

AN ABSTRACT OF THE THESIS OF

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(Name) (Degree) (Major)

Date Thesis presented May 8, 1953 --

Title ----- A HISTORY OF INDUSTRIAL ARTS -----
----- IN OREGON TO 1950 -----

Abstract Approved Redacted for privacy
----- (Major Professor) -----

Industrial arts has had a long history in the world. Though hand work in school shops has been called by many names, the elements have been similar. This study is an attempt to relate the elements of hand work to industrial arts, as evolved through the years in Oregon education. The research consisted of a study of documents to glean the history of industrial arts in Oregon schools, including the public elementary and secondary schools as well as colleges, and to compile relevant information in convenient reference form.

The forerunners of industrial arts pointed the way to a better form of educational manual work. Bishop Scott Academy in Portland introduced manual training about 1898, the oldest recorded use in an Oregon school. Freehand and mechanical drawing and manual training or shop work were among electives which would meet admission requirements, in 1899, to the University of Oregon. Monmouth Normal School announced a department of manual training in the same year; sloyd was taught. The other Oregon normal schools included manual training about 1904.

Sloyd work consisted of a series of exercises in the manipulation of tools. Each exercise was a complete project in itself. Manual training followed sloyd, with only a slightly different emphasis. Manual training combined the elements of drawing with the construction of the project.

"Corvallis State Agricultural College" presented a four-year course in "shop work" in 1893-94. In 1913 Oregon State College provided a program of instruction for teachers of shop work, but the term "industrial arts" was first used in 1915 as the label for a four-year degree course in industrial arts teacher education. "Shop courses" were first listed under the department of mechanical engineering, with the Department of Industrial Pedagogy responsible for "special methods in manual training." The Master of Science degree in industrial arts was first announced in the Oregon State College Catalog of 1928-29. In the fall of 1950, following thirty-five years of evolution and improvement, the professional curriculum for industrial arts was transferred to the School of Education. Technical courses and services are furnished by the School of Engineering in cooperation with the School of Education.

In the early applications at the secondary school level, hand work was first introduced through the enthusiasm of several principals. In many cases the principal was able to set aside a portion of one day a week to teach boys the use of hand tools. In several schools enthusiastic boys helped build a workshop, either in the form of a shed or by clearing a space in the furnace room. Results convinced the school boards of the need to provide better facilities. There were many instances in which boys brought tools from home and the school board furnished lumber; others used scrap lumber. A few large districts cooperated in hiring an itinerant teacher, usually a tradesman with a "bent" for teaching, to spend part of a day at each school, thus obtaining the services of a trained person at minimum cost.

Manual training was introduced in Portland grade schools in 1904, under William J. Standley, an English cabinet maker. It was well received by the board of directors, who hoped to extend the training into the high schools and broaden the presentation for the grade schools the following year. For many years thereafter, contests were held as an incentive for the boys to do their best work, and merchants offered prizes of value. Boys from schools without work shops marched in a group to other schools where shops were available. All tools were kept in a chest instead of in the benches.

In 1915 the children from a few rural schools went to town schools one-half day each week, for instruction under a special teacher. By 1916, college-trained industrial arts teachers were available and the McMinnville manual training department employed such a teacher. It was his duty to take care of all repairs for the school district and to erect wood sheds and play sheds with the boys of his classes. Girls were also taking a course in woodwork at Grants Pass, in 1917. Boys of the manual training department built a garage for a citizen of Eugene, including a concrete drive.

School shop facilities were used in both world wars, for the construction of equipment for hospitals and camps, and for training purposes.

Household mechanics was introduced in the Portland schools in 1921. "Craft shops" were organized around 1945 where both boys and girls could work with a variety of materials.

Industrial arts has grown from its earlier objectives of minor hand skills centered about "coordination of hand and eye," to a broader concept including the more common present-day objectives as follows:

1. To explore industry and industrial occupations through experiences in the basic processes of industry.
2. To develop a degree of skill commensurate with avocational and general handy-man abilities.
3. To develop recreational and avocational opportunities and outlets.

4. To encourage a development of creative expression and the use of the materials of industry.
5. To develop an appreciation of good craftsmanship.
6. To contribute to the objectives of consumer knowledge so that all may profit in the selection of goods, materials and services.
7. To foster desirable social relationships.

ADVANCE BOND JULY

A HISTORY OF INDUSTRIAL ARTS
IN OREGON TO 1950

by

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A THESIS

submitted to

OREGON STATE COLLEGE

in partial fulfillment of
the requirements for the
degree of

MASTER OF SCIENCE

June 1953

APPROVED:

Redacted for privacy

Head of Department of Industrial Arts

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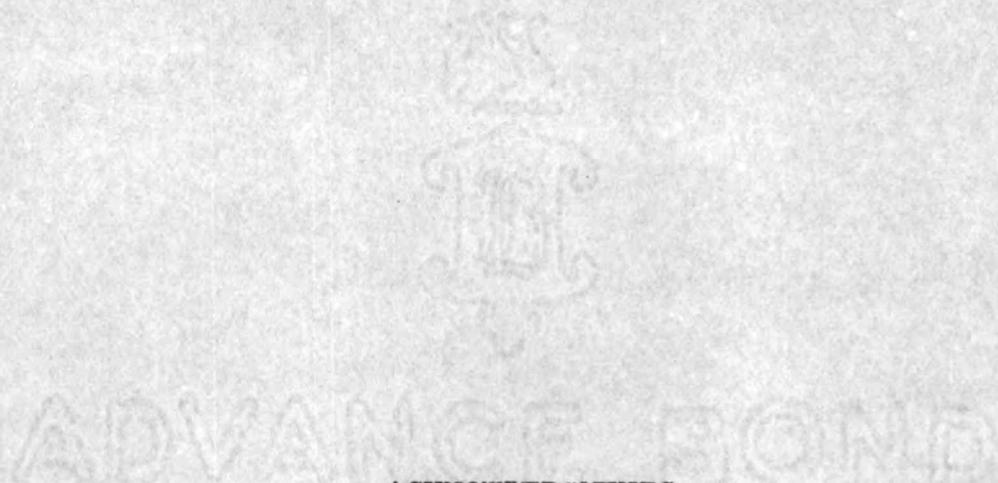
Chairman of School Graduate Committee

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Date thesis is presented May 8, 1953

Typed by Jane J. Bower



ACKNOWLEDGMENTS

The author wishes to express his appreciation to George B. Cox, Professor of Industrial Education at Oregon State College, for his assistance in this study.

The author dedicates this thesis to his mother who has encouraged him to further his education.

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A HISTORY OF INDUSTRIAL ARTS
IN OREGON TO 1950

CHAPTER I

INTRODUCTION

Industrial arts in some form is as old as the human race. That the young should learn from watching and imitating the things done by the old was necessary for survival. The use of the stone as an implement was discovered and handed down for generations until a better way was learned.

Man was one of the weaker creatures of the animal kingdom and lacked a natural body covering. He learned to kill other animals to get their furs for protection from the cold. Man is more civilized now, but he still needs the furs for protection in some climates, and for adornment in others. He has handed his methods down from generation to generation.

Furs, alone, were not enough protection; man learned to build fires to warm his body and keep animals from his cave. Fire was used to light the way in the dark, and ways were found to start fires again after rains had put them out. The use of fire had to be passed on to bring civilization to its present level.

Food became scarce around the cave dwellings and man had to go farther from home. He had to devise some form of

shelter for protection from the elements and the animals while on his hunting trips. Shelters made possible the moving of the hunter's family to the place where food was plentiful.

Man still requires food, clothing, and shelter. He had to discover ways of providing these things: he then passed his knowledge on to make it easier for succeeding generations. The act of passing these acquired skills and knowledges and giving to succeeding generations a small sampling of this learning that they might profit from the experience of others is the basis of instruction in industrial arts for today's youth. These learnings must be acquired through direct action for knowledge in the industrial arts cannot be gained vicariously.

Statement of the Problem

The industrial arts in some form have a long history. Although not formally introduced into the curriculum of the early schools, industrial arts was presented in the home by having the boys and girls observe and imitate the actions of their elders.

The forms and applications have changed with the changing times and the various ideas of different people from many countries. Sloyd, handwork, hand-and-eye training, manual training, manual arts, and vocational arts are some of the earlier terms used in this country.

The present study aims to give the history of industrial arts in the schools of the state of Oregon to the year 1950. The author hopes to trace the development back to some of the training given in the early pioneer schools, and bring this training to the present time.

Sources of Facts

Some of the material is from personal interviews with persons who had a guiding hand in formulating the present industrial-arts program as used in the schools of Oregon. Much information is from historical writings, published accounts, school records, and public documents.

Methods Employed in the Study

The historical method of research was used throughout, to obtain facts and data. This seemed to be the only method of arriving at the information. Interviews were used as much as possible to get reminiscences and first-hand information.

Definitions of Terms Used in the Study

Some of the terms are rather hard to define in such a way that all educators will agree to the meaning given to each term. This disagreement is caused from the fact that in different periods in the history of handwork the terms have meant different things.

The "Russian system" of handwork training consisted of a graded series of exercises that taught some of the basic skills. The skills were learned and time was spent in doing work, but no project or worth-while item was made of the material.

The "Sloyd" method was to teach through a series of graded exercises each of which was a complete project in itself. The projects were to stimulate interest and to show the child that his work would be of some value. The child was supposed to be better stimulated toward his academic work after doing some handwork. The sloyd system was better adapted to the lower grades and the use of simple tools. The sloyd knife was the primary tool. It was a simple tool and similar to other knives found in every home.

