successful in their work. The conclusion was reached that the school’s program had met, fairly well, the aims for which it was established.

Gebhard Martin, in 1942, made a survey of the industrial arts program of three schools to evaluate the shops on the basis of pupil interest.\textsuperscript{2} Interests of the pupils were determined by the "Interest Index" prepared by the Progressive Education Association. Martin found that mechanical interests were far more popular among the three groups of industrial arts pupils than any other categories. Recreational and


scientific interests were also high. The conclusions reached were that unpopular subjects should be correlated with the industrial arts to motivate interests and that the students should be given every opportunity to build projects of his choice to help broaden his interest.

In 1947, William A. Brooks made a community survey to determine the need for an aircraft training program in the Fort Worth Vocational Education Program. He recommended the addition of aircraft training in the Fort Worth Technical High School. He contended that he was justified in his recommendation because of the fact that sixteen thousand people are employed in the aviation industry in Fort Worth.

In 1939, James Hodge made a community survey of Denton, Texas to determine community needs of commercial subjects. Questionnaires were sent to the employers of the different types of business located in Denton and to more than one thousand employees. A comparison was made of the data received and the Denton High School commercial curriculum. The results showed that some graduate students of the commercial department were lacking in the personalities

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required to satisfy selling demands, and that students need part time on-the-job training.

An extensive search was made for related studies to this problem. It was found that there is definitely a lack of materials on this subject. However, those related studies given above give emphasis to the problem under consideration and suggest additional factors for investigation.
CHAPTER II

INDUSTRIAL ARTS CLAIMS AND PROVEN ABILITIES

In order to determine the status of the industrial arts program of the Highland Park Independent Schools in meeting the needs of the community, it is necessary to study the history, philosophy and objectives of the industrial arts and determine what relationship, if any, the industrial arts have to general education.

History of the Industrial Arts

As far back as 2000 B.C. the Jews recognized the value of handwork. In their Talmud, the book of traditionary law of the Jews, was the commission to all fathers to send their youth to school one half day and teach them a trade in the other half. This motive is made clear in the Talmud by such statements as these;

As it is your duty to teach your son the law, teach him a trade. Disobedience to this ordinance exposes one to just contempt, for thereby the social conditions of all are endangered. He who does not have his son taught a trade prepares him to be a robber. He who applies himself to study alone is like him who has no God.1

Martin Luther (1483-1546) stood in dire protest against the education given in monastic and ecclesiastical schools. He looked upon a boy in a monastic school as being in prison.

1Charles A. Bennett, History of Manual and Industrial Education up to 1870, p. 15.
He contended that this was an absolute injury to the child. He believed they needed pleasure and recreation as much as they needed food and drink.

Luther advocated a school day of two hours so arranged that it would allow the older children and youth to carry on the ordinary economic duties of life uninterrupted. My opinion, said Luther, is that we must send the boys to school one or two hours a day, and have them learn a trade at home for the rest of the time. It is desirable that these occupations march side by side.\(^2\)

John Locke (1632-1704) ranked among the recognized educators of his time. Locke became the chief exponent of the idea that education should fit a boy for practical life, whether it be in a trade or a profession. His publication, *Some Thoughts Concerning Education*, was written as a series of letters to a friend who desired some advice concerning the education of his son. The fact that this friend was a nobleman and that the education recommended was intended for an English gentleman had considerable significance.\(^3\) In one of his letters of advice to his nobleman friend, Locke insisted, "and yet I cannot forbear to say, I would have him learn a trade, a manual trade; nay two or three, but one more particularly."\(^4\)

The first noted exponent of manual arts in education is Rousseau (1712-1778). He outlined a new system of education


\(^4\) John Locke, *Some Thoughts Concerning Education*, p. 177.
in which handwork in the trades and agriculture form a very definite part. In his publication, *Emile*, his imaginary child, he sets forth his ideas of education. Concerning the value of handwork he says:

Emile will learn more by one hour of manual labor than he will retain from a whole day's verbal instructions. It is necessary that he work like a peasant and think like a philosopher, lest he become as idle as a savage. The great secret of education is, to make the exercises of the body and the mind serve a relaxation to each other.  

Pestalozzi (1745-1827) and Herbart (1776-1841) were leaders of the new idea in education which was rising in Europe, namely, education handwork. It was thought that this new kind of education would do much to benefit society socially and economically. Pestalozzi, for instance, hoped to bring about moderation in class distinction.  

The direct heir to the educational ideas of Pestalozzi was Friedrich Froebel (1783-1827). It was he who took Pestalozzi's idea of organic growth and developed it into the doctrine of self activity which he made the very center of his educational theory. Self-activity, in Froebel's sense of the work, implies not merely that the learner shall do all himself, not merely that he will be benefitted only by what he himself does, but implies that at all times

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5 Bennett, *op. cit.*, pp. 77-82.
his whole self shall be active, that the activity should enlist his entire self in all the phases of being. The law of self-activity demands not activity alone, but all-sided activity of the whole being, the whole self.\(^7\)

Fellenburg's institution at Hofwyl, Switzerland, of the early nineteenth century probably influenced manual arts more than others. He organized a sound physical institution. On his farm he organized instruction in agriculture, trades, literary subjects, and normal training.

In the early part of the nineteenth century the manual labor movement began in the United States. Schools similar to Fellenburg's school at Hofwyl were established at various points of the Atlantic seacoast states. The aim of the schools was to help the student earn his way through school and learn a trade at the same time.

The mechanics institute movement was being fostered in England, Scotland and the United States along with the manual labor movement. The idea was to give mechanics some idea of the theories upon which they worked when in the shops.

The industrial arts, and arts and crafts movement appeared in the middle of the nineteenth century because of lack of design in industrial products. Builders began to realize the need for good design in commercial products. Competition and world trade demanded better design.

\(^7\)Friedrich Froebel, *Education of Man*, p. 11.
The technical school movement in the United States developed the mechanical schools of collegiate level. These schools were organized principally in the East. The Morrill Land Grant Act of 1862 brought about continued growth of the colleges in the west and mid-western states. The important thing about this movement is that the engineering schools provided shops and considered them valuable training for engineers.

The Sloyd movement began in Sweden in the 1870-1872 period. A sloyd was a man skilled in many ways. The Sloyd was introduced into the Swedish schools to help raise the moral standards of boys which had deteriorated with the advent of the factory system and decay of home sloyd. The sloyders developed their handwork through models. Educators believed this would 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.

The first manual training school in America was started in St. Louis by Calvin M. Woodward. He believed handwork should be taught every child regardless of his educational aims. For this belief he was considered the real father of manual training. However, when he established a school later in St. Louis, it was not established to give handwork as a part of cultural education. He could not have secured

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8 Friese, op cit., pp. 3-5.
funds for the school on such a basis. He followed the Russian procedure of an application of the theory of formal discipline to trade instruction.9

The Bradley Polytechnic Institute, Peoria, Illinois, established teacher training work in 1897 which made a great stride in the development of the industrial arts. The Bradley Polytechnic Institute was the first to develop teacher training work in the industrial arts on a large scale.

The vocational education movement in the United States also made a great stride in the development of the industrial arts. There was a widespread demand for vocational education by both industry and labor in the early twentieth century. A federal commission was appointed (1914) to study the needs and make a proposal for federal aid for vocational education. The commission and several associations for the development of vocational education brought about the Smith-Hughes Federal aid bill in 1917. The industrial arts have made a very steady progress since that time and now the industrial arts and vocational education are an integral part of almost every educational program.10

Philosophy of the Industrial Arts

The trend of the industrial arts program has been away

9Ibid., pp. 3-22. 10Ibid., pp. 3-22.
from specialized skills and recognizes individual differences. The trend is to correlate industrial arts as much as possible with other areas of the school. Correlation enables the fusion of the industrial arts with the general plan of general education. Friese in his philosophy of the industrial arts brings out the following points:11

1. Learning and developmental experiences in the industrial arts, through types of experiences not otherwise available, are essential in the complete social education of every boy in a dominantly industrial democracy.

