1965

A Historical Study of Industrial Education in Iowa 1917 to 1965

Daniel L. Ryan
University of Northern Iowa

A Historical Study of Industrial Education in Iowa 1917 to 1965

Abstract

It was the purpose of this study (I) to gather information regarding the history of Industrial Education from 1917 to the present time; (2) to show this relationship between the growth of the State' s history in Industrial Education and that of the Nation 1 s;· and (3) to present facts indicating the present status of Industrial Education in the state.

A HISTORICAL STUDY OF INDUSTRIAL EDUCATION IN IOWA 1917 TO 1965

A Report

Presented to

Dr. H.O. Reed Department of Industrial Arts

State College of Iowa

In Partial Fulfillment

of the Requirements for 33:266

Foundations of Industrial Education

---

by

Daniel L. Ryan

July 1965

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER I

INTRODUCTION

For many years there has been no textbook or other centrally organized form of information for the history of Industrial Education. For the state of Iowa, no direct, single source of information has been compiled to aid the student in a study of the growth and development of Industrial Education in Iowa.

I. THE PROBLEM

Statement of the problem. It was the purpose of this study (1) to gather information regarding the history of Industrial Education from 1917 to the present time; (2) to show this relationship between the growth of the State's history in Industrial Education and that of the Nation's; and (3) to present facts indicating the present status of Industrial Education in the state.

Importance of the study. Historical development has frequently been stressed as one of the most neglected aspects of American Education. One authority states:

> One of the persistent criticisms that foreigners make about American education -- and for that matter, about our entire society -- is its undue emphasis on the present and its corresponding lack of concern with the past. Some historians have disparagingly referred to this phenomenon as the disease of "presentitis". One professional educator has characterized our lack

of concern with the historical antecedents of education as the "besetting sin of pedagogy". (3 : 20)

In this study an attempt was made to overcome the above criticism in the field of Industrial Eudcation. Through a careful examination of resources available from 1917 to the present.

Limitation of the study. This study was limited to the "Industrial Arts" as applied to general education purposes. No attempt was made on the part of the writer to include those fields of study classified as vocational or trade preparatory.

II. DEFINITIONS OF TERMS USED

MANUAL TRAINING. Throughout this report, the term "Manual Training" shall be interpreted as meaning that field of study concerned with the training of the hand and eye through the use of meaningful experiences. (2 :34)

MANUAL ARTS. Manual Arts was interpreted as meaning an expanded field of education including such elements as self-expression, design, and planning as well as the traditional training aspects of education. (2 :517-519)

INDUSTRIAL ARTS. The term "Industrial Arts" was used to mean, that field of education concerned with life problems to trade and industrial consumption, production, workers, management, or occupational selection; and with mechanical projects imitated through student interest. (1 : chpt.8)

CHAPTER II

REVIEW OF THE LITERATIRE

Much has been written in regard to the important happenings in our field. A collection of these happenings might well fill several volumes, but only a brief summary of the highlights will be presented here.

I. HISTORY OF INDUSTRIAL EDUCATION IN THE UNITED STATES

The first truly Industrial Education was introduced into the public schools of the United States in 1880 by Dr. C.M. Woodward and Dr. J.D. Runkle - though earlier forms of shopwork, such as that thought at Worcester County Free Institute, existed as early as 1868. The new area of shopwork was called manual training and reflected the current Manual Labor movement and the effect of the Imperial Technical School of Moscow's display at the Centennial Exposition at Philadelphia in 1876. (2:316)

The manual training consisted of exercises in wood and metal with all students working on the assigned exercises at the same time. The exercises consisted of a number of wood joints and of vise work in metal. The program was developed to train the hand and the mind. (2:317)

For a number of years the work varied little from that adopted from the Russians. In the year 1886, however, Gustaf Larsson brought to the schools of Boston a type of manual work known as Sloyd. The chief differences of Sloyd was that instead of a set of gradual exercises, it was the making of useful household articles. Here too the order of teaching was the difficulty of the item. (2:475)

By 1900 a basic change in philosophy of education began to affect manual training. Through the leadership of John Dewey a new philosophy was developing which was basically "learning by doing". As a result there emerged a new program where special consideration was given to the formation of each student's learning. The formality of the "training" gave way to a changing of the name to Manual Arts. Many notable leaders were involved in the Manual Arts Movement, Bennett, Roberts, Bawden, Bonser and Selvidge were a few. Through these men's influence manual arts developed and grew until about World War I. (6:14)

After the first world war the schools of America made an attempt to adjust their shop programs to an industrial-social theory, first advanced by Frederich G. Bonser, Columbia University, in which he stated, "Industrial arts is the study of the changes made by man in the form of material to increase their values and of the problems of life related to these changes". This new concept resulted in another name change and the creation of the general shop or laboratory in which many industrial activities were represented. (6:14)