Manual training aimed at the all-round development of the mind and body through the use of handwork. The student was given some freedom of choice in the elements of design and selection of projects. The boy learned the elements of drawing by making a drawing of the project rather than by using a plan furnished by the instructor.

Vocational education goes a step farther than manual training. Vocational education tries to train the student well enough in some specific field so that he can be proficient in the skills of that specific trade or field of work. The student is trained in the use of tools and machines of that one trade to the exclusion of all others

for as long a period of time as may be needed to give trade or vocational competence. The training is intensive in a limited field rather than extensive to give a survey of many fields.

Industrial arts combines the hand skills with teaching the concept of good design, consumer education, and appreciation of good workmanship. It is designed to explore the several major fields of industry, to give the student some idea of how the members of society use basic raw materials, tools, and processes in industry. It is developmental, for general education, rather than specifically for trade proficiency in a particular vocation. It may lead to vocational interests and applications for some, to hobbies and recreation for others.

The foregoing terms constitute the phases leading to the present concept of industrial arts, and will be covered more fully in the background chapter.

CHAPTER II

BACKGROUND

The forerunners of industrial arts pointed the way to a better form of educational manual work. Various ways of teaching handwork have been tried and put aside. Some of the reasons for change can be seen in the definitions given by the educators for the many differences in ways of doing work.

Sloyd

Sloyd teaches the use of tools and implements in making models and simple articles of use from wood, pasteboard, and paper. The sloyd system of educational manual work consists of a series of exercises in the manipulation of tools, with the work graded from the simplest to the most complex. It is to be considered as a subject to be placed alongside the so-called "knowledge" subjects to aid in the education of the powers of mind and body.

Gustaf Larsson, a teacher of sloyd, said:

The Sloyd method is generally known as consisting of a systematically graded course of exercises in the use of tools and the production of useful projects.

...the individuality of the workers is always recognized and as soon as a fair amount of skill in the use of tools has been established, it is recommended that individual projects be selected by the pupils (24, p. 387).

In an article on Swedish sloyd, Allison A. Farley pointed out that sloyd was adapted to a farming population as work to be done at home on long winter evenings. The men whittled toys, manufactured furniture, and made farm implements. The factory system, therefore, was slow to develop. Schools were established for "handicrafts (huss slojd), slojd meaning manual dexterity" to make for manual dexterity generally and not in any given art.

The sloyd system of manual training had as its social aims an effort to re-establish domestic industry.

Dr. G. Stanley Hall disagreed with the sloyd system of education. He said that:

...sloyd is the most sophisticated of all types of industrial education. It is purely mechanical. A manual dexterity without being wedded to enthusiasm is of no use (48, p. 99).

Manual Training

Manual training, as handwork was later called, followed sloyd and had a different emphasis. Harry G. Good, in his history of western education, points out that:

The early purposes of manual training and of drawing instruction were the same, to serve industry; the methods of teaching also were similar, and the two subjects were often taught in close association with each other (16, p. 505).

Monroe's Cyclopedia of Education defines manual training as being:

...all forms of constructive handwork when used as an agent in general education. When used

in the broadest sense, instruction in domestic art and science, and constructive work in various materials in the lower grades are included. In a narrower conception, the term is restricted to work with mechanical tools given to boys (37, p. 124).

Other ideas and aims of manual training are given from different sources:

Manual training is the making of mind through motor activity. Manual training does not seek to fit the boy for any particular trade, but to prepare him for life by causing him to live.

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The manual training advocate of today would have the child pass through just enough of the experiences of the past that he may fully appreciate the advantages of the present (11, p. 8).

Since the aim of manual training is to train the hand in order that it may express the ideas of the mind, that form of work which is designed to call for the greatest variety of exercises, has been chosen (7, p. 143).

Our need is something which shall keep the children at school throughout the public course including the high school. This want is, as I believe, to be supplied by the Manual Training School. The Manual Training School is simply a high school with the manual feature added. The manual feature can be added to any high school.

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The manual training school fills the place of the apprentice system. ...The apprentice in a shop is a hewer of wood and drawer of water, the last and least important individual in the shop (21, pp. 296-297).

In an editorial in 1908 is still another definition of manual training.

Manual training is broader and more far-reaching than teaching trades. It has been defined as the creation of industrial intelligence. Manufacturers complain that the average young man who applies for a job has not this intelligence and to this is due the demand for manual training and upon the public school has fallen the burden of supplying this motor action (19, p. 178).

In 1913, a note appeared which shows that the terms manual training and industrial arts might be used interchangeably.

Increased interest in art metal work as a manual training subject is evidenced by its introduction this year into the curriculum of several schools, among them the College of Industrial Arts in Denton, Texas (6, p. 168).

Manual Arts

Manual arts was a change to include the concept of beauty and design in construction.

Good tells of the reason for substituting the word "arts" for "training."

Only in 1894 in the naming of the Macy Manual Arts Building at Columbia University was the word 'arts' substituted for the word 'training,' to embrace the ideas of beauty, utility, and skill in one concept (16, p. 506).

Charles A. Bennett tells of the first recorded use of the term "manual arts."

On June 6, 1881, John S. Clark of Boston, delivered an address before the Philadelphia Board of Trade and the Franklin Institute on the subject 'Industrial Education from a Business Standpoint.' In speaking of the essential elements in Industrial Education, he grouped them under three heads: (1) science,

(2) art, (3) the manual arts. Under art, Mr. Clark placed 'graphic and aesthetic art.' ...Under manual arts he placed the 'knowledge of the fundamental manipulative processes in dealing with raw materials,' such as bending, welding, punching, planing, splitting, sawing, turning, joining, and the like. This may not have been the first use of the term in that sense, but it is the first we have seen recorded (4, p. 308).

James Parton Haney tells of his reason for wanting a change in terminology.

My plea was for a union under a new name. Manual training was misleading, for it apparently excluded drawing--the first of all agents in the education of the hand. 'Manual Arts' appeared as a more comprehensive term and one that permitted the including of all desirable subjects that psychologists dub 'motor' (17, p. 229).

In an editorial in 1914, there was an urging for college courses in the manual arts.

Just as there are college courses in general science, and engineering, and pedagogy and agriculture and domestic science and many more, so there may appropriately be college courses in the manual arts and the pedagogy pertaining to these arts (1, p. 223).

Industrial Education

Industrial education is used to mean education for entrance into industry.

Robert O. Small, deputy commissioner of education for Massachusetts, said:

We who are interested in industrial education are using the term to mean that type of education which has for its aim the qualifying and fitting of a boy or girl to go into industry and earn a living wage (40, p. 321).

Charles H. Keyes, president of Throop Polytechnic Institute, Pasadena, California in 1895, places a slightly different meaning on the term.

Industrial Education includes both manual training and technical instruction. By the former is meant training the mind to use hand and eye in connection with other sense organs in acquiring knowledge from well-planned and graded contacts with objects, in giving expression to the thought stimulated by these contacts, and in transforming, by tool and machine, crude matter into forms of beauty and utility. Its aim is the development of conscious, skillful energy and the subordination of every other power of body and mind to the action of the will. Its chief product is never the accurate drawing, the beautiful sketch, the well-made garment, the well-cooked dinner, the exactly fitted joint, the perfectly adjusted machine, the intricate and ornamental iron-work, the thing of beauty which seems to speak to us from wood or clay; but it is the self-controlled, self-centered young man or woman, who 'has learned how to live,' and prepared himself to easily learn 'how to get a living.'

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Technical instruction, on the other hand, is demanded in the trade school. Dr. Balliett of Springfield, indicating the difference in function between these schools, says, 'The muscular movements involved in the handling of tools are made at first by nerve energy that comes from the brain; but after these movements become automatic by practice, the brain relegates them almost wholly to the spinal cord. Such movements cease to be of much educational value when they are no longer directed consciously by the brain. Any process in manual training ought to stop when it ceases to be brain work. Here we have the difference between the manual training school and the trade school. The manual training school stops when the point mentioned is reached. Its purpose is purely educational. The trade school continues the training in skill, even after the process is

relegated to the spinal cord, in order that the person may develop the power of producing as large a quantity as possible of goods of high grade of finish in a given time for the market. Its purpose is economic' (23, pp. 731-732).

William T. Bawden places industrial education as a branch of vocational education.

Manual arts, as the introductory, general-education phase of industrial education (a branch of vocational education), refers to a program of practical experiences in various lines of shop work and drafting, combined with related technical information, drawn from the field of the mechanical trades and industries, conceived and offered primarily as a part of the broad general-education program of the elementary school, junior high school, and senior high school, considered as a unified whole.

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Parenthetically, let me say that I recognize that many educators prefer the term, industrial arts, and to this I can see no objection. The current literature of our field treats these two terms as practically synonymous (3, p. 3).

Industrial Arts

Industrial arts is a part of the practical-arts program of secondary education. In a changing world, the student learns many things through the schoolroom class that his ancestors learned through application. He learns the use of tools and the application of various materials to different situations.

Maris M. Proffitt gives a meaning for industrial arts:

Industrial arts is a phase of general education that concerns itself with the materials, processes, and products of manufacture, and with the contribution of those engaged in industry. The learnings come through the pupil's experiences with tools and materials and through his study of resultant conditions of life. It is a curriculum area rather than a subject or course, being comparable in this respect to the language arts (35, p. 1).

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Largely manipulative in character yet affording content of an informative, technical, and social kind, industrial arts contributes to complete living because it meets needs that are real and satisfies impulses that are inherent (35, p. 2).