Here all types of boys meet in interesting and instructive environment. They must give and take and work cooperatively at times. All members get some insight into how more than one half of American wage earners work.

2. The industrial arts constitute a group of school experiences which embrace the most fundamental procedure in education, namely learning through a combination of seeing, hearing, thinking, and doing.

Too much of our school work today centers around the life experiences of others. Children have such education served to them on a platter, as it were mostly ready prepared, the recorded experiences of others. Such experiences are pseudo. Such education is unreal. A few can profit by it. For the many, an education of recorded second-hand thoughts only is socially dangerous. Herein lies a particular education significance of industrial arts and the other so-called practical subjects. Providing real life situations, or something closely approaching them as agencies of learning, is one of the chief reasons that students have keen interest in vital industrial arts education.12

3. Industrial arts is a convenient and natural agency for educational correlation.

11John F. Friese, Course Making in Industrial Arts, p. 59.
12Ibid., p. 59.
4. The interest factor plays a prominent part in the kind and amount of learning accomplished in the industrial arts.

It is the entering wedge and the driving force which make students strive. Where effort is expended, changes (education) occur in the individual.

5. The vehicle of learning, the problem, job or educational project is the physical expression of a pupil's educative experiences and growth.

6. Industrial arts provides a ready avenue of self expression for large numbers of persons who find many other avenues for such experiences closed.

It appeals to everyone. For the brain worker it is an escape. For the manual worker it provides satisfaction.

7. Industrial arts is fundamentally and naturally child-centered in its concepts and in its practice of methods, subject matter, and control.

8. Some phases of industrial arts are applicable to girls as well as boys.

Girls and women, in the operation of the household, the car, communication devices, and the garden are confronted with the use, adjustment, and occasional repair of mechanized labor-saving devices.

9. In industrial arts, as in other school activities, what little carry-over value or transfer of training occurs takes place more as a result of the methods of teaching employed than through the significance of subject matter.

10. Industrial arts and vocational industrial education are complimentary parts of a complete industrial education-an education based upon important factors of current industrial life and development. 13

This form of industrial education is invaluable to industry for without it industry would have to orientate each worker before he definitely picks his occupation.

11. Objectives of a particular industrial arts course or activity must be in harmony with those of the industrial arts department of which it is a part; the aims of the junior high school, senior high school, or secondary education as a whole; and finally, the aims of secondary schools must culminate in recognized contributions to all organized or formal education.

12. The teacher's plan of organization and his control of personnel, equipment, supplies, products, and safety, contribute many of the desirable educational outcomes of the industrial arts.

13. Industrial arts abounds in natural situations conducive to creative thinking or problem solving. Industrial arts has particular contributions to make in this matter (1) a need is recognized, (2) a plan to fill the need is made, (3) the job or work is executed, and (4) the results are evaluated.

14. Industrial arts provides a ready and natural agency for a degree of foundational training in industrial versatility.

15. In the teaching of industrial arts, the teacher is more important than space, equipment and supplies. It appears that the philosophy of industrial arts works toward the same end generally as our philosophy of education.

Objectives of Industrial Arts

A modern program of industrial arts education has certain specific objectives. Some industrial arts

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objectives were well stated by Gruhn and Douglass as follows: 15

1. To develop in each pupil an active interest in industrial life and in methods of production and distribution. (Guidance values, general information, better social understanding, working conditions, sanitation.)

2. To develop in each pupil the ability to select, care for and use properly the things he buys or uses. (This is sometimes referred to in less specific terms as "consumer's knowledge")

3. To develop in each pupil the appreciation of good workmanship and good design. (Aesthetic values, consumer knowledge)

4. To develop in each pupil an attitude of pride or interest in his ability to do useful things. (Self-respect, worthy home membership)

5. To develop in each pupil a feeling of self-reliance and confidence in his ability to deal with people and to care for himself in an unusual or unfamiliar situation. (Self-confidence, initiative, forcefulness, aggressiveness, leadership, judgment)

6. To develop in each pupil the habit of an orderly method of procedure in the performance of any task. (Efficiency, purposeful activity)

7. To develop in each pupil the habit of self-discipline which requires one to do a thing when it should be done, whether it is a pleasant task or not. (Reliability, idealism, obedience to authority)

8. To develop in each pupil the habit of careful, thoughtful work without loitering or wasting time. (Industry, usefulness, productivity)

9. To develop in each pupil an attitude of readiness to assist others when they need help and to join in group undertakings. (Cooperation, unselfishness, getting along with people) 16


16 Ibid., p. 164.
10. To develop in each pupil a thoughtful attitude in the matter of making things easy and pleasant for others, (Consideration for others, courtesy, refinement, good citizenship)

11. To develop in each pupil desirable attitudes and practices with respect to health and safety. (Health and safety habits)

12. To develop in each pupil a knowledge and understanding of mechanical drawing, the interpretation of the conventions used in drawings and working diagrams, and the ability to express his ideas by means of a drawing. (Skill in rendering and understanding of drawings)

13. To develop in each pupil elementary skills in the use of the more common tools and machines, and a knowledge of the methods of procedure in tasks frequently encountered by the average man, together with a knowledge of the working qualities and characteristics of some of our most used materials. (Toolskills, procedures, principles of machine operation, and construction practices)\(^{17}\)

This does not, by any means, complete the objectives of industrial arts. There are many more general objectives. Each teacher of the industrial arts has certain objectives that other teachers may not have. Community needs often do and should influence the objectives of the industrial arts program. The general trend of the industrial arts program is to work towards the objectives of general education.

The Industrial Arts and General Education

It appears that the industrial arts have unlimited value in the field of therapy. The United States Army Medical Corps found the crafts and hobbies invaluable in

\(^{17}\text{Ibid.}, \ p. \ 164.\)
aid to the mentally and physically injured of World War II. Occupational therapy has been defined as, "any activity, mental or physical, definitely prescribed and guided for the distinct purpose of contributing to and hastening recovery from disease or injury." Occupational therapy became a necessity for the many injured of World War II, both physical and mental. Since this program was entirely new, it was based almost completely on the industrial arts program. The aim of treatment is to divert the interests, feelings, thoughts, and activities of the patients away from himself and direct them toward reality. In the past the aim of occupational therapy was to keep the patient busy. That alone is not enough. There must be a program of arts and crafts applicable to the patients. The patients find means of self-expression through these arts and crafts. Since occupational therapy has been very effective, it has been considered a substitute for pills, powders, restraint, and force.\(^\text{18}\)

It is interesting to note that the most popular courses included in our industrial arts program of our public schools, are also the courses considered most effective for occupational therapy. Many students of

\(^{18}\)A. K. Riggert, "Inherent Therapeutic Values in Industrial Arts," Industrial Arts and Vocational Education, XXXVI (June, 1947), 237-238.

\(^{19}\)Ibid., pp. 237-238.
our public schools may also need to work with their hands to help relieve their mind of stress. These students could profit immeasurably from the industrial arts. Industrial arts is a means for the student to express himself if he cannot do it in other ways. Self-expression is necessary to gain confidence.