During and after the second world war the Industrial Arts

was fundamentally important in general education to enable every student to better understand our country and its important activities, materials, products, processes, tools, machines and services. This theroy of thought lasted until 1957, when the United States was forced into the race for space. (8:19-22)

All education in America suddenly was geared to meet the new needs and the emphasis was on the sciences and not on the mechanical aspects of education. It was soon realized, however, that a properly administered industrial arts program would contribute its full share to the total education of the child for modern and efficient living. (8:22)

II. PASSAGE OF THE SMITH-HUGES ACT

At the 1918 annual meeting of the Iowa State Teacher's Association, an address was given by Dr. Wm.T. Bawden, "The Smith-Hughes Act and the Manual Arts". In his address Bawden explained the effect of the new law on manual arts programs in Iowa. He stated:

> Modifications in manual arts work will probably take place in some or all of the following directions:
>
> A. The operation of the law will stimulate a study of the educational values of manual training which we have been giving for general education, in order to see that these values are sacrificed as little as possible in putting activities on a productive basis.
>
> B. It will stimulate a new attitude on the part of manual arts teachers and supervisors as to the aims and purposes of their work.
>
> C. It will stimulate a study of ways and means of making manual arts shopwork, with its limitations, more useful and productive than it has been.
>
> D. Teachers and directors of the manual arts will be stimulated to prepare new plans for their schools,

to be submitted to their superintendents and boards of education, and by them to the State Board, for action.

E. There will undoubtedly be a general upward revision of salaries of teachers of the manual arts. (10:30)

The points covered by Wm. T. Bawden came to be as we shall see in later sections of this study.

III. LEADERS IN IOWA

Charles H. Bailey. Charles H. Bailey was born in Iowa City, Iowa, was a graduate of Iowa State University in 1895 with a B.S. in Civil Engineering, 1895; also of Columbia University degree B.S., with a diploma for manual training in secondary schools. He also attended Cook County Normal School (now Chicago Teacher's College) and Sibley College of Engineering, Cornell University, Ithaca, New York. (12:18a)

For two years he was an inspector and superintendent of construction with a firm in Des Moines, Iowa. According to Bailey, engineers at that time were not in great demand and as he put it, "I began teaching to keep from starving to death. . . ." (11:45) He was appointed supervisor of manual arts in the city schools of Iowa City, from 1897 to 1902. In this teaching position he succeeded the late Dr. Samuel D. Bawden, eldest brother of Dr. William T. Bawden, who was the first teacher of Manual Training in the Iowa City school system. (12:18a)

Bailey was head of the department of manual training, James Millikin University, Decatur, Ill., from 1903 to 1905. In September 1905 he resigned to become director of the department of Manual Training, Iowa State Teachers College, Cedar Falls. In 1909, Bailey became one of the 12 charter members of the Manual Arts Conference of the Mississippi Valley. Also in this year his title was changed from Director of Manual Training to Head of the Manual Training Department. In 1922 the departments of art and manual arts combined and he became the head of this new department. (11: 45)

In 1929 the department name was changed to the Department of Industrial Arts with Bailey as the head. He continued to serve in this capacity until 1943 when he gave up the headship. His final resignation was in the fall of 1953 and on May 20, 1954 he died at the home of his son, Grant C. Bailey, Bartlesville, Oklahoma. (12: 18a)

William L. Hunter. 1896-1939. Born at Dike, Iowa and attended high school in Cedar Falls. He attended Iowa State Teachers College from June 1916 to 1919. He obtained a M.S. degree from the University; Columbia, in 1926. (13:14a)

He taught industrial arts at the University of Iowa, Iowa City, from 1919 to 1925. When he resigned to teach at Bradley Polytechnic Institute from 1926-1928. Since 1928 He remained at Iowa State College, having been promoted to the position of head of the Industrial Arts Department in 1931. (13:14a)

He was known to most, for his poetry, which graced the pages of the Industrial Arts Magazine and the Industrial Arts and Vocational

Education Magazine from tine to time. The following is one of his better known poems: (13:14a)

The general shop is a mighty good plan,
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 just sort of explore,
to see what trades he's best suited for,
to grasp somewhat of a bird's eye view,
the tricks that old folks wish they knew.

The essentail things in more than one line,
not a tradesman - no there's not enough time,
but sufficient to guide the future man,
in making of his own lifes plan.

Present Leaders. A list of present day leaders in the field of Industrial Arts would certainly contain the name of Dr. Howard Reed, State College of Iowa, Cedar Falls. He is the leader in providing the state with teachers for the industrial arts. Since his arrival in 1954, the state has seen many a change in the "nature" of Industrial Education.

CHAPTER III

REVIEW OF THE DATA

Very little data upon the growth trends, or movements of Industrial Arts in Iowa over the last fifty years was available in forms of printed matter easily obtainable. The writer did find that the Iowa Department of Public Instruction publications of 1928, 1930, 1940, and 1948 in Industrial Arts to be very helpful in supplying the much needed data.