Summary

Charles A. Bennett, in a study of terms used in industrial education and a history of handwork, wrote:

Probably the original meaning of 'art' was skill in fitting or joining. Art is the employment of given means to effect an end, or art is the system of rules and methods by which a certain type of result may be accomplished. It implies skill in doing and often skill in producing a result that has beauty of form, design, or color.

To 'educate' is to bring up, to nourish, to lead forth, to cultivate. Education, then, is bringing up, rearing, breeding, imparting knowledge, cultivation of mind, emotions, manners.

'Industrial,' as an adjective, means pertaining to productive labor or the manufacturing of commodities.

'Manual,' as an adjective, has the simple meaning--pertaining to the hand.

The word, mechanic, is applied to a maker of machines, to one who works according to fixed laws, and to a skilled worker with the tools of construction.

The idea behind the word 'train' is to drag along, to trail, to bring into some desired course by means of some process of instruction and exercise. 'Training' then is instruction coupled with practice with a definite end in view.

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The term 'mechanic arts' first came into prominent use in the field of American education with the establishment of the School of Mechanic Arts in connection with the Massachusetts Institute of Technology in the year 1876, though the term had been used in the Morrill Act of 1862, and colleges of 'Agriculture and Mechanic Arts' had been established in several states. 'Mechanic Arts' seemed to be just the right term to express the purpose of the Boston school because the aim of that school was very definitely to train young men to become skillful in the arts of mechanical construction--the arts behind and involved in the trades of the machinist, the pattern maker, the foundryman, the blacksmith, and the carpenter. Such skill was chiefly hand skill, but to some extent it was skill in the use of machines.

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In this connection it is worth noting that the use of the word 'art' in 'mechanic arts' retains its earliest significance, namely, skill in fitting or joining. The same is true of the term 'mechanic,' which means pertaining to machines or working according to fixed laws.

The term 'manual training' has quite a different history. Being so unrestricted and general, even in its very early use, and

becoming immensely popular, it has suffered from friends and enemies alike.

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Just as the term mechanic arts came into general use because it was in the name of a popular school, so manual training, as a term applied to a specific subject or kind of education, came into the educators' vocabulary chiefly because it appeared in the name of the St. Louis Manual Training School that opened its doors to students in 1880. Its selection for the name of this school by Dr. Calvin M. Woodward may reasonably be looked upon as the origin of this term as applied to a special subject or branch of education.

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Many years before that time, in 1826, William McClure of New Harmony fame had used the term manual training in the same way that Dr. Woodward had used it, in order to distinguish school work involving construction work with the hands, from other school work. At a later period, Dr. Woodward admitted that perhaps some other term might have been better, but it was then too late for him to change it. All that could be done to correct any possible mistake in the name was to define the term so as to avoid misapprehension and disarm prejudice.

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The term 'manual arts' has a somewhat different history. Instead of beginning its popularity in the name of a school, it started in the name of a building, the Macy Manual Arts Building of Teachers College, Columbia University, in 1893. A sketch of a building to house the departments of art and manual training had been made; Mrs. Josiah Macy had provided the funds to construct the building; a name for the building was wanted. About that time, John S. Clark of Boston had made a public address in which he had used the phrase 'manual arts' to indicate the various types of handwork that were coming into the schools in addition to and related to drawing. His use of the term to cover a broader

field than was understood by many leaders to be included in manual training, suggested the use of that term for the Macy building and also as a useful name for a department of the College that included both art and manual training.

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In a few months, after the term was adopted at Teachers College, Dr. James Parton Haney had adopted it for his department of work in the public schools of New York City. Others followed. Thus its popularity began and gradually continued.

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Like the term manual arts, the term 'industrial arts' received its first impulse toward popularity at Teachers College, Columbia University, but, instead of originating in the name of a building or a college department it grew out of a new philosophy, a change of viewpoint, a shift in emphasis, especially in the lower-grade work of the elementary schools. In 1904, Charles R. Richards wrote an editorial for the Manual Training Magazine (Vol. VI, pp. 32-33) proposing the substitution of the term industrial arts for manual training. One sentence in that editorial reveals his chief reason: 'The gist of this change of view is the fact that we are rapidly leaving behind the purely disciplinary thought of manual training. The word Art, he said, is inclusive of both technical and esthetic elements, and the qualifying word points specifically and comprehensively to the special field of our material.'

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The common acceptance and official use of the term industrial arts at Teachers College came with the teachings of Frederick G. Bonser, who indefinitely enlarged its scope by defining it as 'the study of sources of materials, methods of changing materials, factory organization, inventions, employer and labor

cooperation, distribution of products, and regulative measures to secure justice alike to producers and consumers.' All these he added to, 'that work in design, construction, decoration, and experimentation which promotes growth in coordination of hand and eye, general manipulative dexterity, freedom in handling materials and tools, and esthetic appreciation of products' (5, pp. 233-241).



ADVANCE BOND

C. H. BROWN Paper

CHAPTER III

INDUSTRIAL ARTS IN OREGON'S STATE SYSTEM
OF HIGHER EDUCATIONEarly Oregon Schools

The first school of any kind in the Oregon territory was at Fort Vancouver. John Ball was an American school teacher who had come to the Fort in 1832 with the party of Nathaniel J. Wyeth. Ball was employed by Dr. McLoughlin to teach his son and the other boys at the Fort. The subjects taught were grammar and arithmetic.

The first school south of the Columbia River was the Mission School, taught by Philip L. Edwards in 1835, near old Champoeg. The school continued amid hardships until 1838. The students were taught to speak English and several could read.

The first school legislation came many years later. Gaston gives an account of the first decisions toward free schools, as follows:

March 3, 1849, Hon. Jos. Lane issued his first proclamation as governor of the territory. Soon after, a public meeting was called in Oregon City at the instance of Rev. Geo. H. Atkinson to discuss some matters of importance. One question was, 'Shall we organize a system of free schools?' After a lengthy discussion, a vote was taken which resulted as follows: 37 for and 6 against free schools. At the request of Governor Lane, Rev. Geo. H. Atkinson prepared the educational part of the forthcoming message to the first territorial legislature, July 17, 1849. This was the first impulse toward the organization of our public school

system. The first school bill was passed September 5, 1849 (12, p. 591).

Later some of the communities worked to improve their educational facilities. Bain tells of one district.

Along about 1854, the people of Bethel began to get ambitious for 'higher education.' So G. O. Burnett and Amos Harvey each gave 100 acres of fertile land as an endowment for Bethel Academy. This institution opened its doors, --or rather its door, in 1855. It was a large frame building, two and a half stories high, the best building in Polk county at that time. It may still [1920] be seen near McCoy.

T. R. Harrison was the faculty. He taught everything from writing to algebra, though he was no 'classical scholar.' ...There also was a course in practical surveying. The spelling match every Friday night was one of the big incidents in the school career of the Bethel student (2, p. 74).

The oldest record located of the forerunner of industrial arts refers to the Bishop Scott Grammar and Divinity School in Portland. Lewis in a history of the Protestant Episcopal Church educational activities says:

In 1880, Bishop Morris suggested the introduction of Manual Training, but it awakened little interest. In 1887, the name of the school was changed to the Bishop Scott Academy...(24, p. 117).

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Bishop Scott Academy, ...made a tremendous growth in 1888 and 1889 following the introduction of military training, but suffered a severe slump during the years of the panic...In 1896 a movement was started to introduce manual training but this was not brought about until the spring of 1898 because of lack of funds.

In that year a capable and experienced teacher was secured from the east and the work was evidently very popular and successful (25, p. 124).

The University of Oregon

At the University of Oregon in 1899 among the electives that would meet admission requirements were free-hand and mechanical drawing and manual training or shop work.

The Oregon Normal Schools

In 1899 the State Normal School at Monmouth announced a new department of Manual Training in addition to the departments of previous years. In April 1900, it was announced that:

The sloyd building is being moved back of the Training Department. The wood sloyd is being arranged for, and in a very short time will be available with the paper sloyd. The value of such work cannot be over estimated, and it is only a matter of time until the sloyd will be required work in the public schools (32, p. 43).

Though the department name was "manual training," it was used to teach sloyd.

The State superintendent's report for 1901 tells of progress at Monmouth.

The department of manual training has been placed upon a firm basis during the past year, and we are now prepared to give both a teacher's course in German cardboard sloyd and practice in teaching training school classes in wood sloyd. Special rooms have

been fitted up with all necessary tools and equipments, so that classes may do the most approved work (33, p. 148).

Schools were preparing exhibits for the St. Louis fair in 1904. The Oregon State Normal School was readying some art work, wood and cardboard sloyd, and nature work. It was expected that some basketry would be sent also.

In 1907, manual training was taught in nearly all grades of the training department at Monmouth. The scope of the work was enlarged to take in more large pieces.

Professor Bruce was in charge of manual training work at the Weston Normal School in 1903. He was an experienced architect and carpenter with training in sloyd, and had developed a system for tool arrangement.

Professor Bruce has arranged the tools for Sloyd work in a neat cabinet in the workshop in such a way that should any be out of place a glance over the cabinet will reveal the fact. Work has been begun in this department and the children of the Training school have enjoyed the novel experience that manual training affords (41, p. 26).

Here again the word sloyd is used to point up a specific kind of work under the general heading of manual training.

In June of 1904, a report from the Eastern Oregon State Normal School in Weston reported their first year of manual training as follows:

The first year of the course in wood sloyd has been completed. The students have worked with enthusiasm and interest and have completed many articles of household utility and beauty, several of these demanding more skill than is usually acquired during the first year's work. These included a towel rack of pleasing design, rolling pin, sugar scoop, bookcase, brackets, clock shelves, photograph frames, stools, and mallets. Many students have begun the manufacture and repair of articles for family convenience at home and are making very skillful applications of the carpentry that they have learned in the sloyd work. Mr. E. M. Bruce, who is the instructor in this department, is not only a carpenter by trade but has received special training in sloyd in the University of Chicago, where he did post-graduate work (8, p. 72).