This is essentially an industrial age. Since World War II modern civilization is dependent largely upon science, invention and skill. The general education of every public-school pupil, his cultural development, is incomplete without concepts, understandings, and appreciations regarding industry and its host of workers.20

Not until recently have educators considered the industrial training as general education. Originally, industrial training was acquired in the home. Changes in industry have changed the need for the industrial arts. Even when it became apparent that it should be taught in school, the industrial arts was not placed on an even par with other subjects. Fortunately now it is generally agreed that our public schools should adjust their work so as to develop the individual to the fullest extent of his ability for a maximum of success in living and for a maximum social adjustment and contribution. Industrial arts is accepted as a vital curriculum area in such an

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educational program, and may be, in some cases, the integrating core for less tangible elements. Approached with that point of view, the industrial arts contribute greatly to a functional education. The student acquires mechanical experience, knowledge of materials and construction, social understanding, and attitudes and habits which prepare him for homemaking, leisure time activities, membership in the community, and, where trade training is not required, for initial employment.

Opportunities are provided for both individual and group work in the shop. Whether the project is for the student, some member of his family, or the school, a plan must be made or discovered and perhaps modified before work can be started. This involves problems such as the amount of work involved, cost of materials and comparative desirability of different designs, construction methods and materials. Before actual work starts, the method of procedure is considered and properly organized. Then the student must stay with the job and see it through. This is a real life situation which provides a splendid opportunity for practical education and should develop good work habits, attitudes, and appreciations. This type of procedure should assist the pupil in his attack on any problem, whether it be in the field of general education or out in industry.

The industrial arts are a vital curriculum area in the general educational program and should be treated as such.
They are prepared to stand shoulder to shoulder with the other departments of our schools in the attack on, and solution of, those problems which challenge public education and should make a unique contribution to the solution of many problems which develop from our complex industrial civilization.21

A careful examination of the objectives of general education and of those in the industrial arts suggests that there is no conflict in the ideals set forth, and that legitimate and desirable objectives for general education are also legitimate and desirable for the industrial arts. As a part of the general education program it is the special function of the industrial arts to provide experiences which will develop certain traits, habits and points of view which have been neglected altogether or merely touched upon in the other subjects.22

Most students who expect to go to college are now offered an almost wholly verbal type of preparatory training, while hard training and the direct manipulation of objects are mainly reserved for the vocational fields. This is a serious mistake. The bookish student needs to


know how to do things and to make things as much as those students who do not plan to make further intellectual training. The direct contact with materials, the manipulation of simple tools, the capacity to create by hand from a concept of the mind—all these are indispensable aspects of the general education of everyone.23

Every child should be introduced to work, partly, through industrial arts and given the benefits and responsibilities work can provide as an integral part of his education. In some manner, adequate work opportunities must be provided. A few years ago, a committee appointed by the American Council of Education made a study for the American Youth Commission on the secondary school curriculum. The committee recommended that work experience be included as an essential element in a general education, and that a more favorable social attitude be taken toward work.

After making a survey of professional literature covering the subject of general education and industrial arts as general education, it appears that, the industrial arts contribute much to the aims of general education.

Prosser and Allen compared general and industrial education. The comparison is shown in the following chart:24


## Comparative Points Between General and Industrial Education

<table>
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<tr>
<th>Factors</th>
<th>General Education</th>
<th>Industrial Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Theory</td>
<td>Faculty psychology</td>
<td>Habit psychology</td>
</tr>
<tr>
<td>Form of training</td>
<td>General Faculty training</td>
<td>Specific habit training</td>
</tr>
<tr>
<td>Character of content</td>
<td>Standardized</td>
<td>Widely diversified specific content</td>
</tr>
<tr>
<td>Origin of content</td>
<td>Traditional selection</td>
<td>Experiences of competent workers</td>
</tr>
<tr>
<td>Environment</td>
<td>Isolated from life</td>
<td>Under life conditions</td>
</tr>
<tr>
<td>Special interest</td>
<td>Not regarded</td>
<td>Regarded</td>
</tr>
<tr>
<td>Special aptitudes</td>
<td>Not capitalized</td>
<td>Capitalized</td>
</tr>
<tr>
<td>Basis of admission</td>
<td>Ability to meet standardized academic requirements</td>
<td>Ability to profit by the instruction</td>
</tr>
<tr>
<td>Scope of service</td>
<td>Limited-chiefly youth</td>
<td>Serve all groups all ages</td>
</tr>
<tr>
<td>Repetitive training</td>
<td>Little</td>
<td>Much</td>
</tr>
<tr>
<td>Qualifications of instructors</td>
<td>Known content</td>
<td>Hold specific occupational experience</td>
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<tr>
<td>Standards</td>
<td>Academic</td>
<td>Occupational</td>
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<tr>
<td>Objectives</td>
<td>Appreciation and trained faculties</td>
<td>Ability to meet demands of a specified occupation</td>
</tr>
<tr>
<td>Method of training</td>
<td>Illustrations, information, exercises, pseudo jobs</td>
<td>On the job</td>
</tr>
<tr>
<td>Working Conditions</td>
<td>Practically common to all courses</td>
<td>Different for each course</td>
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<tr>
<td>Basis of operation</td>
<td>To offer a general opportunity</td>
<td>To meet specific needs</td>
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<tr>
<td>Leadership</td>
<td>General Ignored</td>
<td>In specific occupations</td>
</tr>
<tr>
<td>Group characteristics</td>
<td>Easy, simple, rigid</td>
<td>Considered</td>
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<tr>
<td>Administration</td>
<td></td>
<td>Difficult, complex, elastic</td>
</tr>
</tbody>
</table>
After a study of the history, philosophy, objectives of the industrial arts, and industrial arts as general education, it appears that an industrial arts program should have certain characteristics. The following characteristics of an efficient industrial arts program will be used as criterion to evaluate the data of this survey:

1. The industrial arts training is given to those who need it, want it, and can profit by it.

2. The industrial arts develop in the student the habit of thoughtful, careful work without wasting time.

3. The industrial arts develop in the pupil an attitude of pride and interest in his ability to do useful things.

4. The industrial arts develop hobbies or leisure time interests.

5. The industrial arts develop problem solving attitudes.

6. The industrial arts develop household mechanics or abilities in the use of tools, materials and in ordinary repairs to household equipment.

7. The industrial arts practice and develop desirable habits in regards to safety.

8. The industrial arts are a means of vocational guidance.

9. The industrial arts develop and hold the interest of the students.

10. The industrial arts courses are financially in reach of all students.
CHAPTER III

NEEDS AND INTERESTS OF THE COMMUNITY

In order to present the needs and interests of the community more clearly, it was necessary to present in a discussion and in table form the results of some of the questions from questionnaires. The type of information sought from the boys was as follows:

Do you have a home workshop?
Do you make a plan or drawing of your projects?
Do you enjoy repairing things?
Do you repaint the home and home furnishings?
Are you interested in taking a radio course?
Would you like to take more shop work than is available?
Select ten occupations you are most interested in.
What do you do in your leisure time?
What are your hobbies?

The type of information sought from the parents was as follows:

What are your hobbies?
How much leisure time do you have?
How much leisure time does your boy have?
Do you believe everyone should learn some shop work?
Do you have a home workshop?
If you could have taken more shop work in school could you make more home repairs?
What type of shop program do you favor most?
Do you think more shop courses should be provided in the junior high school?
Do you think more shop courses should be provided in the senior high school?