I MANUAL TRAINING IN IOWA

Manual Training as stated by the Iowa State Teacher's Association in their 1916-17 publication was as follows:

> From the standpoint of knowledge, the aim of the manual training work in the upper grades is:
>
> 1. To give first-hand usable information on the proper way to use and sharpen the ordinary bench tools of the carpenter. These tools are: the rule and the guage, the steel and try squares, the plane, the cross-cut and rip saws, the hammer, and the brace and bit.
>
> 2. To teach the child to make and to read full-sized and simple drawings.
>
> 3. To give the children information with regerence to the use of nails and screws in fastening parts together.
>
> 4. To give a knowledge of woods, finishes, and paints as necessary, at least for ordinary home

and farm work.

5. To give a knowledge of squaring joints, morticing, etc. (7:111)

In addition to the statement of aims presented above, the manual training division of the association also pointed out that manual training was making steady progress as a regular subject in the schools. Table I shows a study to support such a claim. This study was soon to appear as part of a bulletin of the United States Department of Education. (7:112)

Salaries of Manual Training teachers also increased during this time in Iowa History as can be seen from Table II. Listed here are only the salaries of Manual Training supervisors-but compared to those of Art and Home Economics the Manual Arts were higher. Also note how Des Moines (in red) compares with other mid-west cities of comparable size. (7:112)

II MANUAL ARTS IN IOWA

Sioux City. Students of East Junior High School of Sioux City during the school year 1918-19, answered a questionnaire for the purpose of gathering data for guidance and for manual arts information. One of the questions called for the three subjects liked best by the pupil. Table III shows the first choices made by girls and boys in this junior high. (9:358)

It is interesting to note that manual arts was the second most enjoyed subject for boys and the fourth for girls. When the

TABLE I

PERCENTAGE OF CITIES OFFERING DIFFERENT KINDS OF WORK IN MANUAL TRAINING. BASED ON RETURNS FROM 142 CITIES.

Kinds of Work	Grades 1	2	3	4	5	6	7	8	I	II	III	IV
Paper folding, etc.	78	72	43	27	11	7	6	6	..	..	...	..
Cardboard construction.	23	33	44	42	27	13	9	11	1	1	1	1
Raffia, basketry.	16	19	27	36	31	22	8	8	3	1	1	2
Weaving, textiles.	23	27	28	18	9	5	3	4	2	3	3	3
Knife, coping saw.	1	1	3	6	21	20	10	8	1	..	...	..
Clay, plasticine.	27	23	13	8	5	6	3	4	3	2	2	1
Leather, stamp, etc.	..	..	..	1	1	1	3	6	13	11	9	6
Art metal work	..	..	..	..	1	2	1	4	8	6	9	8
Jewelry	..	..	..	..	..	..	..	1	6	4	4	6
Printing, book binding.	..	..	1	2	4	6	9	10	8	7	6	5
Joinery, cabinet making.	..	..	..	..	8	37	65	69	64	40	23	23
Woodturning, pattern making.	..	..	..	..	..	1	5	13	27	47	23	18
Foundry.	..	..	..	..	..	1	1	1	3	7	8	5
Machine shop.	..	..	..	..	..	..	..	1	3	5	15	16
Forge Shop.	..	..	..	..	..	..	..	1	5	9	11	4
Concrete construction.	..	..	..	..	..	..	4	3	3	1	1	4

TABLE II

SALARIES OF MANUAL TRAINING SUPERVISORS, OR DIRECTORS IN MIDWEST CITIES IN 1920-21

Cities	Art	Home Ec.	Manual Training
Chicago.	3750	4500	5000
Cincinnati.	3600	3200	3500
Cleveland.	3560	3560	3680
Columbus.	2625	2250	2250
Dayton.	2050	2550	2550
DesMoines.	2412	2340	3400
Detroit.	4000	4000	4000
Indianapolis. . . .	3500	2300	3500
Milwaukee.	3840	3840	3840
Minneapolis.	2750	2500	3300
Omaha.	2200	....	2700
St. Paul.	2600	2500	3500
Toledo.	2500	2200	3750
Youngstown.	2850	2250	2975
NATIONAL AVERAGE. .	2874	2740	3305

*Compiled by Bertha Aebb, United States Bureau of Education

choices for girls and boys are added manual arts was also the second most enjoyed subject by both. (9:358)

The second area of study involved the occupation of the boys father and three choices of future vocations for the boys. Table IV shows the occupations of the fathers and Table V shows the future vocational choices made by the pupils. Table VI, then shows the correlation between what the fathers occupation was and what the boy was going to choose as an occupation. (9:358)