The Eastern Oregon State Normal School reported in 1905 that:

Good facilities for manual training have been provided in one of the school buildings, and full sets of tools for wood and cardboard sloyd have been secured.

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In the training school two periods each week are devoted to wood sloyd. The student teachers work with the children under the supervision of the instructor of the department (7, p. 143).

The Ashland Normal School introduced manual training under the professional curriculum at about the same time as the other normal schools. In 1905, manual training was listed in the course of study to include sewing, basket weaving, cardboard work, wood work, and school gardening--both vegetable and flower.

Oregon State College

In the catalog of the Corvallis State Agricultural College for 1873-74, there is mention of the school of engineering, the base upon which the department of industrial arts was later built.

This department cannot be fully organized yet for want of funds. Besides what of this course is taught in the schools of Mathematics and Physics, we teach drawing and descriptive Geometry, Shades and Shadows, and general principles of civil engineering (39, p. 16).

The school of engineering had expanded by the time the catalog of 1889-90 was printed. The school was listed as mechanics and mechanical engineering and included some shop work.

This department includes work both in classroom and shop. The classroom work takes up the studies Mechanics, Mechanism, and Mechanical Drawing. The shop-work includes woodworking, blacksmithing, and machinist work. The student is first taught the use of tools in a series of exercise pieces, and afterward is required to apply the principles thus learned to actual construction. In all cases the student works directly from drawings which he must learn to make, to interpret and to follow accurately (26, p. 20).

G. A. Covell was professor of mechanics and mechanical engineering and headed the department. The shop work in 1893-94 was organized into a four-year course. The first year's work was in wood, the second in "blacksmithing," the third in "vise and machine work," and the fourth in the manufacture of tools and higher machine work.

E. P. Jackson became instructor in woodworking for the year 1903-04. Between that date and 1912, Jackson combined teaching duties with service as supervisor of carpentry, cabinet making, and maintenance of the physical plant. In 1912-13, he devoted full time to instruction but in July 1913 voluntarily accepted the position of full-time director of all physical plant maintenance and construction.

The secondary course in Mechanic Arts for 1909-10 is first mentioned as being helpful to those who wish to teach "industrial work" in schools. Two-thirds of the school time was devoted to industrial work. Woodwork was required for the first year.

Monmouth normal school was closed in 1909 for lack of appropriations and E. D. Ressler accepted professorship of industrial pedagogy at Oregon Agricultural College.

The department of industrial pedagogy will undertake the preparation of trained teachers for the elementary and high schools in the subjects of agriculture including dairying, orcharding, irrigation, and other branches, domestic science and art and manual training. It will also work out courses of study and their correlation with subjects in the present course (36, p. 215).

It was reported in 1910 that the president of Oregon State Agricultural College was interested in advancing the department of industrial pedagogy. Teachers of agriculture and manual training were in greater demand than the College was able to supply.

In 1911, it was reported that the manual arts building at the Oregon Agricultural College would be ready when classes convened; also, that there were thirteen registered for the summer manual training course. By 1912, Oregon Agricultural College was the only institution in Oregon offering "industrial education" for teachers. Industrial arts was first listed under the school of engineering, in 1915.

The first mention of industrial arts, under Professor E. D. Ressler, was to train teachers of manual training in elementary and high schools. In classes below the fifth grade, work was given by regular grade teachers, but special teachers in manual training were advised to be prepared to "coordinate the work of all grades." A college degree course in industrial arts was provided in the year 1913-14. The courses were under the department of Mechanical Engineering with the department of industrial pedagogy to give special methods in manual training, domestic science, and other special subjects.

Professor Ressler was head of the department of industrial pedagogy in 1913-14 with Henry Clay Brandon, former principal of the Portland School of Trades, as a member of the department. Professor Brandon was also head of the department of industrial arts and director of shops in the School of Engineering.

Frank Henry Shepherd, assistant professor of industrial arts, replaced Brandon in industrial education, in the school of vocational education, in 1915. Professor Brandon retained his position as head of the department of industrial arts in the School of Engineering.

The 1916 summer session lasted from June 12 to July 22, with a 69 per cent increase in enrollment over the previous year. The call for teachers continued to exceed the supply. The Department of Industrial Arts offered 23 courses and had its second highest summer session registration with 81 students.

In June 1919 there is a notation about salaries.

Requests for teachers in industrial arts are being received at the college not only from Oregon but from other states including Washington, Idaho, Montana, and California. These positions open to 1919 graduates entail salaries from \$1000 to \$1800 a year. Several superintendents of schools in Oregon and Washington have made visits to the college to obtain teachers for manual training in high schools. F. H. Shepherd is in charge of the vocational education work at the college (42, p. 461).

The school of vocational education with E. D. Ressler as dean was formed for the year 1919-20, with A. R. Nichols as critic teacher in industrial education, and Frank H. Shepherd, professor in industrial education.

Some of the projects made by the college students in 1920 were reported:

Thirty-seven talking machines were made by the men of the industrial arts department

in the spring term. Other furniture such as library tables, dressing tables, dining room tables, sewing tables, Morris chairs, rocking chairs, and china cupboards were produced. The furniture made by the mill class is all of the same kind of lumber, while the men in the manual training class use all kinds of materials. Many of the men wish to make upholstered furniture but the high price of leather has stood in the way (43, p. 1099).

The arrangements for practice teaching in 1921 and details of installation of a blower system are given in a periodical of that year.

The entire teaching staff of the manual training department of the Corvallis schools is made up of students of the Oregon Agricultural College industrial arts department, who are preparing for the teaching profession, according to A. R. Nichols, director of manual training. These students are in the third or fourth year of the courses and in order to comply with the law, are required to do a certain amount of practice teaching, so this arrangement with the school authorities gives these aspiring teachers an opportunity, as they are able to arrange their other studies to fit their teaching hours and complete their practice teaching before graduation (44, p. 474).

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Designing and installing a complete system for the woodworking shop is the latest accomplishment of the students in the industrial arts classes of the Oregon Agricultural College. The necessary measurements were taken and the drawings made by the students under the direction of D. K. Mereen, instructor in industrial arts. Plans were sent to the manufacturer who made the parts and shipped them here. The students assembled them in position, finding it necessary to make but one slight change (44, p. 475).

In 1922 the "manual training" department continued its plan of meeting five times a week in alternate weeks. The teaching was done by college students, working under the supervision of Mr. A. R. Nichols and Mr. Orvil G. Reeves. Each student taught twelve weeks, one double period per day, five days each week. The students asked for two terms in practice teaching so that they could teach woodwork for the grades and drawing and woodwork for the high school.

The foundry, which was added in 1915-16, by 1922 was rated as one of the most efficient instructional shops of its kind in the United States. This rating was made by Foundry magazine, a publication of the American Foundry Association. The casting of tiny letters for watch fobs and huge bases for hydraulic presses was part of the work carried on by the foundry, under the direction of A. E. Ridenour. Students in pattern making made patterns for use by the college maintenance department, and students did all the iron and brass repair work for the college.

The department of industrial education in the school of vocational education consisted of F. H. Shepherd, A. R. Nichols, and Orvil G. Reeves, in the year 1922-23; while the department of industrial arts under the School of Engineering was headed by H. C. Brandon.

Professor Shepherd was transferred to the department

of education for the year 1923-24, and E. D. Ressler transferred to the department of education for the year 1926-27.

George B. Cox was appointed to the position heading the industrial arts programs in the schools of engineering and education, in 1927.

George B. Cox, formerly assistant professor of industrial education at the University of Wisconsin, is the new head of the industrial arts department at the Oregon State College, taking the place of H. C. Brandon, who died October 12 after a lingering illness.

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'The head of the department of industrial arts directs the shops of the engineering college, and administers the work of training industrial arts teachers. The fact that Mr. Cox is an engineering graduate, has taught engineering students, and has won very high standing as a teacher in the industrial arts field, renders him especially well qualified to fill the new position.

'Mr. Cox received his B. S. Degree at the University of Missouri in 1919. Previous to that time he had spent a summer at Stout Institute and another at the University of Wisconsin. The summer of 1920 he was a student at the University of Illinois.

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'Professor Cox was in charge of manual arts work in the public schools of Orange, Texas, in 1919. The next year he was associate professor of industrial arts at the Sam Houston State Teachers' College, Huntsville, Texas (20, p. 9).'

The summer school session in 1928 lasted for six weeks. This was the first summer in six years that a full

program was given in the department of industrial arts. Students came from all states west of the Rocky Mountains and from Montana and Colorado, Alaska, Hawaii and east. The Master of Science degree in industrial arts was to be awarded beginning with the fall term in 1928.

The staff of the department of industrial education for the years 1931-32-33 consisted of Mr. Cox, O. D. Adams, who was associate in charge of Trade and Industrial education and State Director of Vocational Education, and F. L. France, critic teacher at the Corvallis High School. The department of industrial arts remained under the School of Engineering and the staff remained the same as the previous year.