Table 1 presents data on the choice of subjects of industrial arts as indicated by 511 questionnaires received from junior high school boys.
TABLE 1
THE CHOICE OF SUBJECTS OF THE INDUSTRIAL ARTS AS INDICATED BY 311 JUNIOR HIGH SCHOOL BOYS

<table>
<thead>
<tr>
<th>Course</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Woodwork</td>
<td>157</td>
<td>75</td>
<td>31</td>
<td>25</td>
<td>23</td>
</tr>
<tr>
<td>Metalwork</td>
<td>35</td>
<td>90</td>
<td>74</td>
<td>54</td>
<td>37</td>
</tr>
<tr>
<td>Mechanical Drawing</td>
<td>16</td>
<td>30</td>
<td>50</td>
<td>79</td>
<td>105</td>
</tr>
<tr>
<td>Crafts</td>
<td>31</td>
<td>73</td>
<td>90</td>
<td>51</td>
<td>52</td>
</tr>
<tr>
<td>Radio</td>
<td>53</td>
<td>21</td>
<td>54</td>
<td>70</td>
<td>83</td>
</tr>
</tbody>
</table>

It is significant that the subject choice which placed first was woodwork by a large majority. Radio was second choice, metalwork third, crafts fourth, and mechanical drawing fifth.

Table 2 presents data on the choice of subjects of the industrial arts as indicated by 151 questionnaires received from the senior high school boys.

TABLE 2
THE CHOICE OF SUBJECTS OF THE INDUSTRIAL ARTS AS INDICATED BY 151 SENIOR HIGH SCHOOL BOYS

<table>
<thead>
<tr>
<th>Course</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Woodwork</td>
<td>32</td>
<td>30</td>
<td>38</td>
<td>36</td>
<td>15</td>
</tr>
<tr>
<td>Metalwork</td>
<td>23</td>
<td>39</td>
<td>39</td>
<td>31</td>
<td>19</td>
</tr>
<tr>
<td>Mechanical Drawing</td>
<td>27</td>
<td>26</td>
<td>36</td>
<td>30</td>
<td>32</td>
</tr>
<tr>
<td>Crafts</td>
<td>17</td>
<td>29</td>
<td>24</td>
<td>34</td>
<td>47</td>
</tr>
<tr>
<td>Radio</td>
<td>52</td>
<td>27</td>
<td>14</td>
<td>20</td>
<td>38</td>
</tr>
</tbody>
</table>
The senior high school boys chose radio as their first choice and woodwork second, which was just the opposite to the junior high school boys' choice. Mechanical drawing was third choice, metalwork fourth and crafts fifth choice. It is well to remember at this time that the Highland Park Junior High School does offer woodwork, which was first choice, as indicated by Table 1. The junior high school does not offer radio, which was second choice, but does offer metalwork which was third choice. A limited crafts course is offered in the art department but no mechanical drawing is offered.

The Highland Park Senior High School does not offer radio, which was first choice as indicated by Table 2, nor woodwork which was second choice. Mechanical drawing is offered and crafts are offered through the art department. No metalwork is offered.

Table 3 presents data on the number of semesters of shopwork completed by junior and senior high school boys. Out of 311 boys questioned from the junior high school, 212 have completed one or more semesters of shopwork. Out of 151 boys questioned from the senior high school, 141 have completed one or more semesters of shopwork. Most of the senior high school boys who indicated that they completed one or more semesters of shopwork, received the courses in the junior high school.
TABLE 3
NUMBER OF SEMESTERS OF SHOPWORK COMPLETED BY 311 JUNIOR HIGH SCHOOL AND 151 SENIOR HIGH SCHOOL BOYS

<table>
<thead>
<tr>
<th>School</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Total number students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Junior high school</td>
<td>97</td>
<td>95</td>
<td>10</td>
<td>10</td>
<td>212</td>
</tr>
<tr>
<td>Senior high school</td>
<td>43</td>
<td>68</td>
<td>12</td>
<td>18</td>
<td>141</td>
</tr>
</tbody>
</table>

Table 3 indicates that ninety-three per cent of the senior high school boys questioned have taken one or more semesters of either woodwork or metalwork. The table indicates that sixty-eight per cent of the junior high school boys have taken one or more semesters of either woodwork or metalwork.

Table 4 presents data concerning the number of semesters of mechanical drawing completed by senior high school boys. Out of 151 boys questioned, fifty-nine have completed one or more semesters of mechanical drawing. Mechanical drawing is not offered in the junior high school.

TABLE 4
NUMBER OF SEMESTERS OF MECHANICAL DRAWING COMPLETED BY 151 SENIOR HIGH SCHOOL BOYS

<table>
<thead>
<tr>
<th>School</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Total number students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior high school</td>
<td>31</td>
<td>19</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>59</td>
</tr>
</tbody>
</table>
Table 4 indicates that thirty-nine per cent of the boys questioned have had one or more semesters of mechanical drawing.

Table 5 presents data indicating the hobbies of the junior high school boys.

**TABLE 5**

**HOBBIES OF 311 JUNIOR HIGH SCHOOL BOYS, RANKED ACCORDING TO THE NUMBER SELECTING EACH HOBBY**

<table>
<thead>
<tr>
<th>Hobby</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sports</td>
<td>67</td>
</tr>
<tr>
<td>Stamp collecting</td>
<td>52</td>
</tr>
<tr>
<td>Building model planes, boats and etc.</td>
<td>43</td>
</tr>
<tr>
<td>Building toys, furniture and etc.</td>
<td>33</td>
</tr>
<tr>
<td>Collecting coins and post cards</td>
<td>25</td>
</tr>
<tr>
<td>Photography</td>
<td>19</td>
</tr>
<tr>
<td>Fishing</td>
<td>18</td>
</tr>
<tr>
<td>Hunting</td>
<td>16</td>
</tr>
<tr>
<td>Chemistry</td>
<td>10</td>
</tr>
<tr>
<td>Radio</td>
<td>8</td>
</tr>
</tbody>
</table>

Table 6 presents data indicating the hobbies of the senior high school boys.

**TABLE 6**

**HOBBIES OF 151 SENIOR HIGH SCHOOL BOYS RANKED ACCORDING TO THE NUMBER OF BOYS SELECTING EACH HOBBY**

<table>
<thead>
<tr>
<th>Hobby</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sports</td>
<td>44</td>
</tr>
<tr>
<td>Photography</td>
<td>28</td>
</tr>
<tr>
<td>Building models</td>
<td>23</td>
</tr>
<tr>
<td>Collecting stamps and coins</td>
<td>20</td>
</tr>
<tr>
<td>Read</td>
<td>20</td>
</tr>
<tr>
<td>Hunt</td>
<td>18</td>
</tr>
<tr>
<td>Fish</td>
<td>15</td>
</tr>
<tr>
<td>Mechanics</td>
<td>12</td>
</tr>
<tr>
<td>Crafts</td>
<td>10</td>
</tr>
</tbody>
</table>
Table 7 presents data indicating the hobbies of 100 of the parents of the community.

**TABLE 7**

**HOBBIES OF 100 PARENTS OF SOME OF THE BOYS QUESTIONED RANKED ACCORDING TO THE NUMBER OF PARENTS SELECTING EACH HOBBY**

<table>
<thead>
<tr>
<th>Hobby</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Read</td>
<td>33</td>
</tr>
<tr>
<td>Gardening</td>
<td>30</td>
</tr>
<tr>
<td>Home repairing</td>
<td>20</td>
</tr>
<tr>
<td>Fishing</td>
<td>19</td>
</tr>
<tr>
<td>Golfing</td>
<td>18</td>
</tr>
<tr>
<td>Hunting</td>
<td>18</td>
</tr>
<tr>
<td>Sports</td>
<td>15</td>
</tr>
<tr>
<td>Woodwork</td>
<td>11</td>
</tr>
<tr>
<td>Collecting stamps and coins</td>
<td>11</td>
</tr>
<tr>
<td>Mechanics</td>
<td>6</td>
</tr>
</tbody>
</table>

Tables 5, 6, and 7 indicate that the hobbies of junior high school boys tend to carry over into adulthood, since several of the same hobbies were listed by junior high school boys, senior high school boys and parents. The hobbies listed in Tables 5, 6, and 7 are similar but are not ranked in the same order of importance. Building model planes, boats and automobiles, golfing, home repairing, and mechanics are among the hobbies that ranked highest. It is significant that the major hobbies listed require some degree of skill, which could be a carry over from shop training.