A comparison of the number of cases in which the boy planned to follow in his fathers footsteps shows that about 5% were planning to do so. Also noting the occupations of the fathers in Table III, which shows the majority involved in industry--one may draw the conclusion that the manual arts program was not encouraging the pupil into industry or that the manual arts program was opening up new avenues of interest in the field of work. (9:359)

Iowa City. Professor King of Iowa State University collected data regarding the vocational choices of 109 pupils of the Iowa City, Ottumwa, and Dubuque High Schools. In compiling the results he compared them with results on similar questions asked by Sioux City. Table VII shows the findings grouped as per cents of the total number asked. (9:359)

About this same time Professor Lewis of Iowa City carried out an investigation of boys who had had manual arts and who had dropped out of school. Table VIII shows the findings as compared to Sioux City. (9:360)

TABLE III

FIRST CHOICE OF SUBJECTS.

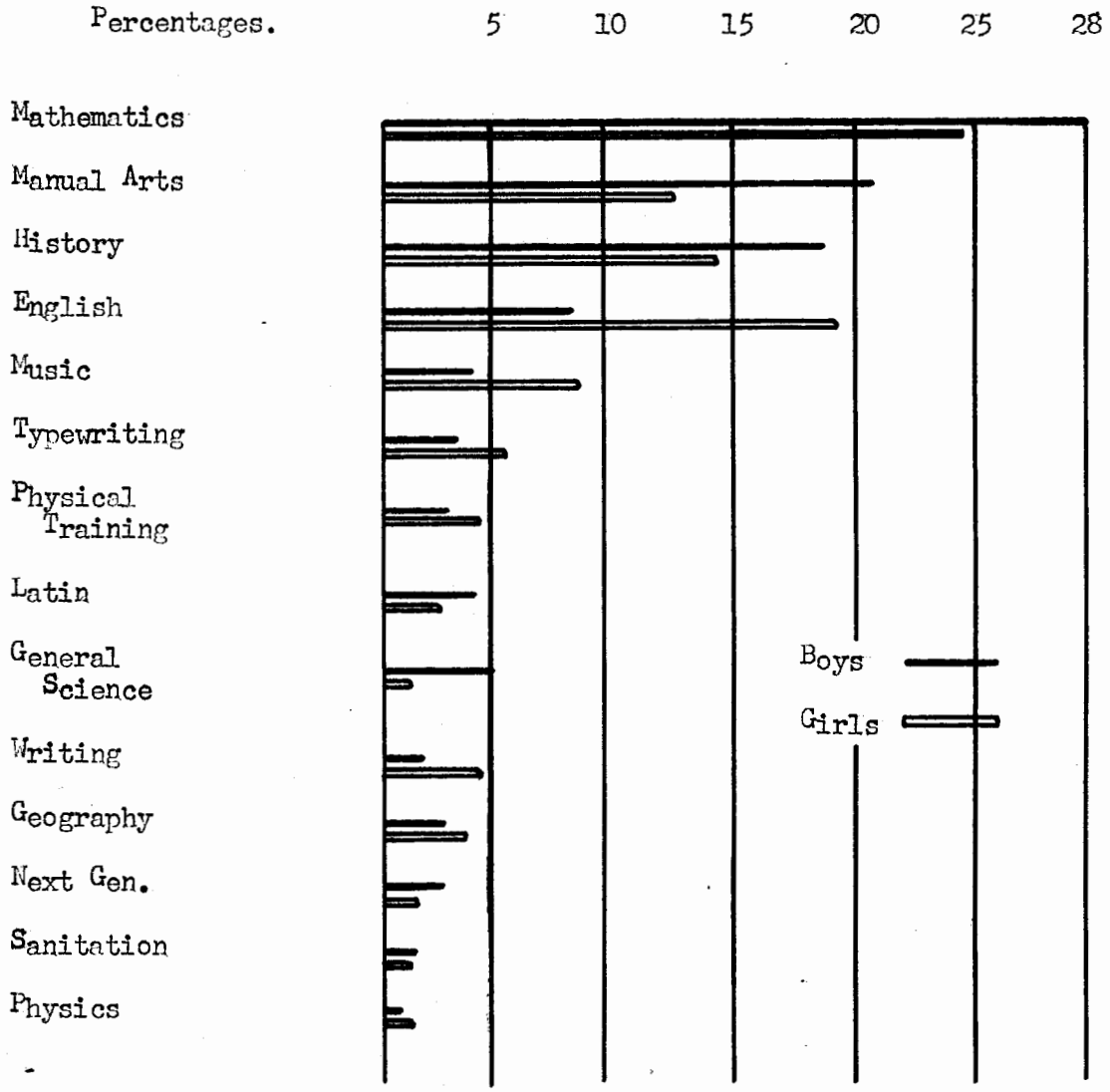


TABLE IV

OCCUPATIONAL DISTRIBUTION OF FATHERS

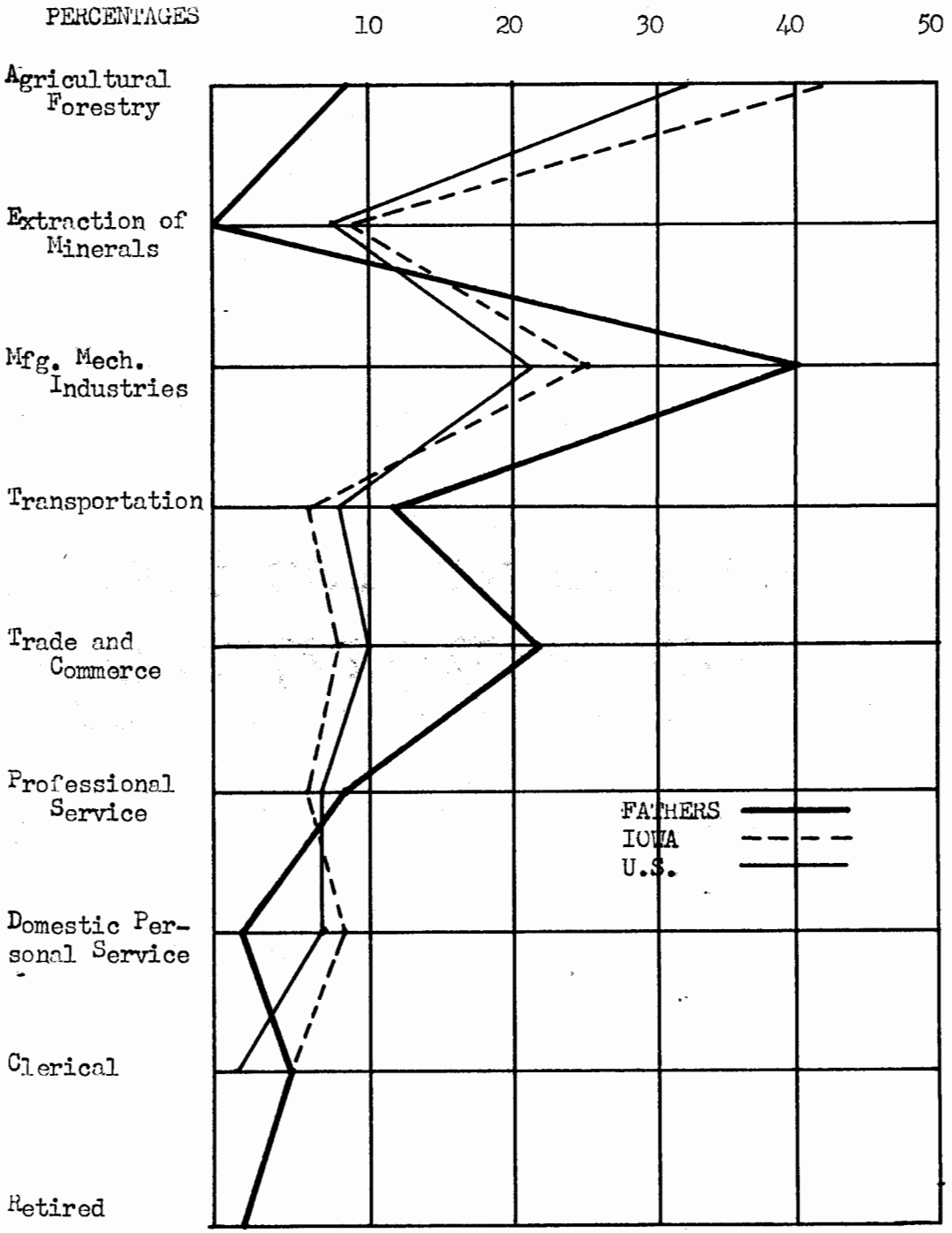
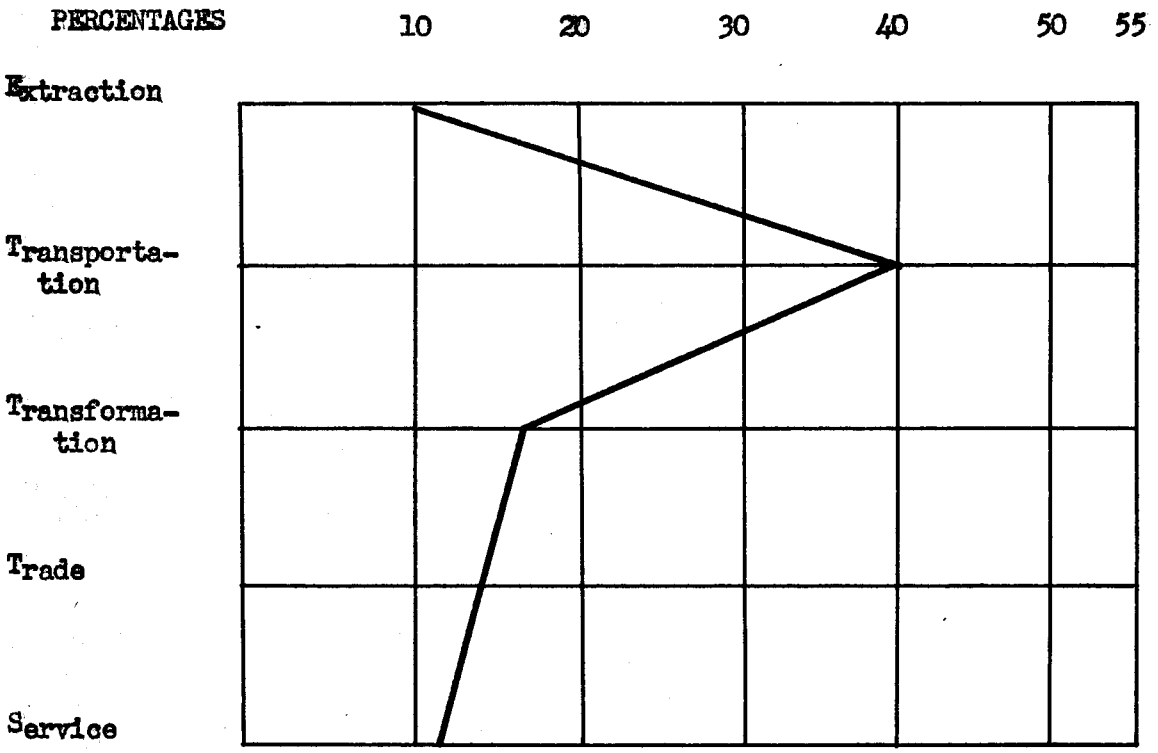


