

THE HISTORY AND DEVELOPMENT OF INDUSTRIAL ARTS  
IN THE PUBLIC SCHOOLS OF KANSAS  
(NON-VOCATIONAL)

A THESIS  
SUBMITTED TO THE DEPARTMENT OF EDUCATION AND THE  
GRADUATE COUNCIL OF THE KANSAS STATE TEACHERS  
COLLEGE OF EMPORIA IN PARTIAL FULFILLMENT  
OF THE REQUIREMENTS FOR THE DEGREE OF  
MASTER OF SCIENCE

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## PREFACE

This study was undertaken in order that the professional educators and, to some extent, the lay public of Kansas might possibly become more acquainted with the important function of Industrial Arts in the Kansas public schools. This phase of education is of vital interest to the parents of Kansas who are sending children to the public schools. The writer believes that, due to the interest of the parents in the public schools of the State, such a study should be made in order to inform them of the manner in which Industrial Arts developed within the State.

The writer wishes to acknowledge, with deep gratitude, the kind and valuable assistance of Dr. Edwin J. Brown, Director of the Graduate Division of the Kansas State Teachers College of Emporia, who graciously consented to direct the efforts of the writer in making the study. The writer also wishes to acknowledge the assistance of the staff of Kellogg Library of the Kansas State Teachers College of Emporia, without whose cooperation such a study would have been impossible.

*Arthur W. Regnier*

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## THE NATURE OF THE STUDY

1. This investigation has as its main objective the tracing of the history and development of Industrial Arts in the state supported colleges and public schools of Kansas.

A. This implies the gathering of all the available data concerning industrial arts and the presenting of them in a clear, readable form.

2. To indicate the trends industrial arts has taken in the past and the position which it occupies at present.

3. To make recommendations for the public school industrial arts program for the future.

## THE SCOPE OF THE STUDY

1. A brief summary of the industrial arts in the United States.

2. The study begins with the territorial period of Kansas and continues through statehood to the present time. (1854-1933)

3. The order of time and place of development of the industrial arts, as classes, departments, or in its relation to education of the people of the state in the state's public schools, universities, and colleges.

## A DEFINITION OF INDUSTRIAL ARTS

The writer is assuming the term "Industrial Arts" to be one of the Practical Arts. He assumes the term means a form of general or non-vocational education which has been used by the state supported colleges and public schools of the state

of Kansas. Under the term, Industrial Arts, he would include provision for pupils' experiences, understandings, and appreciations of materials, tools, processes, and products. In a broader sense this includes the opportunity to study vocational conditions and requirements incident generally to the manufacturing and mechanical industries. The term, Industrial Arts, is substituted for the narrower term, Manual Training, and for the somewhat improved term, Manual Arts, which included the all-round arts of industry rather than the purely manipulative or "manual" aspects of artistic construction. Industrial Arts shall include such work as has been attempted in the public schools of Kansas in the fields of claywork, drawing, home training, household, industrial mechanics, manual training, school training, shop work, simple agriculture projects, simple metal work, and textile work.

### The Method of Procedure

The first step involved the terminology of Industrial Arts, finding the agencies of the state supported public schools that used some form of industrial arts, and deciding as to whether the school's intentions were vocational or non-vocational education.

The second step was a detailed search of the Constitution of the State of Kansas and the session laws of the Legislature. The compiled laws of each session of the Legislature were studied carefully to find all acts dealing with Industrial Arts separate from vocational aims. Each law to be pertinent was referred to or copied verbatim from the document and these

were used as quotations in the body of the study.

The report was then written, using the laws of Kansas as the skeleton around which the developments of Industrial Arts in the state supported schools took place.

#### The Types and Sources of Data

The data for the study consists mainly of State documents and laws, as follows:

- (1) The Constitution of the State of Kansas
- (2) The Session Laws of Kansas
- (3) Reports of the State Superintendent of Public Instruction, The Board of Regents, The Presidents of the State Schools, The Head of the Industrial Departments of State Public Schools, and The State Board of Education.
- (4) Courses of Study and University and College Catalogs.

In addition to the above types and sources of data, a study was made of the articles appearing in periodicals which deal with the subject of this study.

#### The Presentation of the Data

In presenting the material of this study a combination of logical and chronological order has been followed. The various Industrial Art movements of the State make up the several chapters of the study, and within each chapter the material has been presented in chronological order, beginning with the earliest provisions for each movement of the development of Industrial Arts and tracing its development to the present.

## CHAPTER II

A BRIEF HISTORICAL SUMMARY OF THE MANUAL TRAINING  
MOVEMENT IN THE UNITED STATES (1820-1876)

## Manual Labor Schools

Our ancestors came to this country possessed with all the efficiency needed at the time. The new country gave to all the chance to develop manual efficiency through the dire necessity of an existence. Schools for manual industries were not needed because everyone worked with his hands and the theories, recipes, and traditions of the crafts tended to be handed down from father to son or perhaps from master to apprentice. The common schools were busy teaching the three R's while the higher schools trained men to become lawyers, statesmen, and preachers; a system which was later expanded into the fields of science, engineering and history.

About the year 1820, the movement for organization of manual labor schools, the term then used, began in the United States. With the purpose of uniting manual training pursuits with the ordinary school work, schools were organized in Connecticut in 1819, Maine in 1821, Massachusetts in 1824, New York in 1827, and New Jersey in 1830. The bookish curriculum and changing conditions of the constantly moving frontier caused the public to discuss and consider this new philosophy of education very favorably.

## The First Theory

The theory at the beginning of 1820 was based in the main on the conception of formal discipline.

Manual training was entitled to a place in the school because it exercised the observation, trained the reasoning powers, and strengthened the will. 1

The early practice of manual training in the elementary school was experimental and formal. The type exercise was the universal form in which handwork appeared, based on the idea that the impulse to activity should be used to lead man to avenues of knowledge which otherwise would remain closed to him.