The following questions were asked the parents: "How much leisure time do you have?" "How much leisure time does your boy have?" The average weekly leisure time was determined through these questions. The parents have an average of 21.54 hours of leisure time per week. The boys have an average of
22.79 hours of leisure time per week. This is approximately one third of the total weekly daylight hours.

Table 8 presents data derived from questions asked the parents concerning hobbies. These questions ask for information regarding opinions about hobbies and their relation to education. It is necessary to present these questions in order to have a clear understanding of the opinions of the community about hobbies, leisure time and their relation to the school.

<table>
<thead>
<tr>
<th>Questions</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>If you could have taken more shopwork in school could you make more home repairs?...</td>
<td>85</td>
<td>15</td>
</tr>
<tr>
<td>If you could have taken more shopwork in school could you make better use of your leisure time?...</td>
<td>82</td>
<td>18</td>
</tr>
<tr>
<td>Would you like for your boy to have a working knowledge of some craft to help him spend his leisure time more profitably?...</td>
<td>94</td>
<td>6</td>
</tr>
<tr>
<td>Do you believe everyone should learn some shopwork or craft work in school so that his leisure time will be used more profitably?...</td>
<td>93</td>
<td>7</td>
</tr>
<tr>
<td>Do you think more shop courses should be provided in the junior high school?...</td>
<td>75</td>
<td>14</td>
</tr>
<tr>
<td>Do you think more shop courses should be provided in the senior high school?...</td>
<td>78</td>
<td>5</td>
</tr>
</tbody>
</table>
Table 9 presents data derived from questions from 311 junior high school boys and 151 senior high school boys. These questions also contain information concerning hobbies, interests, and leisure time. If we are to provide the type of education which seems to be best suited for our youth, it is necessary to take the home life into consideration.

<table>
<thead>
<tr>
<th>Questions</th>
<th>Junior high</th>
<th></th>
<th>Senior high</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you make model planes boats, or automobiles at home?</td>
<td>yes 206</td>
<td>per cent 66</td>
<td>no 112</td>
<td>per cent 34</td>
</tr>
<tr>
<td>Do you repair the home and home furnishings?</td>
<td>yes 193</td>
<td>per cent 62</td>
<td>no 119</td>
<td>per cent 38</td>
</tr>
<tr>
<td>Do you repaint the home and home furnishings?</td>
<td>yes 180</td>
<td>per cent 58</td>
<td>no 132</td>
<td>per cent 42</td>
</tr>
<tr>
<td>Do you enjoy repairing things?</td>
<td>yes 295</td>
<td>per cent 95</td>
<td>no 16</td>
<td>per cent 5</td>
</tr>
<tr>
<td>Do you like to carve wood, soap or stone?</td>
<td>yes 207</td>
<td>per cent 67</td>
<td>no 104</td>
<td>per cent 33</td>
</tr>
<tr>
<td>Would you like to take more woodwork at school?</td>
<td>yes 242</td>
<td>per cent 73</td>
<td>no 66</td>
<td>per cent 22</td>
</tr>
<tr>
<td>Would you like to take more metalwork?</td>
<td>yes 156</td>
<td>per cent 57</td>
<td>no 182</td>
<td>per cent 49</td>
</tr>
<tr>
<td>Would you like to take a crafts course of leather, art metal, plastic, and carving?</td>
<td>yes 198</td>
<td>per cent 63</td>
<td>no 111</td>
<td>per cent 37</td>
</tr>
</tbody>
</table>
Table 10 presents data indicating the general type of industrial arts program plan preferred by the parents from the community. The parents were presented with different types of possible industrial arts programs through the questionnaires. The opinions were fairly well divided and they do not seem to prefer one particular type altogether.

**TABLE 10**

**TYPE OF INDUSTRIAL ARTS PROGRAM PREFERRED BY 100 PARENTS AND RANKED ACCORDING TO PREFERENCE**

<table>
<thead>
<tr>
<th>Proposed plan</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>A general shop to precede specialized courses</td>
<td>50</td>
</tr>
<tr>
<td>A general shop with units of plastic, leather metal, wood and electricity</td>
<td>36</td>
</tr>
<tr>
<td>A separate course for each of the crafts mentioned</td>
<td>21</td>
</tr>
</tbody>
</table>

Tables 11 and 12 present data indicating the occupations in which the junior and senior high school boys are most interested. The boys were allowed to select, from a list of over 150 occupations, ten occupations in which they were most interested. The tables show that the interest in occupations changes to a great extent, since the junior and senior high school boys' interests are somewhat different, as was revealed in Tables 11 and 12. The differences in interests of boys necessitates the giving of attention to individual differences.
### TABLE 11

**TEN OCCUPATIONS SELECTED BY 311 JUNIOR HIGH SCHOOL BOYS AND RANKED ACCORDING TO THE NUMBER SELECTING EACH OCCUPATION**

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Athlete</td>
<td>150</td>
</tr>
<tr>
<td>Aviator</td>
<td>121</td>
</tr>
<tr>
<td>Engineer</td>
<td>118</td>
</tr>
<tr>
<td>Detective</td>
<td>108</td>
</tr>
<tr>
<td>Radio announcer</td>
<td></td>
</tr>
<tr>
<td>Lawyer</td>
<td>32</td>
</tr>
<tr>
<td>Cattleman</td>
<td>73</td>
</tr>
<tr>
<td>Chemist</td>
<td>71</td>
</tr>
<tr>
<td>Scientist</td>
<td>71</td>
</tr>
<tr>
<td>Gunsmith</td>
<td>68</td>
</tr>
</tbody>
</table>

### TABLE 12

**TEN OCCUPATIONS SELECTED BY 151 SENIOR HIGH SCHOOL BOYS AND RANKED ACCORDING TO THE NUMBER SELECTING EACH OCCUPATION**

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineer</td>
<td>69</td>
</tr>
<tr>
<td>Aviator</td>
<td>54</td>
</tr>
<tr>
<td>Lawyer</td>
<td>46</td>
</tr>
<tr>
<td>Scientist</td>
<td>45</td>
</tr>
<tr>
<td>Chemist</td>
<td>43</td>
</tr>
<tr>
<td>Radio announcer</td>
<td></td>
</tr>
<tr>
<td>Automobile mechanic</td>
<td>37</td>
</tr>
<tr>
<td>Geologist</td>
<td>34</td>
</tr>
<tr>
<td>Cattleman</td>
<td>33</td>
</tr>
<tr>
<td>Gunsmith</td>
<td>32</td>
</tr>
</tbody>
</table>

Data were presented in this chapter concerning hobbies, leisure time interest, occupational interest, and choice of subjects. The data will be analyzed and applied to the criteria in the following chapter.
CHAPTER IV

COMMUNITY NEEDS AND INTERESTS COMPARED TO
THE CLAIMS AND PROVEN ABILITIES OF
THE INDUSTRIAL ARTS

Chapter II presented a study of the industrial arts claims and proven abilities. Chapter III presented the needs and interests of the community as determined by interviews and questionnaires. This chapter is devoted to a comparison of the community needs as shown in the survey, to the industrial arts' claims and proven abilities.