In the fall of 1950, the professional curriculum for industrial arts was transferred to the School of Education. All technical services are still furnished by the School of Engineering, under the control of one department head serving both schools. The responsibilities to the School of Engineering include the direction of the subjects, staff, and total program for industrial engineering and industrial administration, as well as for the subjects, staff, and total program for the curriculum in industrial arts education. The program for industrial arts teacher education, long a responsibility shared jointly by the two schools, was thereby placed in a more logical organization with students, curricular program, and professional

staff members a direct responsibility of the School of Education. The technical staff, laboratory facilities, and shop-laboratory subjects are, as previously, a responsibility of the School of Engineering, while the whole program is directed by a single department head responsible to both schools.

Oregon State School for the Blind

The state board of education appointed a committee in 1901 to inspect training at the state school for the blind. The committee recommended more lines of industrial training and more general use of object methods of instruction.

In pursuance of the recommendations of this committee, the superintendent of the school suggested to the state board that on the line of manual training there be introduced into the Oregon School for the Blind something of sloyd work, which suggestion was approved by the board (33, p. 165).

After the board approved this addition to the school work, it was necessary to find out from other schools for the blind the best features to include.

Visits were also made to the Portland Manual Training School and to the normal school at Monmouth.

In November 1901, the Oregon Institute for the Blind received its tools and work commenced as reported in a periodical of that date.

The school has received its Sloyd tools, and the work was commenced November 1. This

system is Swedish in origin, and teaches the use of ordinary tools used in woodwork, such as planes, hammers, saws, chisels, bits, etc. This system of manual training is quite popular in the public schools of the East...(13, p. 42)

The state school for the deaf introduced in 1901-02 a course in woodwork and printing, with a class in sloyd for the younger ones.

Public Education Trends

In 1901 the parents of the state wanted music, drawing, manual training, and physical culture in the schools. Manual training was recommended for grade schools with one half hour, a week, for six or nine months to consist of instruction in paper, raffia and basketry work, and sewing.

The course of study for rural schools, in 1907, included elementary agriculture; and the one for city schools, manual training. A manual training high school for girls was advocated, similar to that for boys. It was decided that 24 pupils was a sufficient number for a class in manual training.

The schools of the state of Oregon, in 1916, offered manual training with the following presentations:

From reports from over 65 per cent of the schools in the state in which manual training is given, the following figures are noted: Fifty per cent give nothing but joinery, furniture work, and mechanical drawing; the remaining 50 per cent offer, besides the above subjects, the following--21 per cent offer carpentry and concrete work, 17 per cent offer carpentry, 11 per cent offer carpentry and

forging, one-half per cent offer carpentry, concrete work, forging, and gas engine work (47, p. 37).

By 1941, there were 171 schools or 56 per cent of 302 secondary schools in Oregon offering industrial arts.

The number of schools offering industrial arts was tabulated for three years as follows: (46, p. 25)

	1930	1934	1938
Small schools	11	17	32
Schools with 5 or more teachers	38	41	87

It was reported in 1941 that new building construction had made it possible to add departments of home economics, industrial arts, or agriculture to approximately 25 per cent of the high schools in the state.

The schools of the state helped the war effort in World War II by making model airplanes for use in training pilots, gunners, and observers in aircraft identification as reported by the state superintendent:

The schools, often in connection with their industrial arts program, have been working steadily on the production of model airplanes at the request of the government. These are made according to scale for use in the military training program. Over 2,000 were produced last year and the construction is continuing on a larger scale this year... (38, p. 18)

School Laws

In 1911 the board of education decided that the board of directors in districts of the first class has authority to prescribe the course of study, and may include manual training in the course if the board so desires.

One of the school laws enacted in 1911 pertained to special certificates.

Upon the application of any board of directors, the Superintendent of Public Instruction may, at his discretion, issue a certificate, without examination, to teach in any one of the following subjects: Library, music, agriculture, art, manual training, penmanship, kindergarten, domestic science and domestic art, typewriting, stenography, bookkeeping, physical culture, which certificate shall entitle the holder thereof to teach the subject therein named in any school in the district under the control of said board of directors, unless revoked for cause. The Superintendent of Public Instruction before issuing the same shall receive satisfactory evidence of the applicant's fitness to teach the subject named in the certificate (30, p. 429).

ADVANCE BOND

CHAPTER IV

INDUSTRIAL ARTS IN OREGON'S PRIMARY AND SECONDARY
SCHOOLS OUTSIDE PORTLAND

The following account is given of a part of the Clatsop County institute in 1901:

At the afternoon session Prof. D. D. Dyer, of the Bishop Scott Academy, of Portland, delivered a lecture of more than ordinary interest on 'Manual Training as a Help in Moral and Intellectual Development.' The workbenches of the sloyd classes were set up by some of Prof. Dyer's pupils and actual work done illustrating the course of instruction. President Campbell testified to the value of manual training by saying that the children in the training school at Monmouth gave their greatest interest to this branch of the work. Superintendent Ackerman said that early education was almost wholly hand training, but gradually mental culture from books has drawn us away, and declared himself emphatically and absolutely in favor of manual training (13, p. 47).

At the Umatilla teacher's institute in 1903, Professor Bruce, teacher of chemistry and sloyd in the normal school, spoke of the educational value of sloyd. The introduction of sloyd was becoming general in the public schools of Eastern Oregon. Manual training was added to the curriculum of the school at Lostine, and other Eastern Oregon cities were expected to make manual training part of their regular school work. Slowness to take up manual training was due to difficulty in securing competent teachers.

In 1909 the basement of the North Bend High School

was divided into a recitation room, and woodwork and cooking rooms for the manual training and domestic science departments. At the Albany High School manual training was installed in a new building in the same year.

Provision was made for a manual training department to be installed in the new high school building in Corvallis to be occupied in 1910. Woodwork was introduced in that year. At the same time, woodwork and drawing were offered for the first time in McMinnville, and Forest Grove included manual training in its college preparatory course. Manual training was encouraged throughout Lincoln County.

Manual training as given under the guidance of F. G. Chute in a three-room rural school in 1910 is reported by Superintendent Ackerman.

That manual training is practicable for small schools, and that it can be successfully taught under conditions usually found in such schools, has been demonstrated at Bethel, Or., this year. There were only sixty-five pupils in the school and but three teachers employed; three years of high school work was taught.

The purpose of the particular course adopted by the teachers was to show the possibilities of manual training in that district and to awaken the interest of the patrons in their school, thereby securing a permanent place for the subject in the school course.

The proceeds from a special program were used to secure such material as raffia, reeds, thread, glue, stains, etc. Each of the more costly articles became the property of the boy who made it and he paid for the materials of which it was constructed. The tools used were

brought from the homes and they did not exceed \$15 in value.

After each Friday afternoon recess, the children of the grammar grades were given in lessons in weaving, basketry, and sloyd work; in the high school the girls were given sewing and basketry and the boys received lessons in woodwork. Each pupil was allowed to work on his article under construction at any time when he could satisfy the teacher that his lessons were not being slighted.

The purpose of the work has been accomplished. Bethel School district has made provision for the teaching of manual training in the new building which is being erected (9, p. 199).

A manual training building was added to the Klatskanie High School in 1911. Rainier, St. Helens, and Scappoose included manual training as part of their courses in that year with manual training held in the basement of the St. Helens school. Hillsboro included manual training in the fall of the same year.

At the Alsea consolidated schools handwork was added to the primary department including weaving and basketry in reed and raffia, drawing, clay and sand modeling about 1912.

Manual training was introduced in Salem in 1908. At that time the work was given to the grammar grade boys of one or two buildings under the direction of the art instructor. In 1909, three shops were in use and a supervisor was employed. By 1911, an instructor was engaged for grade work in manual training and the director took

charge of the high school classes in the subject. In 1912, increased facilities were in demand for the department.

Medford had a Manual Arts exhibit in 1913. Prizes were awarded in various classes of work for the grammar grades and high school. The exhibits included the furniture made for the school. Shop work was under the supervision of C. W. Frost. Medford was among schools giving two and a half or more hours of manual training in the eighth grade. The Agriculture Association of Grant County gave prizes for student work exhibited in manual training in 1913. At the same time, manual training was offered in Amity and Carlton one day per week. Union provided for manual training in its new high school building, occupied in 1913. The Myrtle Creek School, in Douglas County, showed manual training work, cooking, gardening, sewing, and chicken raising in its 1913 fair.

Rural grade schools in Clackamas County were to have manual training in September 1914. Six school districts were to equip shops and help pay expenses of an itinerant teacher to travel from school to school. Marshfield offered manual training in 1914, which was introduced in Roseburg in the same year. In 1914, pupils of Bellview School took manual training in Ashland one-half day each week, with the Bellview district paying the tuition.

It was reported in 1914 that the manual training department of the Springfield schools was overflowing. Students at the Eugene High School constructed a new addition to the manual training building at a saving of \$250. The boys under the supervision of Mr. Clarence T. Mudge, built additions for a 22 foot by 26 foot drawing room and a 26 foot by 26 foot mill room. All of the work except the window frames and the shingling of the drawing room was done by the boys under the supervision of Mudge and a carpenter. The interior finish and the wiring were done by the boys.

In Polk County it was reported in 1914 that some of the smaller rural schools had been installing manual training. At Falls City, students made articles such as office desks, cabinets, and chairs which were sold to businessmen of the town with a substantial profit for the schools.

At Freewater, in Umatilla County, a manual training building was erected in 1914. The interior work, construction of chairs, and work tables, and other furniture were finished by the boys of the classes.

Yamhill County offered manual training in the smaller towns with a visiting teacher spending one day in each. McMinnville and Newberg had special teachers in 1914. At Rex a workbench, sand table, sewing stands, medicine cabinet, sailboats, bracket shelves, and other articles

were built in manual training. Dayton had manual training by 1915.