#### The First Method

The beginning in the United States was drawn from the work of Fellenberg, a Swiss philanthropist and educator, who lived near Neuhof, Switzerland, the home of Pestalozzi. Stimulated with like ideas, in 1799 Fellenberg started at Hofwyl, an institution that emphasized the need of vocational preparation in all grades of society, that combined with religious and moral training, and that regarded manual activity as the necessary implement to the sense perception and object teaching of Pestalozzi. The work of the children was expected to sell for enough to offset the expenses. This it failed to do. The most significant feature in this school was the provision for manual labor. 2

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1 N. E. A. Dept. of Supt. 1888.

2 Barnard. American Journal of Education, vol. III, p 323-230.

## Special Institutions for Manual Training

In Boston, some elementary training in schools was tried in the "Whittling School", and the "Dwight School". The experiment known as "The Whittling School" was opened in 1871 in the chapel of Hollis Street Church under the direction of Frank Rowell. The purpose of this private school was to train boys in the use of wood cutting tools.

The question of how to adapt the instruction given in the public schools to the needs of the pupils was not approved on its artistic side alone; consequently some training that would tend to fit boys for the common industries of life was too imperative to be longer neglected. The experiment was tried in the Dwight School, a public school of Boston.

This was an effort to meet the demand for giving a more practical industrial training to boys than had before been attempted in the public schools of the United States.

These two experiments well illustrate the diverse tendencies toward the development of industrial arts in the Dwight School, and the acquisition of mechanical skill in the "Whittling School".

## Manual Training as a Component of Elementary Education

The movement to introduce and develop Industrial Arts training as a component part of all elementary education was begun in the United States by the state of Massachusetts. Robert Dale Owen of America studied under Fellenberg and helped to introduce the plan into this country. The early

history of the Manual Training Movement in the United States began as a specialty to be taught to a particular class of pupils in special institutions.

Industrial Arts seems to have had a duality of function, first, as a means of attaining the end of education which emphasized the facts of science as a body of subject matter; (such a function of Industrial Arts generally resulted in the mastery of the materials and the manual processes of industry) second, as a means to facilitate the educative process which is a fundamental purpose of education. This leads to a new motive and means of expression in teaching other subjects.

The primitive life of the earlier pioneers gave way to the many complexities of modern livelihood. Things are being done at greater speed and in a manner that requires a more elaborate equipment. During the great change many of the arts of our forefathers have tended to become almost lost. Throughout this change a need developed for men with a wider knowledge of the materials and processes of industries, and the principles upon which the processes and the use of the materials rest. This knowledge had previously been handed down to the future prospective worker. The rapidly changing world forced industries to produce to capacity, which in turn tended to prevent the educating of workers. The schools were then looked upon for help. The trade schools, vocational schools, part time schools, evening schools and industrial schools were the results of the demands of industry. The writer will not attempt to discuss the industrial value of this movement.

## First Correspondence Course in Drawing

The first successful plan to supplement the usual methods of giving a practical knowledge of drawing to teachers unable to receive personal instructions, was put into use by the Prang Educational Company of Boston, Massachusetts. About 1878 this company gave drawing lessons by correspondence to teachers in public schools. We find that many teachers availed themselves of this needed opportunity for drawing information.

### The Workingmen's School of New York

In 1878, New York established a school that used constructive work for definite cultural purposes throughout the kindergarten and elementary grades.

In 1880, a Mr. Leland of Philadelphia, tried out an interesting experiment. The suggestion came to him on seeing in Cairo, little Arab children making trinkets for sale. His thought was that if Arabs are so skillful cannot all children be readily taught to make similar artistic things if good models are given them, so that without further training they may become profitable workers in what Leland termed "Minor Arts"? He reached some very interesting results showing the readiness with which young children could acquire certain amount of manipulative skill. This brought about the use of numerous associations for stimulating the exhibition of work by school children.

## Exhibits

The Centennial, held at Philadelphia in 1876; was of assistance to the manual training movement, then in its infancy in the United States. The articles made in the Russian Schools gave the main impulse to the very general interest in Manual Training Schools throughout the United States.

The movement for popularizing the new method of education was taken up by the public school educators. M. A. Newell, State Superintendent of Maryland, in his inaugural address as president of the National Educational Association in 1877 used as his topic "Education and Labor." This address and the influence of Mr. Newell resulted in the action by the Board of Education of Baltimore in opening a Manual Training School as one of the regular public schools of the city in the year 1884.

### Manual Training in Secondary Schools

Manual Training did not gain serious attention in secondary schools until 1880. Through the efforts of C. A. Woodard, a school was organized at St. Louis in connection with Washington University. This school, called the St. Louis Manual Training School, was a completely equipped high school giving instruction in shop work, mechanical drafting, and academic subjects.

Another development was the organization of the Institute of Technology in Boston by President Runkle. This school was similar to the St. Louis Manual Training School. These two schools were the first typical Manual Training schools in the United States. Both schools were modeled after the Russian Strogonoff School, and the Imperial Training School at St. Petersburg, Russia. They were in turn used as models for the

American schools. Later on, President Runkle of the Massachusetts School of Technology, and Professor Woodard, of Washington University, St. Louis, were the apostles of this new gospel of "Manual Training," in the United States.

A novel form of school influenced by M. A. Newell, was established in the city of Baltimore, Maryland. A manual training school was first set up by the public school authorities separate from the high school. The high school was retained with all its features. The manual training was simply added as an extra subject. This was open to all high school pupils who wished to attend. The plan threw a burden upon the advocates of the introduction of manual training; that is, the question of whether or not additional work would over-tax the pupils was considered important. It then became necessary to prove that manual training could be equally valuable to all the pupils without overtaxing them, and that they could keep up their preparatory studies for college without interference.