The data received in this study indicate that the junior high school boys chose woodwork for their first choice of the industrial arts subjects. Other choices were shown in the following order: radio, metalwork, crafts, and mechanical drawing. If the industrial arts program of the junior high school were to comply with the interests of the boys, the present program would need to be rearranged to some extent. Woodwork is offered in the junior high school and tends to meet the needs of the 157 boys who indicated that woodwork was their first choice. However, fifty-three boys indicated that radio was their first choice, but since no radio is offered, they will have to elect either woodwork or metalwork or not take any industrial arts. Every effort should be made to offer some type of radio course.
The boys have indicated that they are extremely interested in radio. If the junior high school industrial arts program is to provide for the boys' interest, it should provide a radio course. Metalwork was third choice and is at the present time included in the junior high school curriculum. Crafts was fourth choice. A limited amount of craft work is offered through the art department. It is possible that crafts would be more in demand if offered in a shop with a variety of tools with which to work. Mechanical drawing was fifth choice as only sixteen boys indicated mechanical drawing as their choice. It appears that the junior high school boys are not interested in mechanical drawing to a very great extent. This may be due to the fact that there is not as much physical activity in mechanical drawing as there is in other shop courses or that mechanical drawing is not offered and therefore not understood. Boys of this age are growing rapidly and seem to need physical activity.

Table 2 shows that the senior high school boys chose the industrial arts courses, which they preferred, in the following order: radio, woodwork, mechanical drawing, metalwork, and crafts. Since no radio is offered in either school, it is significant that radio has placed first with the senior high school boys and second with the junior high school boys. Woodwork was the second choice and is not offered in the senior high school. Mechanical drawing was third and is included in the present senior
high school curriculum. Metalwork was fourth choice and is not offered in the senior high school. Crafts was last choice and a very limited amount is offered through the art department. From the data presented in Table 2 it appears that the industrial arts department is not adequate in the respect that it is not meeting the interests of the senior high school boys. It is evident that shop courses should be provided.

One of the many values and objectives of industrial arts is that the industrial arts does have unlimited value in providing activity courses. Growing boys must have a way to express themselves. A great per cent of the boys have no outlet for emotions, and it is believed that the industrial arts provides this outlet. The interests of the boys, their feelings, thoughts and activities are diverted away from themselves and directed towards reality. The boys have shown a need for such activity when they indicated their choice of subjects. They are vitally interested in any activity shop course.

To the question; "Do you repair the home and home furnishings?", almost sixty-five per cent of the junior high school boys answered "yes" and seventy per cent of the senior high school boys answered "yes". This indicates that there is a high correlation between those who have taken shopwork and those who made home repairs.
It appears that the industrial arts made a direct contribution to better home living. This is significant since our fundamental aim of education is to teach the child to live a better life. The following industrial arts objectives contribute directly to better home living:

- Worthy use of leisure time
- Worthy home membership (consideration of others)
- To develop the ability to repair the home and home furnishings
- To develop the ability to select wisely the things he buys (consumer knowledge)
- To develop the habit of readiness to assist others.

The value of these objectives, and many other such industrial arts objectives, are shown in Table 5 in which 311 junior high school boys indicate their hobbies. Sixty-seven boys stated that sports occupied more of their leisure time than any other hobby. Stamp collecting was second choice with fifty-two boys using it as a hobby. Other hobbies listed in order are: building toys, furniture and other household items, building model boats, planes, and automobiles, photography, chemistry, radio, hunting and mechanics. The industrial arts program of the Highland Park Junior High School through woodwork and metalwork aids in the development of such hobbies as building models, toys, furniture, and mechanics. However, the present industrial arts program does not include such subjects that tend to develop such hobbies as photography, radio, hunting, and fishing. Since national production is catching up, leisure time is growing rapidly. The
industrial arts will be responsible for developing leisure time interests. It appears that one of the major objectives of the industrial arts should be to develop leisure time interests. The industrial arts could be used to develop the abilities that lead to almost all of the hobbies mentioned.

Table 6 sets forth some of the hobbies that occupy most of the senior high school boys' leisure time. The hobbies, ranked according to the number of boys selecting each, are: sports, photography, building models, collecting stamps and coins, read, hunt, fish, mechanics, and crafts. The industrial arts program of the Highland Park Senior High School does not offer any subjects that would completely develop such hobbies as were mentioned. Mechanical drawing is the only industrial arts subject offered in the senior high school and it does not appear that mechanical drawing would develop any of the hobbies listed. Some of the hobbies may have developed from shopwork taken in the junior high school by the student. Even though most of these hobbies do not seem to have been developed through the industrial arts, desirable habits pertaining to them are definite objectives of an efficient industrial arts program. "To develop in each pupil desirable attitudes and practices with respect to health and safety" is an industrial arts objective that is prominent in the development of such hobbies. Health and safety would be vitally important in the development of such hobbies as sports,
building models, hunting, mechanics and crafts. There is some degree of safety required in any industrial arts subject.

Table 7 indicates the hobbies of 100 of the parents of the community. The hobbies, ranked according to the number of parents selecting each, are: reading, gardening, home repairing, fishing, golfing, hunting, sports, woodwork, collecting stamps and coins, and mechanics. The parents indicated that they all have some hobby to spend their leisure time with. However, in Table 8 eighty-two per cent showed a definite need for more training in the ability to have certain hobbies. Some hobbies such as mechanics, crafts, repairing and woodwork seem to be directly related to the industrial arts. If students were provided with all of the different courses in industrial arts in which they are interested they would probably establish most of their hobbies in that way. Many students take very little industrial arts because of the poor offering while others cannot because of schedule conflict.

The average weekly leisure time for boys from junior high school and senior high school was 22.79 hours. Boys now have more leisure time than ever before. It is logical to assume that their leisure time will continue to expand since our industrial world is becoming more mechanized each day. Most of the home appliances are operated by electricity now and do away with hours of work. This
saving of time usually develops into leisure time. The leisure time is something with which we should be vitally concerned. Every child should have at least one worthwhile hobby to work with in leisure time. The trend of the industrial arts is away from specialized subjects and towards developing the child for better home living, of which leisure time is an important aspect. Even with the increase in demand for the industrial arts courses, the program is not expanding to meet community needs. Leisure time is growing so much that the child should be taught how to spend his leisure time more profitably. Formerly, the child was taught how to make a living because that occupied most of his time. Now leisure time is almost equal to working time and the child must be taught to make a living and to live adequately during leisure time as well. The industrial arts is a natural agency for such an undertaking. It appears that the industrial arts program should cover a variety of experiences and should develop the child's interest as far as is possible whether it be in photography, radio, gunsmithing, models, or crafts.

In one hundred questionnaires sent to the parents, the question was asked: "If you could have taken more shopwork in school could you make more home repairs?" The parents answered with eighty-five replies of "yes" and fifteen replies of "no". This is highly indicative that the parents definitely feel a need for more training in how to repair the home. This need is felt more than ever before partly
because of the shortage of carpenters, painters, and others in the business of repairs.

Another question was; "If you could have taken more shopwork in school would you make better use of your leisure time?" The answers received were eighty-two replies of "yes" and eighteen replies of "no." This reveals that they definitely feel a need for the knowledge of some craft or the ability to do something useful in leisure time. Such high percentage of parents indicating their interest in more shopwork, warrants consideration. The industrial arts program does provide means for developing the ability to repair the home but the program does not provide means for developing all of the hobbies in which the parents have shown an interest.

The parents were asked the following question: "Would you like for your boy to have a working knowledge of some craft to help him spend his leisure time more profitably?" The parents answered with ninety-four replies of "yes" and six replies of "no." It appears that almost all of the parents are interested in their child having something worth-while to do in his leisure time. They may realize that it would be much easier to keep their child off the streets if this child had a hobby or leisure time interest. The industrial arts may provide each child with hobbies and leisure time interests, therefore since the parents realize a need for hobbies and leisure time interests, every effort
should be made to make available shop courses for every individual child.