TABLE V

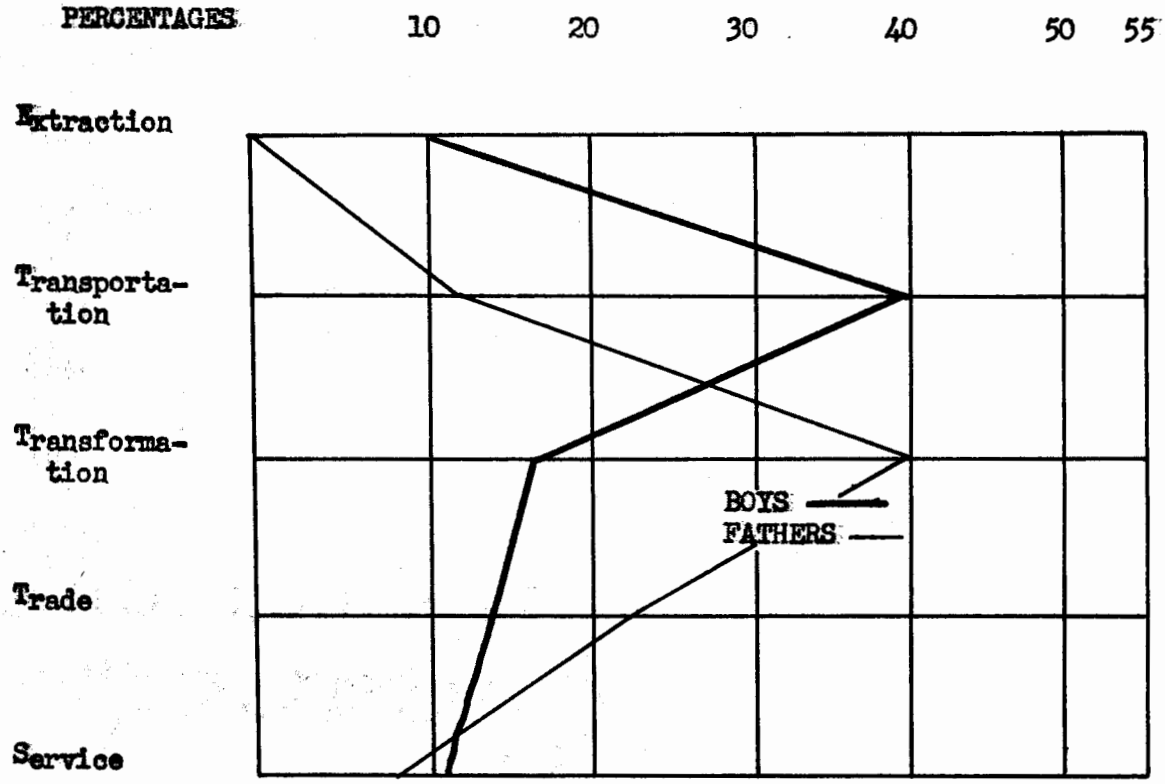
CHOICES OF VOCATIONS IN ORDER OF PREFERENCE



*This table shows the distribution of 69 different occupations into the five classifications shown.