There were other preliminary considerations of importance incident to the proposal to introduce schools of this class. Such facts as these were considered: Is the given community justified in incurring for the support of its public schools the inevitable additional expense of establishing and keeping up a first class manual training school, with its costly plant of machinery and additional teachers? If the cost of procuring the machinery could be met, the question still remained as to whether this special form of school could be sustained without too great a demand on the funds provided for keeping up all the schools. Whether this extra cost would impair the primary and

lower grades in any way. These were serious questions that had to be met at the very outset of the movement. They had to be decided upon by each community in accordance with its aggregate wisdom and wealth.

#### First State Aid

In 1885, the legislature of New Jersey passed a law which provided that the state would duplicate any amount of money between \$500 and \$1000 raised by a city or town for the instruction of manual training. The city of Montclair was the first to take advantage of this aid.

#### The Term "Industrial Education"

The subject of "Industrial Education" as considered by educators of the time was complex and exceedingly liable to misconstruction. The educator who believed in higher education and development of humanity, who valued the manual training in schools and who valued the industrial arts instruction proposed that those who had the higher educational aims in view should abandon the use of the ambiguous phrase, "Industrial Education." As a substitute the phrase "The Creative Method" was suggested. The term was to be used solely with a view to the industrial art's teaching value in aiding to develop all the faculties of the human being. At this time, "Industrial Education was classified into four groups. These classifications are as follows:

Technical Training used in a sense not synonymous with "Industrial Education." Schools of technology, science, and colleges of agriculture were in this group. Accounts of these technical institutions will be used only as their courses of

drawing or other branches of industrial arts may bring them within the scope of this thesis.

Trade Schools were started in the United States in 1885. Many trade schools were strictly allied to industrial training. The pupils were taught the mechanical manipulations of some special industry or were trained in definite trades until they became skilled artisans. An appropriate name for these schools would seem to be "Apprentice Schools" for they assumed to do for the pupils just what the master of old undertook to do for the pupils in his care - that is to make him a master of the craft.

Some classes of this kind were established in New York through the public spirited liberality of R. T. Auchmuty. These were for a time under the auspices of the Metropolitan Museum of Arts and in the same building with the Art Schools proper of that institution, as were also the schools of "The Carriage Builders." However, as the art classes of the Metropolitan Museum of Art School, under the directorship of J. W. Stimson were developed, the knowledge of art was regarded as an essential preliminary to the teaching of any special application of art. The trade schools were purely practical and technical trade-teaching schools in which plumbing, masonry, and other like industries which demand special knowledge and skill are taught. The Hebrew Industrial School at Philadelphia, Pennsylvania, was a trade school planned for the benefit of the children of a colony of Russian Jews who were never sent to school, but at an early age were sent out as street peddlers. Inducements were at first given for their attendi

ance and some simple industries were taught them. Later, in connection with this effort a class for older boys was formed to learn the art of cutting garments. Against the cutters here trained, as against the artisans graduating from the schools founded by R. T. Auchmuty in New York, the labor union men made war. A quotation by I. E. Clarke illustrates the difficulty of giving any practical training in the industries in this country to the children of Americans:

In this connection the following editorial from the Washington Post of April 8 is apropos: It is rather hard on the average apprentice in this free country that he cannot even begin to learn a trade without all the employes in the shops striking. This is what happened a few days ago at the glassworks in Sandwich, Mass. An apprentice was engaged in the cutting department, when the workmen felt aggrieved and marched out. This is both absurd and cruel. An apprentice should be made welcome and helped to learn his trade as soon as possible. There is no other sensible course to pursue. And as working men persist in denying apprentices a chance to learn a trade, public schools must be established where they can be taught free and unmolested.<sup>3</sup>

The "Unions" welcomed foreign born artisans but threw every obstacle in the way of training American youth to be skilled artisans. By this policy they forced upon the attention of educators and legislators evidences of the pressing need that existed for devising some practical methods whereby the rising generation may have the opportunity, hitherto denied them, of acquiring definite training.

Manual Training, regarded simply as a factor in the general education of the child's faculties.

Elementary Instruction in the Industries, with the direct

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<sup>3</sup> Isaac Edward Clarke, Art and Industry, p 67.

purpose of practical application. These two groups were considered by educators as inextricably blended varying, as one phase or the other. The Kindergarten could use the object lessons, the so-called "Quincy Method." This method demonstrated the value of expert supervision, the interest and emotional pleasure as dominating factors in all school studies, and that the various forms of nature could be used as objects in teaching.<sup>4</sup> The middle grades could use manual training and the advanced grades could use technical instruction in special industries. This was considered a logical and continuous system of practical education. Is Industrial Arts practical or profitable? The following quotation is typical of the controversy on the affirmative question:

There can be no doubt of the advantage of such an institution. The difficult problem which is presented is whether such an institution can be practically and profitably given in connection with regular school work and under the management of the board, without interruption and detriment to the regular work of the schools.<sup>5</sup>

In 1886, Charles H. Ham of Chicago drew from the history of past ages the conclusion that the present system of education was a heritage of evil, and that the new idea of manual training offered the only hope of the race.