Jackson County reported, in 1915, that nearly all the town schools and some of the rural schools had installed courses in manual training. In some cases the children from near-by rural schools went to a town school one-half day each week for instruction under a special teacher. Some of the rural schools had equipment and it was hoped that in the future all could have shops.

In Lebanon, in Linn County, manual training was taught by a local mechanic in 1915. In the same year, in Morrow County, manual training was introduced in the high schools at Heppner, Lexington, Ione, and Irrigon, and initiated at Perrydale in Polk County. The Tillamook County high schools taught manual training in 1915, also Dayton in Yamhill County.

The McMinnville manual training department took care of all repairs for the school district and erected play sheds and wood sheds in 1916. The Bridge School in Coos County gave manual training in 1916 by having the boys bring tools from home and material was furnished by the school board. In Crook County, Bend installed manual training in the high school, and a manual training building at Redmond was nearing completion. At Medford, the manual training department built 500 birdhouses and 25 rustic seats and benches.

The Hugo school district in Josephine County added manual training in 1916. The chairman of the school board instructed the class on Friday afternoons. The boys brought their own tools and used scrap lumber. Friday afternoons were also used by the students to build a shop and for mechanical drawing. It was hoped that for the following year money would be appropriated for tools and lumber.

In the summer of 1917, the Corvallis district erected an addition of four more rooms for the industrial arts department. Boys in the shop made furniture for the shop and domestic science tables at a cost of \$20 each though the planing mill estimate was \$55. The new high school at Roseburg in Douglas County had a manual training and forge room for 1917.

The first instance of girls taking a course in woodwork was reported from Grants Pass in 1917.

Before the close of the school last May, fourteen girls petitioned the Grants Pass Board of Education to open a class in carpentry for them. As an experiment, the Board granted the request and now the authorities are surprised and gratified by the progress made. Each girl makes little articles for personal use, such as glove boxes, rolling pins, card trays, picture frames; several of the more ambitious or skillful put together tables with mirrors, tea wagons, while each girl is now working on a cedar chest (hope chest). The construction work is alternated with lessons on the use and care of tools, on the making of stains, varnishes, and other 'finishes.'

They study the stock sizes of lumber, the nature of woods, distinguishing different varieties, imported oaks from native woods, walnuts from tropical woods, etc. No girl is allowed in the class unless she has first taken at least a year of sewing and a year of cooking. Some of the neighboring towns are following this example and Southern Oregon will be able to send skilled women workers to replace the men, if the international crisis demands it. An interesting sequel to this form of 'preparedness' was quite natural. This semester sixteen boys asked for a course in camp cooking and for eighty minutes each day the school kitchen is about full of capped and aproned cooks. ...Grants Pass is likely to make this a permanent feature of its high school course (15, p. 578).

It was reported in 1917 that some of the boys in Eugene were learning by doing.

The manual training department of the high school at Eugene, Or., has built a garage for a citizen of Eugene. The boys made the plans and did all the work including a cement driveway. A student in the department has also taken charge of the shopwork in a near-by country school. ...and is giving the boys in the upper grades a complete course in wood working (31, p. XVI).

One of the city superintendents of Eugene interested the boys in building birdhouses, which led to the introduction of manual training there.

In 1919, the school boards of Wasco, Moro, and Grass Valley hired a manual training teacher and a domestic science and art teacher. These two teachers devoted a day and a half in each of the three schools each week. The Seaside-Gearhart High School No. 1 in Clatsop County

added manual training in 1920.

A gymnasium and manual training building was constructed adjoining the Oregon City High School building in 1923, at a cost of \$35,000. Redmond Union High School in Deschutes County offered manual arts in 1924.

West Linn Union High School completed a gymnasium in 1925 which also contained manual training rooms, mechanical drawing rooms, finishing rooms, and gymnasium dressing rooms. Rogue River added to their school building to be able to offer manual training in 1925. Sherman county high schools resumed manual training in the same year and some of the work consisted of wood carving, coping saw work, basket and mat weaving, and rug work.

A heating plant and manual training shop was constructed at Milwaukie in 1927.

By 1934 and for several years thereafter, the industrial arts instructors in Eugene conducted club work (extra-curricular) in competitive rifle shooting, archery, outdoors club, and craftsmanship; and Cottage Grove had built an industrial arts shop of 2840 square feet to accommodate thirty boys.

In 1935, Hillsboro set up a carpentry class on scale models, through the Oregon Building Congress and O. G. Hughson.

As industrial arts has grown from its infancy and

has been recognized and accorded its place in the school curriculum, it has become less of a novelty. When it was new there was much written about it in school activity reports, but as it became more familiar there seemed to be less need to advertise to the public the progress being made, so less was written.

As this thesis must be limited in regard to time, the author is limiting it to the year 1950. Earlier writings that the author located were very prolific but tapered off rapidly from the early 1920's.

CHAPTER V
INDUSTRIAL ARTS IN PORTLAND

Manual training was introduced into Portland by Superintendent Frank Rigler in 1904, under William J. Standley, an English cabinetmaker who had his schooling in England and had studied sloyd. He was conducting YMCA night classes prior to organizing manual training for the Portland public schools.

In 1905, the school directors were able to report:

Manual training, so long anticipated, has at last been introduced, under the supervision of W. J. Standley. At present there are five centers, located as follows: One at the Harrison and Davis schools on the West Side and at Stephens, Holladay, and Thompson on the East Side (34, p. 178).

The Board of Education was pleased with the results and hoped to extend manual training to the high schools and to broaden the system in the elementary schools in the next year. In 1906, Standley's office and the head station, as the work rooms were called, were in the Atkinson school. Other work rooms were located in the Davis, Shattuck, Stephens, Holladay, Thompson, and Highland schools.

Demonstrations and blackboard work were given in a room adjoining the main work room. All the students were required to turn out a certain set of articles, but the faster and better students could work on something different after the required work was finished.

The boys worked better under added incentive as indicated in an article in the Oregonian in 1906:

Perhaps the best work ever produced by the boys was the result of a competition some time ago, when \$100 in prizes was offered by the late Colonel Hawkins for the best bird-house. The finest products are turned out by a special class which is instructed personally by Superintendent Standley. This class is composed of two members selected for their ability from each of the stations. Membership is regarded as a high honor, and keenly striven for. This class not only turns out difficult woodwork but also prepares its own tools in the forge-room of the Atkinson school. All of the articles prepared in the Manual Training department are the property of the boys who make them, and are usually regarded with great pride by their owner.

Instructors believe that manual training has an influence for all that is good in the life of a child. Honesty...is one of its lessons. Superintendent Standley says not more than \$2 worth of tools were stolen from the various workrooms during the past year.

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Special instructors are provided, although there are at present but five instructors for the seven stations. The instructors for the past year were S. S. Chambers, W. L. Greenleaf, H. F. Wentz, C. J. Larson, and D. B. Finch.

Although there are manual training quarters in but seven of the schools, it by no means follows that the course is confined to the pupils of those schools. All boys in the sixth, seventh, eighth, and ninth grades of all city schools have the privilege of joining one of the classes and very few there are who do not accept the opportunity. Boys in the schools where no work rooms are provided march in a body to the nearest station when the time arrives for their weekly lesson. These marches are not held in universal approval, however, and it is proposed to

dispense with them by fitting up work rooms in all of the schools. When the boys go from one school to another they are under no supervision and it is said that they invariably depart demurely and with faces as innocent as angels and arrive in the same way, but while out of sight of the teachers they are apt to let their superfluous spirits overrun and numerous complaints are filed by residents along the line of march (27, p. 38).

Two thousand boys took the course during the second year. Each boy received one lesson of one hour and a quarter each week. Rooms were arranged with 24 work stations. All tools were kept in one large chest at the side of the room. Other cities provided a set of tools for each desk. The Portland plan was considered better for it kept the tools out of the way when not needed.

The first exhibit of manual training work by students of Holladay school was held in May, 1908. M. G. Steele was the instructor and his students were from nine to fifteen years of age. Students were making projects to enter in the Honeyman competition.

In the Portland schools actual work was begun only after a working drawing was made. Boys worked a total of 32 hours a year in the shops. Some worked before school hours, during noon hour, and after school. Cold metal work was begun in 1909. The material for assigned work was furnished by the school, but material for projects of the student's choice was furnished by the student.

In 1910 an editorial appeared in the Oregonian to support manual training. The editorial, "Hand and Brain," shows the trend of that time.

The wisdom of compelling school children to earn certain grades in academic studies before they are admitted to the classes in manual training is very questionable. Numbers of pupils are mentally backward owing to the very fact that their hands and senses have never been properly exercised. The precise stimulus which their brains lack to bring them forward in academic studies would be supplied by shop work under proper teaching.

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It seems to be almost impossible to force the idea into the head of an old-fashioned school man that manual training is fully as important a part of education as arithmetic or geography. Mr. H. C. Campbell is right in saying that it should be begun as early as the fifth grade. Had he said begin it in the first grade, he would still have been right. The education of hand and brain should begin together. They mutually stimulate each other and neither can succeed as it ought if the other is neglected.

But is it the business of the state to do everything for the individual? Are the parents of the children to have no responsibility whatever (45, p. 6)?

During the summer of 1912, vacation work was provided in thirteen Portland schools.

On Christmas day, 1913, some boys of one school gave to the city superintendent gifts they had made in the school shops, as told by an Oregonian article:

City Superintendent Alderman, assistants Grout and Rice and School Clerk Thomas will be presented today by the boys of the Jefferson High School manual training

department, with oak book racks which are the handiwork of the boys, made in the shops at the school.