TABLE VI

COMPARISON OF FATHER'S OCCUPATION
TO BOY'S CHOICE OF VOCATION



*A comparison of the number of cases in which the boy planned to follow the work in which his father was engaged shows that about 5% had so planned.

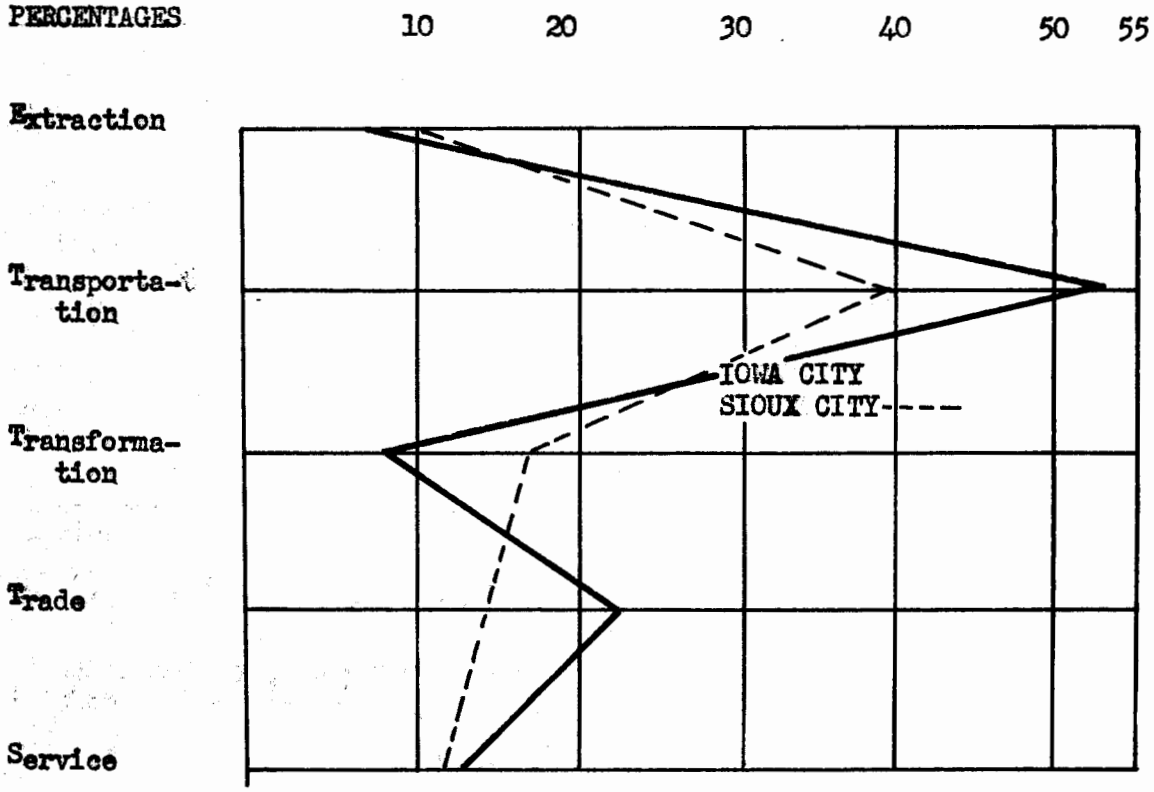
TABLE VII

COMPARISON OF OCCUPATIONAL CHOICES WITH THOSE OF PUPILS OF OTHER SCHOOLS.

	Iowa	E. Jr. High
Different Occupations chosen by all	71	104
Different Occupations chosen by Boys	54	69
Different Occupations chosen by Girls	30	48
Percentage of Boys Undecided or blank	23%	5%
Percentage of Girls Undecided or blank	23%	3%

TABLE VIII

COMPARISON OF IOWA CITY DROPOUTS TO
SIOUX CITY MANUAL ARTS CLASSES



III. INDUSTRIAL ARTS IN IOWA

The Iowa State Department of Public Instruction issued its first curriculum guide for the industrial arts in 1930, one year after the Iowa State Teachers College changed its name from "Manual Arts" to "Industrial Arts". (6:12)

Four years later, in 1934, 84 percent of all large independent schools and 76 percent of all smaller consolidated high schools were offering industrial arts as a seperate subject area. Also, in 1934, 17 percent of all high school students in Iowa were taking some sort of Industrial Arts. (4:56)

Seperate Industrial Arts offerings for 1934 in the state were as follows: (4:57)

large independent schools — 13 different areas
small independent schools — 6 different areas
consolidated high schools — 6 different areas

In 1940, 6 years later, a cooperative study of the industrial arts curriculum was made by teachers over the state and resulted in a mimeographed handbook, often reffered to as "The Blue Book". These information devices were valuable and filled a need for curriculum guides over the state. (6:12)