A very active advocate of the time was Dr. N. M. Butler, President of the New York Industrial Association, and of the New York College for the training of teachers. Dr. Butler, a teacher of psychology (and the head of the only college of pedagogy in the United States offering a four year course),

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4 N. M. Butler, "The Quincy Movement," in EDUC. REVIEW, vol. XX, June 1900, p 80-84

5 Report of the School Committee of Boston, 1882, p 26-7

gave much attention to the new educational methods. His comment is as follows:

The Manual Training Movement as we know it is new. It was put upon a strictly scientific basis, a very short time ago, indeed; but has been "in the air," as the saying is, for a long time. Over two hundred and fifty years ago Comenius prescribed manual training as part of the true curriculum. The "Didactica Magna," contains specific directions concerning it. Locke, Rousseau, and Fichte, all emphasized manual training though for different reasons. Locke agreed with Comenius and regarded it chiefly from the standpoint of its value in practical life. Rousseau and Fichte, however saw that its influence on the growth of the pupil, mental as well as physical, was to be desired. Froebel in his Kindergarten, reduced theory to practice, and in the kindergarten, all manual training as well as all rational and systematic education as its basis. But Froebel's work did not include the development of a scheme of manual training for the older pupils. This was furnished many years later, and from an unexpected quarter. Mr. M. Victor Della-Vos director of the Imperial Technical School of Moscow, took the initiative step. His report made at the Exposition in Philadelphia in 1876, and in Paris in 1878, contains this passage: "In 1868, the school council considered it indispensable, in order to secure the systematic teaching of elementary practical work, to separate entirely the school work shops from the mechanical works, in which, the orders for private individuals are executed. By the separation alone of the school work shops from the mechanical works, the principle aim was, however, far from being attained. It was found necessary to work out such a method of teaching the elementary principles of mechanical arts as first, should demand the least possible length of time for their acquirement; second, should increase the facility of the supervision of the graded employment of pupils; third, should impart to the study of practical work, the character of sound systematic acquirement of knowledge; and fourth, should facilitate the demonstration of the progress of every pupil at stated times. <sup>6</sup>

#### Industrial Education in New York

The Industrial Education Association of New York, in 1886 was established to aid boys and girls in voluntary classes. Two years later it was organized for the training of instruction for the new field. This was the first college in the states

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<sup>6</sup> Manual Training the Solution of Social and Industrial Problems,  
New York, Harpers and Brothers, Franklin Square,  
1886, p 403

to prepare teachers for manual training.

### Manual Training Accepted by Curriculum

The unique way in which mechanical arts was incorporated in the curriculum of the Manual Training schools of Boston and St. Louis led Chicago, Cleveland, Cincinnati and Toledo to establish private manual training schools during the period 1884 to 1886. Toledo was the first to introduce a girls department which consisted of the following: sewing, dressmaking, millinery, and cooking. This department and the manual training department were introduced in Baltimore in 1884, in Philadelphia in 1885, and in Omaha in 1886. The shop work instructions given in these institutions were joinery, turning, pattern-making, forging, machine work and in some instances foundry and tin-smithing. The so called "Russian System" was used. The Russian system taught tool processes. It was based on the belief that a boy should be taught how to use a particular tool and be made to practice on that tool in an entirely abstract manner until he was practically perfect in its use. Then he was taken to another tool and not until he had completed the rounds of the tools was he permitted to begin to make things. The Russian system revealed under the test of actual practice a serious difficulty. Work with tools which produced no object of use or beauty, and which was performed merely for the sake of the skill to be acquired, proved to have little attraction for the average American youth.

The experimental classes in carpentry that were financed by Mrs. Quincy A. Shaw at the Dwight School in Boston in 1882,

were transferred to the English High School of Boston in 1884, and were placed in the curriculum in 1888. Manual training previous to this period assumed an extra-curricular position. It was not until the influence from the Sloyd School of Boston in 1888 began to be felt, that tool work assumed a more interesting form for the boys. The fundamental principle of Sloyd which places emphasis on the value of working for a useful end, and so enlisting the interest of the worker soon found acceptance in the general practice in the elementary school, and to a certain extent modified the method of the manual training high school.

In 1887, the two fallacies of Industrial Arts were still as active as if inherited. All manual arts except penmanship and free hand drawing should be learned at home or in some business was one of the fallacies, and the other, that as soon as one introduces manual training he must bring in the idea of self support, was generally held. These fallacies will be further discussed in the conclusion of this study. The most noted movement in favor of manual training in the public elementary schools of the United States was from 1887 to 1890. This is often referred to as the "New Education." But in neither the theories, wishes, nor in the methods of the people who desired the manual training during this period can be found any promise of the aesthetic nature of the public school children of the United States. Only a minor group of educators considered the aesthetic nature. The major group valued the utilitarian factor or the educating of the mind through the hand, by developing skill of the hand and the eye.

Manual training was constantly under discussion as to its aims purposes or goals. J. D. Philbrick, C. C. Perkins, Walter Smith, and others took the stand that the great problem in the industries of nations was the aesthetic one, i.e., how to give attractive and tasteful forms to production so as to gain and hold the markets of the world. These men of Massachusetts ably defended the idea that manual training was to develop the aesthetic faculties of American children. Again, the faculty psychology shows up. They demonstrated that it was as effective to teach a subject by means of drawings and objects shown and explained by the teacher to many pupils simultaneously, as it is to teach the same thing to a single pupil. Other men defended the utilitarian value of manual training, the production of articles for market or for domestic use, the teaching of specific trades to those who wish or expect to follow them, and the teaching and illustrating of the principles of practical science. Others defended manual training from the point of being a stimulant to the individual's legislative and judicious ability. Quoting Woodard is typical of this group:

The developing and strengthening of productive activity by gaining a mastery over materials and certain conventional tools and processes; and not what shall be done with materials and tools after they have been mastered. The sense of mastership, of ability to smash, to break, to overthrow, which leads the undisciplined unskilled youth to commit vandalism may be converted into a sense ability to build, to invent, to construct, to create and while gaining this mastery, ulterior objects are kept out of sight just as we keep sonatas of Beethoven and nocturnes of Chopin out of the sight of a child absorbed in the intricacies of scales, fingering, and counting exercises on the piano. <sup>8</sup>

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 8 C. M. Woodard, The Educational Value of Manual Training,  
 p 95. D. C. Heath & Co. 1890

At the close of the nineteenth century emphasis was placed upon the social meaning of education which caused attention to be turned to the subject matter or content side of manual training. The conception of manual training came to be an educational instrument interpreting the fields of art and industry in terms adapted to child life and limitations of the school. The employment of self sustained formal courses were replaced by the use of handwork as a medium of social experience. John Dewey experimented with this idea in the lower elementary grades at the University of Chicago in 1896-1905.