The following question was asked the parents: "Do you think more shop courses should be provided in the junior high school?" They answered with seventy-five replies of "yes" and fourteen replies of "no." Eleven replied that they did not know enough about the program to answer. The parents not only have indicated that they realize a need for hobbies and leisure time interests for themselves and their children, but they have shown that they have a reason to believe more shop courses will provide this since they have revealed interest in more shopwork and the development of leisure time interests. Another question asked the parents was; "Do you think more shop courses should be provided in the senior high school?" They answered this question with seventy-eight replies of "yes", five replies of "no", and seventeen made no reply. Of the seventeen who made no reply, most of them indicated that they did not know enough about the school to answer. This proves that seventy-eight per cent of the parents questioned are definitely interested in the addition of more shop courses. Since such a high per cent of the parents favor a shop program for the senior high school, it is significant that no shop courses are offered at the present time in the senior high school.
Table 9 presented a series of questions from questionnaires given to 311 junior high school boys and 151 senior high school boys. The questions concern hobbies, leisure time and other interests. This question was asked the junior and senior high school boys: "Do you make model planes, boats, or automobiles at home?" The junior high school boys answered with 206 replies of "yes" and 112 replies of "no." The senior high school boys answered with eighty-four replies of "yes" and sixty-eight replies of "no." Sixty-two per cent of the boys made models in their leisure time. The senior high school industrial arts program does not offer any subject to develop such hobbies. The junior high school industrial arts program does offer metalwork and woodwork which tends to develop the hobbies of building models and repairing toys and equipment. The industrial arts provide experiences which make some hobbies a natural outcome. The students work with materials and get some concept of machinery mechanism. They try out their new experiences at home with models or other building hobbies. Part of the philosophy of the industrial arts education is to provide through seeing, hearing, thinking and doing experiences not otherwise available.

Four hundred and sixty-two boys were asked this question: "Do you repair the home and home furnishings?" The junior high school boys answered with 193 replies of "yes" and 119 replies of "no." The senior high school boys answered with 106 replies of "yes" and forty-five replies of "no." This
means that sixty-six per cent of the boys questioned do repair the home and home furnishings. This is important since eighty-five per cent of the parents have expressed their need for more training in the ability to make home repairs. The boys have indicated that they make more home repairs than the parents do. This is due, partly, to the fact that the boys have developed the ability through the industrial arts. Since the parents have expressed their need for more training in home repairs, the senior high school industrial arts program should include shopwork. The junior high school does have metalwork and woodwork but this alone is not sufficient to meet community needs.

This question was asked the boys: "Would you like to take more woodwork at school?" The junior high school boys answered with 242 replies of "yes" and sixty-six replies of "no." The senior high school boys answered with seventy-one replies of "yes" and eighty-two replies of "no." The large per cent of junior high school boys asking for more woodwork holds true with their choice of subjects which was woodwork. However, the senior high school boys chose woodwork as their second choice and in Table 9 they indicated that only forty-seven per cent wanted more woodwork. Through personal interviews with some boys it was determined that many answered in the negative because they did not have time to take a course of woodwork.
Four hundred and sixty-two boys were asked: "Do you enjoy repairing things?" The junior high school boys answered with 295 replies of "yes" and sixteen replies of "no." The senior high school boys answered with 131 replies of "yes" and twenty replies of "no." This reveals that ninety-one per cent of the boys like to make repairs. They enjoy it because of the activity that it involves. They find means of self expression through the job and they take pride and interest in their accomplishments.

The parents of the students in the Highland Park Schools expressed themselves as to the type of shop program in which they were interested. Table 10 points out that more parents prefer general shop courses as a prerequisite to specialized courses if both could be offered. However, the parents indicated that they were not particularly interested in the type of shop program presented. They did indicate, as shown in Table 9, that they preferred more shopwork.

Table 11 presents ten occupations, selected by junior high school boys, in which they are interested. The following occupations are ranked according to the number selecting each occupation: athlete, aviator, engineer, detective, radio announcer, lawyer, cattleman, chemist, scientist, and gunsmith. Even though the trend of the industrial arts program has been away from specialized skills and recognizes individual differences, the present industrial arts program of the junior high school does not give the students
opportunity to work towards any specific occupations. The occupations listed above are not the type of occupations that are easily developed in the industrial arts; however, some related information could be given. The trend is to correlate the industrial arts as much as possible with other areas of the school to enable the fusion of the industrial arts with the general plan of general education. The industrial arts do not propose to teach a trade but the objective is to develop a good understanding of certain occupations and industry. The industrial arts strive to develop in the child a better coordination of the mind and the muscles. Good coordination is important in good home life as well as in business. The industrial arts do contribute some to the occupations listed. Mechanical drawing and any shopwork would be a necessity for an engineer or an aviator. Shopwork would contribute a great deal to the chemist and scientist through the study of certain materials and processes. A good gunsmith would require a certain amount of shopwork, especially of metalwork. These are only a few of those occupations to which the industrial arts contribute some related information.

Table 12 presented ten occupations, selected by senior high school boys, in which they were most interested. The following occupations are ranked according to the way the boys selected them: engineer, aviator, lawyer, scientist, chemist, radio announcer, automobile mechanic, geologist,
cattlemen and gunsmith. The industrial arts program should take these selected occupations into consideration and attempt to develop the students' concept into the occupations in which he is most interested. However, the present program is so limited that only a few occupational concepts can be drawn. Woodwork and metalwork provide the opportunity to work with several materials which develop certain occupational concepts. Mechanical drawing is important and necessary for those interested in engineering. It seems necessary to have a much wider variety of subject offerings through the industrial arts to develop more occupational concepts. There is almost no limit to the type and scope of program which could be offered through the industrial arts, which could be most valuable to those learning hobbies, those having leisure time interests, occupational concepts, coordination of muscles and a better knowledge of materials.
CHAPTER V

SUMMARY AND RECOMMENDATIONS

Summary

The Highland Park Independent Schools, Dallas, Texas, are made up of four elementary schools, one junior high school and one senior high school. The present industrial arts program in the junior high school includes woodwork and metalwork which are available to the eighth and ninth grades. The present industrial arts program of the senior high school includes mechanical drawing which is available to the tenth, eleventh, and twelfth grades.

The history, philosophy, and objectives of the industrial arts have shown that handwork has been considered valuable educational training as far back as 2000 B.C. The development of the industrial arts has made a fairly steady progress since about 1870.

In this study data have been presented concerning community needs and interests. Questionnaires were given to 311 junior high school boys, 151 senior high school boys and to 100 parents of some of the boys. The questionnaires gathered data which indicated the boys' hobbies, leisure time interests, selection of industrial arts subjects, occupations, and numerous questions concerning their abilities. The questionnaires to the parents assembled
data which indicated their hobbies, leisure time interests, suggestions, habits, and abilities.

The survey revealed that the junior high school boys selected woodwork as their first choice of the industrial arts subjects. They selected radio as second choice. Metalwork was third choice, crafts fourth and mechanical drawing fifth. The senior high school boys chose the industrial arts subjects in the following order: radio, woodwork, mechanical drawing, metalwork, and crafts. The junior high school curriculum includes woodwork which was first choice but the senior high school does not include radio which was the senior high school boys' first choice.

Out of 311 junior high school boys questioned, 212 have taken one or more semesters of shopwork. Out of 151 senior high school boys questioned 141 have taken some shopwork and fifty-nine have taken one or more semesters of mechanical drawing.

The junior high school boys and senior high school boys have indicated that their major hobbies include the following: sports, photography, building models, building toys and household items, hunting, fishing, chemistry, radio, mechanics, and crafts. The present industrial arts program of the Highland Park Schools does not provide for the development of most of those hobbies.