Using the 1934 figures and the 1940 guide, the State Department published a study showing the variation in curricular offerings and enrollment from 1934 to 1944. Table IX shows some of these findings. It was found that the percent of schools offering Industrial Arts dropped from 70 to 63 during the ten year period. (6:57)

This drop was no doubt caused by the shortage of teachers in the field. The tendency in all schools was toward a reduction in the offerings, the large districts, however, ran opposite to this tendency, as there was a 10 percent gain in that group. It can be noted from Table IX, the total numbers of different offerings in this field increased from fourteen in 1934 to thirty-seven in 1944. (4 : 63)

Again in four years, 1948, the State Department issued another curriculum guide under the chairmanship of Mr. W.H. Wagner of Iowa State Teachers College. The committee recommended the following areas of instruction: (6:74-112)

1. Planning and Drawing
2. Woodworking
3. Metalworking
4. Electricity
5. Crafts
6. Home and Farm Mechanics
7. Automobile Mechanics

Special attention was given to planning and equipping the general shop for teaching the above areas.

After the 1948 curriculum guide was published little attention was given to industrial arts curriculum planning until the State Committee on Industrial Arts Teachers Education became concerned about this. In January 1963 and again in May 1965 this committee published a handout sheet of recommendations for industrial areas to be taught in the school shop. The following is the recommended minimum program for the secondary school program. (14:1-2)

SEVENTH GRADE

Metal
Woods

EIGHTH GRADE

Drafting
Electricity-Electronics

NINTH GRADE

Electricity-Electronics
Graphic Arts
Industrial Plastics
Metal
Power Mechanics
Wood

10, 11, 12 GRADES

Building Construction (wood)
Drafting
Electricity-Electronics
Power Mechanics (to include fluid)
Graphic Arts
Industrial Plastics
Metal

TABLE IX

VARIATION IN CURRICULAR OFFERINGS AND ENROLLMENT FROM 1934 TO 1944

Difference in Percentages	Consolidated		Small Independent		Large Independent		Total	
	1934	1944	1934	1944	1934	1944	1934	1944
Schools Offering Subject Fields	76.55	61.28	63.92	54.92	84.31	94.12	70.49	63.12
Enrollment in Subject Fields	14.54	12.22	12.17	12.57	17.01	21.17	14.26	17.17
Offerings in Subject Fields	6	10	6	12	13	31	14	37

CHAPTER IV

SUMMARY AND CONCLUSIONS

Summary. This study has attempted, (1) to gather information, tracing the history of Industrial Education in Iowa; (2) to show a brief history and relationship between United States history in this field and that of Iowa's; (3) to present certain facts indicating the present status of Industrial Education in the state. It was found that Iowa has had a rich and colorful history in this field.

Conclusions. It is the conclusion of the writer that too long a time has elapsed since the writing of the 1948 state curriculum guide, even though study sheets have been made for the update of such materials. A new and modern curriculum guide should be written to include such areas as; (1) product design; (2) industrial experimentation; and (3) consumer studies.

BIBLIOGRAPHY

A. BOOKS

1. Bawden, Wm. T. Industrial Arts in Modern Education. Milwaukee: Bruce Company, 1934.

2. Bennett, C. A. History of Manual and Industrial Education 1870 to 1917. Peoria: Bennett Book Company, 1937.

3. Gross, C. H. School and Society. Boston: D. C. Heath and Company, 1962.

4. Iowa Dept. of Public Instruction, A Proposed Design for Secondary Education in Iowa. Des Moines: 1947.

5. Iowa Dept. of Public Instruction, Course of Study for Elementary Schools. Des Moines: 1928.

6. Iowa Dept. of Public Instruction, Industrial Arts. Des Moines: 1948.

7. Iowa State Teachers Association, The Positive Program, Des Moines: 1916.

B. PERIODICALS

8. Hostetler, Ivan. " Manual Arts, 1914 - Industrial Arts, 1964," Industrial Arts and Vocational Education, Vol. 53, May, 1964.

9. Osburn, B. N. " A Study of Data From a Vocational Questionaire," Industrial Arts Magazine, Vol. 8, September, 1919.

10. Windoes, R. E. " Iowa Teachers Discuss Federal Act," Industrial Arts Magazine, Vol. 7, January, 1918.

C. THESIS AND ARTICLES

11. Logan, J. L. Industrial Arts At The Iowa State Teachers College. Thesis I.S.T.C. June 1957.

12. Personal News. " Death of Charles Bailey," Industrial Arts and Vocational Education. Vol. 44, January, 1955.

13. Personal News. "William L. Hunter Dies," Industrial Arts Magazine. Vol. 28, September, 1939.

14. State Committee on Industrial Arts Teacher Education. "Recommended Program for Industrial Arts in Iowa," January, 1963, Revised, May, 1965.