Froebel, Pestalozzi and Herbart contributed in the field of education also. They aided psychologists in developing the conception of manual training as a means of expression in terms of form, color, materials, muscular activity and concrete ends. This was a means of expression peculiarly adapted to child life which comes about only when the worker contributes something of his own thought. This attitude was started at the beginning of the twentieth century and enabled manual training to have unity in the mental processes. Heusinger believed that the impulse to activity should be used to lead man to avenues of knowledge which otherwise would remain closed to him. Froebel, believing likewise placed handwork at the very center of the curriculum and reduced theory to practice. Herbart's idea was some what different. He thought handwork should be used as a means of teaching the other school subjects and felt that handwork depended upon the academic subjects for its problems. Salomon of Sweden and Goetze of Germany believed that manual training should be treated as a

subject co-ordinated with other subjects in the curriculum.

The secondary schools of the United States have developed practical arts to such an extent and fashion that one can now term it American.

Established with the double purpose of affording a more liberal and realistic training for boys of secondary school age, and of developing capacities for industrial careers the records show that apart from the large number that go forward into engineering high schools, only a trivial percentage of graduates from manual training high schools enter directly into industrial work, and that this small number go almost wholly into the "white shirt" occupations of draftsmen or administrative assistance. <sup>9</sup>

#### Summary of Industrial Arts in the United States

About the year 1876, under the influence of Della Voss, Runkle and Woodard, Manual Arts was based more or less on the mastery of the tools which generally consisted of work in wood and mechanical drawing of an artistic nature. The work centered in the teacher who was supreme authority, dictating the exercises to the pupils of the small one shop unit. Manual training was an end in itself.

About the year 1896, through the efforts of Bennett, Salomon and Griffith, Manual Arts was used which dealt with the technics of the arts: graphic, plastic, textile, mechanic, and bookmaking of an artistic nature. The work centered in useful artistic projects which were avocational in purpose and attempted to develop an appreciation for the crafts.

About the year 1910, sponsored by Bonser, Bigelow, and Dewey, Industrial Arts considered development of skill on an individual basis. The method depended on projects and the creative ability of the individual.

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<sup>9</sup> Paul Monroe, A cyclopedia of Education, vol. IV, p 126

The content dealt with any representation of modern industry which was conditioned by stated objectives. The ultimate goals which centered in the pupils, were exploration, guidance, consumer of education, and the development of personal-social traits. The basis of truth was scientific evidence and criteria as found in laboratories, industries, or unit-shops.

## CHAPTER III

## THE DEVELOPMENT IN KANSAS

## Manual Labor Schools (1854-76)

The Industrial Arts of the period was confined to the pioneer's home life. Only occasionally some of the few Mission Schools endeavored to teach some form of Industrial Arts which generally was for the benefit of the Indian and it was of a vocational type.

The difficulties that are the lot of all pioneers were increased by the Civil War. A boy who could fight Indians and participate as a soldier was most desired at the beginning of the state. Education was not neglected purposely. "Nature was in the raw". As the pioneer mastered the tasks of nature and established the State, the rural school developed and some minor forms of Industrial Arts was attempted generally in the field of drawing.

## Industrial Education

The first indication of some phases of Industrial Arts in the State was given in a report of Farm Superintendent F. E. Miller, of Kansas State Agriculture College in 1871.<sup>1</sup> Having no previous record available, Miller's class invoiced the tools and equipment. The repair work of the college buildings and construction of minor buildings was likewise done by the class. This work was offered under the Mechanic Arts course in connection with the Agriculture course. The

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<sup>1</sup> F. E. Miller's Report in the Eleventh Annual Report of the Department of Pub. Inst., 1871, p 252

following is a quotation from Instructor L. J. William's report on drawing at the Kansas State Agriculture College:

...The drawing class, consisting of fifteen pupils, have studied farm implements and machines, architectural designs, including plans, elevations, etc., aiming at the practical more than the ornamental. The senior division has followed the course indicated by catalogue, and made a thorough study of perspective, taking Ruskin as our guide in theory, and Chapman in practice; also reviewing the history of art as far as 320 B.C.... 2

In 1870, Kansas University offered a course in drawing, taught by John Folkman, Professor of German Language. 3 The next year drawing was transferred to the engineering department, in charge of Professor Molinard. Thus Kansas University was the first school to put drawing on an industrial basis. 4 But industrial drawing which was taught in its general principles in the scientific course was treated as a speciality with special reference to the professional aims of the engineer. The following is a quotation from Professor Molinard:

...industrial drawing (which is taught in its general principles in the scientific course) was in the engineering course treated as a speciality, with especial reference to the professional aims of the engineer.... 5

In 1870, Leavenworth State Normal (second normal in the state and closed in 1876) offered map drawing in the second term of the preparatory year and drawing in the middle year in the advanced course. 6

The Judicial District Institute held for the advancement of the teacher, devoted a period for discussion of

2 L. J. William's Report in the 11th Annual Report, op,cit.

3 J. Folkman's Report in the 9th, ibid., 1869, p 63

4 Ibid.

5 Molinard's Report, 13th, ibid., 1873, p 182

6 Ibid., p 240

industrial drawing in the programs held in various parts of the State. <sup>7</sup>

### Summary

The term Industrial Arts was not used at this period. The term Manual Training was being introduced in the schools of the Eastern United States at the close of this period, 1876. The Manual Labor Schools, as they were understood, were used some during this period, especially by the Mission Schools. The term Industrial Education was the term generally used. The Kansas State Agriculture College was attempting to establish Industrial Education through the Mechanic Arts Department. This department attempted to teach farm mechanics to meet vocational needs in a given community, whereby the content would be determined very largely by the mechanical problems common to the farms of that community. Kansas University was combining drawing with the Engineering Department for practical purposes. The State Normal Schools were in their infancy and were attempting to teach Industrial Arts only as work that would be of use to the elementary schools, such as: paper cutting, clay modeling, weaving and, etc. The state schools were using many phases of Industrial Arts that came under the present terminology of Industrial Arts, but they were scattered in many departments and generally were of a vocational nature, such as: architectural, machine, and elementary drafting, repair work, painting, electricity, household mechanics and etc.