Eighty-five per cent of the parents questioned have indicated that they could make more home repairs if they
could have taken shopwork in school. Eighty-two per cent have shown that they could make better use of their leisure time through hobbies if they could have taken shopwork in school. Ninety-four per cent have shown that they definitely want their boys taught some crafts or hobbies to help them to spend their leisure time to more advantage. Seventy-five per cent of the parents have indicated that they want more variety of shop courses in the junior high school. The parents have shown that they prefer a general shop course to precede specialized courses.

The junior high school boys and senior high school boys have indicated that they are mostly interested in the following occupations: engineering, athletics, aviation, the law, criminal investigation, scientist, radio announcing, mechanics, and gunsmithing. The present industrial arts program of the Highland Park Schools provides little guidance for any of the occupations listed.

A comparison of the community needs and interests to the claims and proven abilities of the industrial arts appears to indicate that the community is definitely in need of more training in a variety of hobbies and in the ability to do more home repairs. The industrial arts, through crafts and shop courses, are capable of developing a variety of hobbies and the ability to do home repairs. The senior high school offers no shopwork at the present time. Seventy-eight per cent of the parents who were
questioned definitely think more shop courses should be provided in the senior high school.

Recommendations

In connection with the findings of this study the following recommendations appear worthy of consideration:

1. That a concentrated effort should be made to add a radio course and a shop course, which includes some woodwork, metalwork, and crafts, to the senior high school curriculum.

2. That a wider variety of experiences be covered in the junior high school shop courses or that additional shop courses be provided.

3. That an adult education program be provided to take care of community needs for a variety of hobbies and the ability to make more home repairs.

4. That a survey of community needs be made from time to time in all courses in order to determine needed curriculum changes.
QUESTIONNAIRE
(FOR JUNIOR AND SENIOR HIGH SCHOOL BOYS)

NAME________________________AGE________GRADE________

1. Do you have a home workshop?_____________________________________

2. Do you have any hand tools in your home to work with?____

3. Would you like to have more tools and shop facilities at home?_____________________________________

4. Do you make model planes, boats or automobiles at home?_

5. Do you repair the home and home furnishings?________

6. What are your hobbies? _______________________________________

7. What do you do in your leisure time? _______________________________

8. Do you make a definite plan or drawing of your work? __

9. Do you repair your bicycle? ________________________________

10. Do you repair your gun? _______________________________________

11. Do you refinish your gun stock? __________________________

12. Do you repaint the home furnishings? __________________________

13. Do you enjoy repairing things? _________________________________

14. Do you like to carve either wood, soap or stone? ______

15. Do you like to watch carpenters, mechanics, and other craftsmen at work? ___________________________

16. Have you had any mechanical drawing in school? ____________

17. How many semesters of mechanical drawing have you had?___

18. Have you had any shopwork in junior high or senior high school?____________________________

19. How many semesters of shop work have you had? ____________

20. Are you interested in taking a radio course?__________________

21. Would you like to take more woodwork at school? ___________
22. Would you like to take more metalwork at school?  

23. Would you like to take a crafts course consisting of leather, plastics, art metal, and carving?  

24. Would you like to make a leather billfold?  

25. Would you like to make a small electric motor?  

26. Would you like to make projects of plastic such as a letter box, cigarette box, or picture frame?  

27. Would you like to make a desk or an end table?  

28. Show your first, second, third, fourth, and fifth choice by placing 1, 2, 3, 4, or 5 to the left of the subject.  

Woodwork  Crafts (leather, plastics, art metal)  
Metalwork  Radio  
Mechanical drawing 

29. List projects you would like to make if you could take shop work.  

30. List shop courses, drawing courses and craft courses that you would like to take in school.  


From the following list of occupations, select ten occupations that you are most interested in by placing a check mark to the left of the occupation.

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<thead>
<tr>
<th>Accountant</th>
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<th>Purchasing agent</th>
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<tr>
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<td>Farmer</td>
<td>Radio announcer</td>
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<td>Florist</td>
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<td>Inspector</td>
<td>Research worker</td>
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<td>Jeweler</td>
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<td>Mathematician</td>
<td>Switchman</td>
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<td>Musician</td>
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<td>Collector</td>
<td>Musician</td>
<td>Toolmaker</td>
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<td>Pattern maker</td>
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<td>Paymaster</td>
<td>Tree surgeon</td>
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<td>Cowboy</td>
<td>Personnel director</td>
<td>Trucker</td>
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<tr>
<td>Dairyman</td>
<td>Pharmacist</td>
<td>Typist</td>
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<td>Dancer</td>
<td>Physician</td>
<td>Undertaker</td>
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<tr>
<td>Dentist</td>
<td>Plasterer</td>
<td>Upholster</td>
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<td>Designer</td>
<td>Plumber</td>
<td>Usher</td>
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<td>Detective</td>
<td>Post</td>
<td>Veterinary</td>
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<td>Draftsman</td>
<td>Politician</td>
<td>Watchmaker</td>
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<tr>
<td>Dressmaker</td>
<td>Poultry raiser</td>
<td>Welder</td>
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<tr>
<td>Economist</td>
<td>Printer</td>
<td>Woodworker</td>
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<td>Electrician</td>
<td>Proofreader</td>
<td>Yardmaster</td>
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<td>Engineer</td>
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If the occupations you are interested in are not listed, list them below.
Parents,

The following questionnaire is designed to gather information to be used in determining to what extent the present Industrial Arts program of the Highland Park School system is meeting the needs of the community. This information is necessary to complete a research problem. Will you please fill out and return the questionnaire? Your cooperation will be greatly appreciated.

Your name and answers will be kept in strict confidence and your replies will be used for statistical purposes only.

Either parent may fill out the questionnaire, preferably the father.

If furthur information is necessary you may leave a call for me at the Junior High School at L-5541.

Sincerely Yours,
QUESTIONNAIRE
(POR PARENTS)

NAME ___________________________________________ OCCUPATION ________________________________

1. What are your hobbies? ______________________________________________

2. What do you do in your leisure time? _________________________________

3. Approximately how much leisure time per week do you have? ____________

4. What are your boy's hobbies? _________________________________________

5. What does your boy do in his leisure time? _____________________________

6. Approximately how much leisure time per week does your boy have? ______

7. Would you like for your boy to have a working knowledge of some craft to help him spend his leisure time more profitably? ______________________

8. Do you believe everyone should learn some shopwork or craft work in school so that his leisure time will be used more profitably? _________

9. Do you have a home workshop? _______________________________________

10. Do you have a few tools to make home repairs with? _________

11. If you could have taken more shopwork in school could you make more home repairs? _________________________

12. If you could have taken more shopwork in school could you make better use of your leisure time? ________________

13. Do you think more shop courses should be provided in the junior high school? _____________________________

14. Do you think more shop courses should be provided in the senior high school? ___________________________

15. Place a check mark to the left of the type of shop program you favor most.

   A general shop with units of plastic, leather, metal wood, and electricity.
   A separate course for each of the crafts mentioned.
   A general shop to precede specialized courses?
16. Does your boy show an interest in construction work and mechanical operations? 

17. Does your boy need training in the proper care and respect for tools and equipment? 

18. Does your boy need training in a more systematic way of doing things and to take responsibility of getting the job done, pleasant or unpleasant? 

19. Would you like for your boy to have a good understanding of furniture and to be consumer wise? 

20. Do you know a definite occupation that you want your boy to follow? If so, what is it? 

21. Do you think the present industrial arts program in the Highland Park School system is adequate and meeting the needs of our Industrial Age? 

22. List any changes you would like to see made in the industrial arts program of the Highland Park Schools.
BIBLIOGRAPHY

Books


Articles


Reports


Unpublished Materials