The gifts were made under the direction of L. LaFarge, superintendent of the department and his three assistants, but the boys did the work. The manual training department has developed rapidly and now has enrollment of 135. The success of the department is shown in the fact that employers who have taken boys trained in it have been so well pleased with their work that they have made a standing offer of work to all the graduates it can send out (28, p. 18).

Standley resigned his position in 1908 and was succeeded by J. L. Kerchen who came from Spokane, Washington. Kerchen was head of the department until 1915. He added work in sheet copper and soft metals.

Arleta School offered night classes in manual training in 1913. Holladay School conducted sewing, basketry, painting, writing, stencil work, and copper and brass work at the same time. Lincoln and Jefferson schools presented night classes in mechanical drawing in 1914.

Many birdhouses were constructed in 1914 by the manual training shops. The boys in advanced carpentry did not build miniature or model houses. They worked out details of a house corner and roof with regular building materials. The re-use of materials by other classes decreased the cost.

Plans were under way to provide a kite tournament for the spring of 1914. The designs were to be done

through the art department and the construction in the manual training shops. The boys were also interested in the "Swat the Fly" campaign and were constructing fly traps designed by Mr. Hodge of the department.

Principals and teachers were asked to cooperate with the manual training department to encourage homework in manual training. Among suggested projects were shingling or painting a house or barn, making a canoe or boat, installing electrical conveniences in the home, recognizing or describing thirty different native birds, sleeping for a year in the air, keeping a savings account, and caring for a flower garden.

At the state fair in 1914, the Portland schools exhibited manual training work. In the early fall of that year the supervisor distributed fifty-four pairs of shoes to the manual training departments for repair. They were from a social service committee, and when repaired were to be distributed to needy children.

Jefferson High School set up an employment office, to assist in the employment of all boys taking the manual training course, yet there was little attempt at the teaching of a trade.

A printing course at Jefferson High School in 1914 had two aims; to prepare for apprenticeship, and to obtain a working knowledge from a business standpoint. That was the first trial of the subject in any high school in

the Pacific Northwest.

In December 1914, in connection with a move to fill a ship with Christmas presents for children in Europe, boys of the manual training department of the Portland schools undertook the making of many small gifts and sent exhibits of manual training to the Panama-Pacific Exposition in San Francisco in 1915.

Cubberley, in The Portland Survey of 1915, pointed out some of the offerings of the school district and suggested some improvements. At that time the Portland elementary schools offered manual training from the fifth grade through the eighth or ninth grade, starting as sloyd and continuing into general hand and machine woodwork. Some of the commendable features were; separate buildings, and a sloyd center for each grammar school. He proposed that the shops could be used to serve the needs of the school in repair work, making school furniture and other work with a liberal amount of time for shop work.

Cubberley commented that the high school shops were basement rooms with incomplete equipment. There was a lack of forge and machine shops, and an unbusiness-like air pervaded the manual training rooms. He recommended an agricultural high school for Portland.

Thirty-five Portland schools displayed manual training work in 1915 and vacation school work in manual training was presented in nineteen elementary buildings.

EDWARD BROWN 1916

Teachers encouraged the use of different kinds of woods native to Oregon. Many boys made window boxes in the spring.

Evening adult classes in manual training, cabinet-making, and copper work were held in the spring of 1915. The Rose Festival was a stimulus for campstool construction. Lipman-Wolfe and Company held a sale of manual training handwork of toys and other projects made of wood and metal.

An experiment in shoe cobbling was started in 1913, with three shops set up in different districts of the city. One was in an industrial neighborhood, one in a prosperous district, and one in a district not decidedly either way. The boys brought in shoes of the family to work on. It was reported in 1916 that:

Last year, just previous to the holidays, literally hundreds of pairs of shoes were repaired in the manual training shops for the poor of the city. These shoes were contributed by charitably inclined persons to the social organizations which in turn sent them to the shops, where they were repaired by the manual training students free of charge. The school in these cases furnished the necessary leather (22, p. 262).

In 1916, J. L. Kerchen, supervisor of industrial arts, made a report on what the Portland public schools offered the boy in the way of industrial education. There were forty shops in the elementary schools giving hand work from the fifth grade up. The objectives were to

acquaint the boy with industrial processes consistent with good work and instill habits of neatness, accuracy, orderliness, and industry. The work consisted of from one and a half to three hours per week in wood, metal, rope knotting and splicing, mechanical drawing, shoe cobbling, and general repair work. School furniture was made and repaired. Students were encouraged to mend furniture, sharpen knives, and do other work at home.

The high schools gave a four-year course of ninety minutes a day in woodwork (joinery, turning, pattern making, and building construction); metal forging and machine shop work; mechanical drawing in projections, penetrations, intersections, and developments; architectural and machine drawing, and free-hand rendering. All work was with the objective of general education both cultural and practical.

Benson Polytechnic was organized to present technical courses in drawing, mathematics, laboratory sciences, and shop work. The objective was to serve students interested in work as given by technical high schools. Trade courses had the objective of training for participation in industry. Work was considered prevocational for retarded, industrially inclined students.

There was a course in applied and theoretical electricity at Washington High School. Ockly Green was a separate industrial school with the objective of training

along industrial lines, with equal time given to work and study. Jefferson High School offered a practical course in shop printing and commercial work. School department printing was done in the shop.

J. E. Bonbright was in charge of applied electricity at Washington High School. The course was started in the fall of 1913 and many vocationally inclined students enrolled for a one- or two-year course. The object was to keep pupils not able to go to college, by giving them an opportunity to study electricity in a practical manner, and cover a larger field than had been given in the physics course. The course consisted of recitations, laboratory work, and nine field trips each term. It taught theory as used for power purposes, but "wireless" was not included.

Livingstone L. Summers became supervisor of manual training in the fall of 1916 after Standley's resignation. He had a teaching record of twenty years, and for the year before coming to Portland had been instructor of manual training at Oak Park High School in Oak Park, Illinois.

The school superintendent wanted the school shops open on Saturdays but the board was not in agreement as reported in the Evening Telegram in 1916:

City School Superintendent Alderman's recommendation to the school board yesterday that the manual training shops throughout the city be opened on Saturdays 'without additional cost to the school district,' was rejected on the ground that such a plan might

lead to trouble. In outlining the proposition to the board, the superintendent explained that the shops could be opened and boys could work in them, and if they desired instruction could pay the teacher in charge of the center something for his services.

The proposition of permitting manual training teachers to charge a fee to the boys who would attend the shops on Saturday caused the school directors to do a quick sidestep, for they immediately saw that such a plan had possibilities of leading to questionable practices...

.

...Director Plummer did not agree with Alderman and said that if it is necessary to open the manual training shops the regular teachers should be in charge and an additional salary paid for their services. Alderman insisted on the adoption of his plan, but the board rejected it (10, p. 5).

In September 1916, the school board wanted the superintendent to define the scope of manual training in Portland. It was reported that manual training instructors would be required to attend an evening class to learn printing in hopes of getting it in other school shops. Blacksmithing, carpentry, agate grinding, and various other lines of work were taught and the board wanted to know if manual training could not be standardized in Portland.

Summers felt that the trend toward industrial club work, later called 4-H clubs, enhanced the educational value and multiplied the interest of pupils. Small chicken houses for six to ten hens were encouraged, to teach a

lesson in house construction and cooperative effort.

Concrete construction was tried in some lines and was found to be cheaper than lumber.

Summers recommended that manual training shops should make all workbenches, drawing boards, drawing tables, cases and like equipment for manual training shops, and equipment for kindergartens and domestic science rooms. The making of workbenches and tools for home use was encouraged. He also recommended Saturday afternoon shop work on a voluntary basis.

A contest was held in the spring of 1917 to promote poultry industry among the boys of Portland. The contest had six classes:

- Class 1 Best results from one setting hen and one setting of fifteen eggs. Records to count one-half.
- Class 2 Best results from one pen of eight hens with records to count one-half.
- Class 3 Best results from use of the initial sum of one dollar toward the purchase of young stock for fattening for market. Crate methods to be used and records to count one-half.
- Class 4 Best results from twenty-day-old chicks.
- Class 5 Best results from one pair of rabbits.
- Class 6 Best-kept records showing most ingenuity in any of the above classes.

Saturday classes were put to use in February, 1917, as reported in the Oregonian:

Five of the larger manual training shops

were crowded to capacity Saturday when the shops were opened to boys who are eager to put in more time in their work than the regular weekday periods permit. Saturday morning work is a new experiment of the School Board. If it proves satisfactory this year, Supervisor Summers says that all the shops may be open next year.

Richmond, Hawthorne, Central, Irvington, and Shattuck are the schools now giving the Saturday morning manual training classes. The experiment seems so successful thus far that Superintendent Summers believes there will be a demand for Saturday work in all the manual training shops and in many home economics laboratories (29, p. 18).

For the Red Cross Christmas drive for 1917, Portland schools helped with the war effort in the first World War by making toys for the Allied Red Cross Bazaar. They also made checkerboards, checker tables, packing cases, coat hangers, tables for convalescent homes, knitting needles, waste paper baskets, bandage winders, and sock forms. To help food production, chicken house and rabbit hutch building was encouraged.

In the fall of 1917, F. M. Groshong was appointed by Mr. Alderman to fill the manual training supervisory position left vacant by the resignation of L. L. Summers. Mr. Groshong had been in the Portland schools for seven years previously having taught manual training at Couch School from 1911 until 1916 when he was transferred to James John School. Mr. Groshong remained in the position until 1941. He had a policy of making frequent visits to

the various shops and making suggestions for improvements. Many of the teachers made new demonstration projects before each visit.