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<sup>7</sup> Fifteenth, *ibid.*, 1875, p 120, 124.

## The Period From 1873 to 1900

### Industrial Education

The introduction of Manual Training into the United States in 1876 is significant in the history of Industrial Arts of the American schools. Although, the manual training movement did not reach Kansas until the close of the nineteenth century.

During the period , 1873 to 1900, many educators of Kansas gave serious thought to the value of Industrial Education for the agriculturist. With this thought in mind, the Kansas State Agriculture College established a Mechanical Department in 1873.

President J. A. Anderson of the Kansas State Agriculture College speaks of the Mechanical Department thus:

...Attention was then directed to the provisions of similar facilities for the practical education of both farmers and mechanics. The executive committee, on Sept. 23d, authorized the purchase of such tools as were necessary for teaching the mechanical and other trades. These were received about the first of November, and classes at once began in the following shops of the mechanical department: 1. carpenter; 2. wagon; 3. blacksmith; 4. paint; ...and in no recitations have students manifested greater interest.

(Telegraphy) These instruments being first received, the classes have had about two month's practice. Because of some experience as an operator, and yet more because of our indebtedness, I gave such instruction as other demands made possible. Early in December, Mr. Frank C. Jackson entered upon the discharge of his duties as superintendent of the department. A line three miles in length, and having ten offices, connects the college with the Kansas Pacific Railway and Western Union office.

(Printing) Type and cases for twenty-five students were in readiness on the first of December. A competent foreman has charge of the classes, which are under my personal supervision.

(Home Economic) Mrs. H. C. Cheseldine was employed as superintendent early in December, and classes have been formed in sewing, dressmaking, and millinery. Sewing machines will be in readiness at the opening of next term. 8

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8 J. A. Anderson's "Annual Report," in the 13th Biennial Report of the Supt. of Public Instruction, 1873, p 209-212

At the close of the year, President Anderson and Instructor A. Todd gave some encouraging reports for the years work. The reports here quoted:

Many inevitable difficulties have been encountered in organizing and operating the new department, not the least of these arises from the size of the classes, admission thereto being eagerly sought. Another in the fact that teaching the trades is new work; compared with which, that of allowing an apprentice to pick up information and blunder into skill is easy. Another came with starting too many classes together. But the greatest of all, was the utter want of room. Nevertheless, more has been accomplished during these sixty days than I had anticipated. A start has been made. Some valuable experience, always worth more than theories, has settled mooted points and indicated methods. Where before I only felt that given things ought to be done, I am now confident they will be done and done well. 9

The shops are being put in as good and efficient order as the very limited room assigned to them will allow.

In the carpenter shop, eleven benches are already fitted up. There are twenty-five sets of tools, together with one set in common. A class of thirty students are engaged in putting the shop in order, and other work in which they are receiving practical instruction.

In the wagon shop there are but two benches. In this department of industry a class of six have entered for instruction, and seem to be in earnest.

In the blacksmith shop, there is one forge and one set of tools, and a class of ten, most of whom are taking hold well. The tools in the blacksmith and wagon shops are my own, and I also have a turning-lathe which I propose to set up.

The class in the paint-shop is already organized, and practical work will commence as soon as the room can be fitted for it.

All the classes in the shops seem to be anxious to acquire practical skill in the several industries. Another forge is needed in the blacksmith shop.

All the work of putting in the stalls and constructing the cistern of the new barn, the erection of corn crib, and most of the work at the College and boarding house, including the new cisterns, was performed by students under my directions.

Permit me to suggest the employment of a skilled workman competent to teach horse-shoeing. 10

A great deal of the credit of making the Kansas State Agriculture College agricultural and industrial in its tendencies is due to the influence of J.A. Anderson, who was president from 1873 to 1879. During his term as president, three six year courses of study were adopted which were the Farmers', the Mechanics', and the Womens'. In 1877, the courses of study were reduced to four year courses and the Farmers' and Mechanics' courses were united.

In this year, 1873, State Superintendent H. D. McCarty recommended that drawing be placed in every rural school curriculum of the state. He distributed printed illustrations to the rural schools showing how drawing could be administered and supervised by the teacher. McCarty suggested that the advanced grades should do mechanical and architectural drawing. He felt confident that the advanced grade pupil would be successful in drawing on wood for the engravers. Quoting McCarty on drawing:

Drawing has become a necessity in answer to our needs as a State; that the feasibility of introducing it as a regular study is no longer questioned; that it can easily be introduced into our schools, and taught by our teachers with out having received special instruction; that time as well as interest will be gained in the teaching of penmanship with drawing over the teaching of it without, I would earnestly recommend that drawing be included in the list of studies taught in the public schools of our state. 11

Instructor A. Todd, of the Mechanical Department of Kansas State Agriculture College in his report ot the Board of Regents shows that the mechanical department paid all of its own expenses. <sup>12</sup> The same year, 1876, wood carving and cabinet making

11 H. D. McCarty, 13th Annual Report of Dept. of Public Instruction, Part II, 1873, p 27

12 Sixteenth Annual Report, *ibid.*, 1876, p 150-1

were added to the department. T. T. Hawkes was hired to teach carpentry for a period of three months; as an experiment to determine whether his wages could be returned from the work manufactured.<sup>13</sup> It proved a success. The department then engaged in making furniture for the horticultural building, flooring the basement, and etc. Not until 1879 were the students allowed to make articles for their own use.<sup>14</sup>

In 1880, the Kansas State Normal School considered the possibilities of Industrial drawing in the college curriculum.

This department will include all that is usually denominated 'industrial drawing'.<sup>15</sup>

The next year the following courses were listed as industrial courses under the free-hand drawing course:

- I. General Free-hand designing, figures for fabrics, etc.
- II. Landscape, life figures, etc.
- III. Instrumental drawing

Educational

- 1. Plane geometrical drawing
- 2. Projections of solids, actual and perspective
- 3. Projections of shadows, actual and perspective
- 4. Drill in any designing, requiring the use of instruments

Industrial

- 1. All architectural drawing and building construction
- 2. Machine; design and construction
- 3. Topographical drawing in civil and military engineering
- 4. All other designing in practical industry which requires the use of other instruments than the pencil or a substitute point.<sup>16</sup>

The students of the Kansas State Normal School received a general drill in the fundamentals of free hand drawing. They studied the historical forms of art. The course included lessons

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 13 Op. cit., 16th Annual Report, p 151

14 Second Biennial Report of the Supt. of Public Instruction,  
 1879, p 292

15 Ibid., p 302

16 Fourteenth Annual Catalogue of the Kansas State Normal School, Emporia, 1880-81, p 36

sketching and in the fundamentals of drafting. It was followed by the principles of actual perspective, their practical application, and special series of lessons upon architecture. The pupils were encouraged to depend upon themselves and develop what originality they possessed. The class of 1882 drew original plans for rural school houses which showed a decided improvement upon the ordinary box type of structure commonly found within the state.<sup>17</sup> The Industrial Education, as practiced in the Kansas State Agriculture College correlating academic training and industrial training, was the beginning of the "New Education" in Kansas. Manual Training entered the state of Kansas during the eighties. President A. R. Taylor's report in 1888 shows that the "New Education" was being considered by many educators of Kansas. A. R. Taylor, President of the Kansas State Normal School, gave an interesting discussion on manual training in his report to the State Superintendent, as follows:

The subject of manual training has been upon the attention of school men for the years past, and some of the normal schools of the East - particularly those located in the larger cities and in the manufacturing States - have made provisions for it in their course of study. It has been urged upon us, through manual training as related to the industrial arts, is being so successfully accomplished at the State Agriculture College....

...nearly two-thirds of our pupils come from the farm. Many of the others represent industrial occupations as well, and there cannot be a large number who lack the manual training which the manual-training schools in the main pretend to give. But while this may be true as a general statement, it must be remembered that the training is of that rough-and-ready sort which cannot accomplish much save by a line of apprenticeship or a series of costly experiments; much less is it able to organize and direct elementary, manual or industrial training satisfactorily. Manual training means more than the mere training of hand; it means the training of the head as well - the training of

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 17 Op. cit. 14th Annual Catalogue, Kansas State Normal School

the head in the conception of form, of relation, of beauty, of utility. Manual dexterity is sought, but intellectual cleverness as well. And so teachers whose youth may have been spent upon the farm or in the work shop may still be unable to accomplish much in the way proposed.

It is the province of the public school to give to every youth that education which will make him an intelligent citizen, and which will put him in a fair way to earn his own livelihood. There must be as little break as possible between the public school and the occupations which the great mass of young men and women enter. Everything which will serve to make them more observant, more prudent, more thoughtful, more self-reliant should enter into their early education. A school of mines is more important to Colorado than an agriculture college; while the reverse is true of Kansas. Taking the hint, may not the country schools wisely make their pupils familiar with all kinds of grain, grasses and fruits - their habits, modes of cultivation, etc.; with the use of common tools? May not a school located in a mining district properly acquaint the pupils with a great variety of minerals, methods of mining, treating ores, etc., substituting this material for one or more of the lines in the school just mentioned? Localities may easily be found where plain needlework and landscape gardening might not be out of place. Much of the work naturally leads off from manual training proper to that which is termed industrial. Any one can see much in the above-named work which may serve to awaken and perpetuate interest in school work.

Manual training may be properly so named when it begins to work systematically, and yet this may begin in the home as well as in the kindergarten or in the primary schools. Its elementary form is best seen in modeling in clay, in weaving mats, in drawing, in working out simple designs with needle and thread on card-board, in soap-cutting, in wood-carving, and in many kinds of object lessons. Much of this is already in every growing primary school, and scores of our people go out each year in excellent training for it; more, they are well trained for higher work in these lines; for the making of relief maps in clay, putty, and plaster of paris; for ready work in representative, constructive, and decorative drawing; for the manufacturing of all kinds of simple apparatus for illustration and experimentation. They are trained to the expert use of a thousand helps which may serve to entertain and instruct the child.... Though it does not seem desirable that anything much more elaborate in the way of manual training should be attempted here, our laboratories should not be entirely wanting in means to exemplify it and to make it fully understood and appreciated. I hope that a sufficient appropriation for this work may be made. 18

A.R. Taylor then proceeded to put into effect his ideas on manual training for the Model School department of the Kansas State Normal School. Quoting the Course of Study on manual traing as follows:

First year

1. Block building, tablet laying, sewing, weaving, paper cutting and folding, clay modeling
2. Forms with sticks, rings and pease work

Second year

1. Review and advanced work in first years subjects
2. Paper interlacing, scrap book, spool work, simple geometrical forms from card-board

Third year

1. Clay modeling - fruits, leaves with corresponding geometrical forms
2. Paper cutting and card-board forms of geometrical solids
3. Sand boards - map work

Fourth year

1. Paper cutting and card-board forms of geometrical solids
2. Soap cutting - forms of life
3. Clay modeling - maps, objects based upon forms of squares prism, pyramid, etc.