In 1918, manual training was given in the last half of the sixth grade and in the seventh and eighth grades. After that year, it was limited to the seventh and eighth grades.

Household mechanics was introduced in 1921, and a model boat-building contest was sponsored by the Portland Advertising Club. Household mechanics was brought from Detroit where it had been seen by Superintendent Grout.

The manual training shops made 1000 hardwood wands for physical training, also some indoor baseball bats. An enthusiasm for radio was shown in 1922; a model plane contest was sponsored by the Oregon Journal Juniors, and leather work was put in during that year.

In 1923, scissors racks were made by the manual training department for the use of the schools. Also in that year there was a model boat regatta.

In 1926, there were 53 grade school shops giving manual training and six high school shops and drafting rooms with enrollment of 500 boys. Model boat building was part of the course. There were demands for the extension of manual training toward the introduction of hand work into the fifth and sixth grades, and classes for Saturday mornings.

Among the city-wide projects in the school year 1928-29 was a junior aviation construction and flying contest in cooperation with Meier and Frank Company, a birdhouse contest sponsored by Chown Hardware Company, a model yacht and power boat workmanship and sailing contest in cooperation with the Oregon Journal. The contests were an attempt to connect the department with outside commercial fields and thereby give boys and instructors opportunity to exhibit skill in craftsmanship and sportsmanship.

In December 1930, Portland had a contest for projects made of "Short Length" lumber, with an exhibit in the Public Auditorium. Prizes amounting to more than \$1,000 were given. The contest had the endorsement and close cooperation of the West Coast Lumbermen's Association, National Lumber Manufacturing Association, Western Pine Manufacturing Association, Wood Promotion Committee of the Portland 4L's, National Committee on Wood Utilization, and the United States Department of Commerce. Five thousand pieces of work were exhibited. The fifth annual model boat regatta was sponsored by the Oregon Journal Juniors.

Edison Six-year High School organized in September 1935 included grades seven, eight, nine, ten, eleven, and twelve. It was to give an enriched industrial arts program, to be remedial and for rehabilitation, in addition to

regular high school courses. The work included social relations, family relations, industrial arts metal work, electric wiring, smithing, plumbing, bench metal, woodwork, general shop, and vocational shoe repair. The objective was to develop hobby interests with the industrial arts applications in reed, raffia, rattan, caning, spinning, weaving, dyeing, homemaking, cooking, and sewing. Classes were organized by homogenous grouping.

The industrial arts department and the Oregon Journal Juniors held the fourteenth annual model boat regatta in 1940. The same year the high schools exhibited woodwork, drawing, art, metal, leather, clay modeling, plaster of Paris work, and sheet metal work. Elementary industrial arts by seventh and eighth grade boys consisted of leather, sheet metal, and wood. Tools were made by the boys for leather and tinware.

Mr. Groshong was transferred to Ockley Green School in 1941, and Mr. O. B. Badger, formerly Supervisor of Industrial Arts in Tulsa, Oklahoma, was appointed as Director of Vocational Education and Supervisor of Industrial Arts. Under his direction several "in-service training classes" were held. Courses of study in wood-working, metalwork, leather work, mechanical drawing, plastics, aviation, and electricity were developed. A new method of teaching drawing was introduced, using graph cards in connection with a drawing book of which he was

co-author.

Mr. George Henriksen, formerly on the staff at Benson High School, was appointed supervisor of Industrial Arts in 1945, shortly after completing the Master's degree in industrial education at the University of Minnesota.

Since becoming supervisor, Henriksen has conducted several in-service training classes, has encouraged the development of craft work in the school shops, and has worked for a greater variety of offerings. The idea of having an Arts and Crafts shop where both boys and girls could work, and a variety of activities offered to children as low as the fourth grade, utilizing the shops to a much greater degree than previously, has been one of his experiments. Industrial arts in the grades has been combined with homemaking and art courses, for the art-crafts program now called "Crafts and Home Living."

The School Administration is convinced that the Crafts and Home Living program is sound from the standpoint of educational value, efficient use of room space, and economy of operation.

In a recent talk at Vernon School, Henriksen said:

None of the Industrial Arts tools in present shops will be removed in the new Arts and Crafts program. On the contrary, some additional tools and equipment will be added, thus making it possible for boys and girls to have even more experiences than the present program provides. Experience with this program in Portland has shown that seventh and

eighth grade girls benefit from the craft program fully as much as the boys and, incidentally, shows that girls are much more careful and accurate in their work than are the boys.

Industrial Arts and Home Economics were introduced into the elementary program many years ago when the eighth grade was terminal education for most children. If these pupils were going to have any of these experiences, it was necessary that they be given at this level. At the present time all boys and girls start high school and a large percentage complete high school, which makes it possible to give enriched specialized offerings throughout the high school program. It may also be pointed out that present seventh and eighth graders are one or two years younger than seventh and eighth graders were twenty years ago (18).

Henriksen pointed out that the crafts and home living program should not be confused with the recreational type of activity. Ten per cent of the total time the student is in the seventh and eighth grades is devoted to the crafts and home living program.

He concluded by pointing out that the program was not new in the Portland Public Schools, that it had been tried out successfully, was educationally sound, that no part of any child's education was being neglected, and that it helped to solve some of the critical problems of finances and housing confronting the educational system in the city of Portland.

CHAPTER VI

SUMMARY

Pupils in Oregon's first schools had neither the time nor the need for a study of industrial arts even if that phase of public education had been common in other areas in those days. If the Oregon boy or girl was lucky enough to be able to attend school, it was for only a few months in the fall, after harvest and before the wet cold weather made travel over mud roads practically impossible.

The early schools concentrated on the three R's with no frills. After the lessons were over for the day, there was work to do at home, with no time for other than the very essential tasks of pioneer life. Practical arts activities consisted of making or repairing crude furniture, building fences, and helping with the family chores associated with the earning of a living in a new country.

Early woodwork in Oregon schools was largely recreational to encourage the boys to continue school attendance in the spring. The pupils furnished their own tools and materials and took pride in taking care of the tools.

When manual training was introduced the shops were located in any convenient place not needed for other specific use. Some of the first shops were sheds built by the boys; others were rooms in the basement or in the furnace room. Many a school basement was planned with the

idea of having a portion used for the school shops. Later plans called for the shop space to be housed separately, with more windows for light and ventilation.

The first teachers of industrial arts were men from the trades who were able to impart some of their knowledge. Many of them had no other objective than to earn a living and teaching seemed the easiest way. Later, some of the tradesmen entered the colleges to learn about teaching and became the forerunners of industrial arts teachers with the objective of building a course of study which would be of the greatest benefit to the student.

Industrial arts did not appear suddenly in Oregon, or elsewhere. Its development followed the steps that logically grew out of the desires of parents and educators to bring to their children the advantages of a fully useful and functional education. It began to emerge in the early 1900's; teacher education was provided at Oregon State College by 1913, and the development of industrial arts in the public schools of Oregon has shown steady growth most of the time since then.

Some form of industrial arts has been offered in elementary schools. Portland first offered manual training to the sixth, seventh, eighth, and ninth grades when first introduced. In later years, the seventh and eighth grades only were offered industrial arts.

Some high schools were formed in Portland with the specific purpose of offering an intensified form of industrial arts. The course was to parallel the regular classroom work as an inducement to retain the interest of the academically retarded, industrially inclined student and to help him decide on a vocation.

The school industrial arts departments assisted in the two World Wars by constructing checkerboards for the Red Cross and other necessary items. They also built model airplanes to use as training aids for aircraft identification.

Although Oregon's industrial arts program had small beginnings in the basements of a few schools, the program has expanded into almost all of the schools of the state. From tradesmen teaching a sampling of their trade to the students, the modern teacher of industrial arts obtains a college degree before going into the field. These changes took many years but are attainments for which many men connected with industrial arts have striven and dedicated their lives.

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ADVANCE BOND

APPENDIX

C. L. BROWN

COMPARISON OF REGISTRATION IN INDUSTRIAL ARTS
IN OREGON HIGH SCHOOLS OVER A TWENTY-YEAR PERIOD

<u>School Year</u>	<u>Mechanical Drawing</u>	<u>Industrial Arts</u>	<u>Home Economics</u>
1930-31	986-2.02*	2731-5.61	4858-9.97
1931-32	1602-2.89	2943-5.09	5292-9.15
1932-33	1561-2.78	2661-4.75	5307-9.47
1933-34	2843-5.13	6807-12.28	10315-18.61
1934-35	3326-5.77	7323-12.71	11046-19.18
1935-36	3550-6.08	8300-14.22	11906-20.40
1936-37	3461-5.76	9303-15.66	11244-18.70
1937-38	2599-4.19	6652-10.72	11988-19.31
1938-39	3980-6.35	7281-11.72	12631-20.16
1939-40	3843-6.12	8941-14.24	14337-22.84
1940-41	2401-3.92	6932-11.32	13193-21.54
1941-42	3613-5.99	6620-10.97	10717-17.76
1942-43	3728-6.53	6410-11.23	11408-19.98
1943-44	3794-6.94	6455-11.80	11065-20.23
1944-45	3426-6.06	6927-12.25	11119-19.67
1945-46	3524-5.65	7662-12.28	10733-17.20
1946-47	3406-5.50	8488-13.71	11675-18.86
1947-48	3482-5.43	8568-13.21	12111-18.90
1948-49	3767-5.77	11191-17.14	
1949-50	3898-5.85	12912-19.38	

*First figure is enrollment, second is per cent of total enrollment for all subjects.

Figures taken from the biennial reports of the Superintendent of Public Instruction.