Fifth year

1. Clay modeling, work of previous grades continued
2. Card-board and soap - geometrical forms
3. Seat work

Sixth year

1. Clay modeling, work of previous grades continued, simple architectural forms
2. Slip work, basket, and trellis weaving
3. Carving soap, plaster and wood

Seventh year

1. Required:
  1. Clay modeling - architectural forms, modeling cornices, etc.
  2. Carving - simple design in soap, plaster and wood
2. Electives:
  1. Familiarity with use of saw, plane, trysquare, and etc.

Eight year .

1. Required:
  1. Clay Modeling - fruit and flowers, parts of human forms
  2. Carving - ornamental designs in soap, plaster, and wood
2. Electives:
  1. Familiarity with the use of the lathe, jig-saw, etc.

2. Joinery work in great variety 19  
 3. Wood turning, wood finishing and construction

The Kansas State Normal School was preparing teachers to teach drawing in 1891. A quotation from the annual catalogue on drawing follows:

Students who have completed the 30 weeks' work in drawing may thus continue the technical work and the study of methods of teaching. Many cities now require a special teacher and superintendent of the work in drawing, and students possessing special ability in this direction have every encouragement to fit themselves for it. A definite course is arranged for the 20 weeks, requiring the same time and preparation as for all other regular studies, and it can be substituted for any subject in the third year of the regular course. Lectures on methods in conducting the work, plans for organizing teachers into classes of methods and plans of criticism are given during the term.

A studio accommodating a limited number of students is well supplied with models, easles, etc. Thus the demand for more advanced work than can be taken up in the regular course of study is met and several graduates of the School have availed themselves of the privilege during the present year. 20

In 1893, the Kansas State Normal School had a well established drawing department in charge of Ada Hogle. Manual Training work was started with carving and joinery through the assistance of Ada Hogle, instructor in drawing and L. W. Mayberry was hired as assistant instructor in carving in 1893.<sup>21</sup>

The same year, the first state examination in "industrial drawing" was given in the professional and academic branches at designated places in the State. The following is a copy of the examination by Governor Fairchild:

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- 19 The Model School Department Course of Study, of the Kansas State Normal School, 1889-90, p 135-44
- 20 The Annual Catalogue of the Kansas State Normal School, 1891-92, p 67
- 21 Ninth Biennial Report of the Dept. of Public Instruction, 1893-94, p 29

1. Draw, freehand, an ellipse with an inscribed parallelogram.
2. Draw from memory a cross section of an apple or a tomato, showing skin, pulp, and seeds.
3. Sketch, with shading, a book, a table, or a chair.
4. Construct, freehand, the horizontal and vertical projection of a three-sided prism, inclined 15 degrees from perpendicular.
5. Give the essentials for teaching beginners in drawing, "The Gratton certificate law." 22

In the thirty-fifth year of the Kansas State Normal School, 1898-99, a Manual Training department was equipped and expected to function as the terminology of Industrial Arts is interpreted by this study. F. B. Abbott was employed as full time instructor of the Manual Training department. <sup>23</sup> Two rooms in the basement were furnished with a full set of tables and tools, including turning-lathe, scroll-saw, etc., for work in manual training for both sexes. It being realized that manual training would soon be in the schools of every progressive city of the state, and the teacher's preparation would not be complete without some manual training. The Annual Catalogue contained the following comment and outline of the Manual Training course:

Manual training in its essence is old, but in its present form is modern. It consists of series of exercises in which each exercise is a specific use of a tool, involving a certain mental effort.

The popular impression that only those who are to become tradesmen should take it is a mistaken one. Neither is the value of a course in manual training limited to those who have special aptitude along this line. Its aim is a general culture; a harmonious development of the pupil.

Manual training develops the body physically by means of properly arranged series of exercises; it increases the powers of the mind by cultivating neatness, carefulness, accuracy, individuality, close observation, the will power, creative instinct, the emotions and the aesthetic sense; it raises the idea of trades and the moral standard of rectitude and honesty.

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22 Op.cit., 9th Biennial Report, p 29

23 Eleventh Biennial Report, Supt. of Public Instruction, 1897-1898, p 53

Manual training supplements the book work in the public-school course of instruction in the best possible manner. It brings the pupil into actual contact with the crude material, which is changed and formed for a purpose. It enables the pupil to discriminate as to weight, size, form, color, hardness, and to learn all about the physical characteristics of the material. The habit of overcoming a resistance for a righteous purpose is invaluable.

Three elementary courses are offered, as follows:...

1. CLAY MODELING.- The type solids and objects based on them; geometrical borders; geometrical tiles; nature work; copying casts; casting plaster of Paris.

Paper Folding.- Making ground forms; folding beauty forms.

Cardboard Work.- Drawing, cutting, folding, pasting, completing model.

2. WOOD- WORKING.- Making working drawing of model; making model; consideration of explanations of series of exercises and their progression; history of manual training; the use, construction and care of tools; woods - their growth, qualities, and structure; manual-training outfit, prices, etc.

Venetian Ironwork.- Making object from drawing; original design; cutting, bending, and binding.

3. WOOD-CARVING.- Making drawing of pattern on wood; carving same; use and care of tools; original design.

Repousse.- Transferring of design; fastening work; working design; original design; care, use and manufacture of tools.

Special consideration is given to that part of the work which is of value in the grades of the public schools.

The wood-working equipment consists of individual benches well supplied with tools, so that each pupil may work to the best advantage. 24

#### Summary

The period from 1873 to 1900 was a transition from the decline of the Manual Labor movement which had been popular in the United States in the thirties, to one of industrial development. The Industrial Revolution was the death knell of apprenticeship in its old form. Men were seeking something to take the place of apprenticeship.

The state colleges were stabilizing themselves and searching for a substitute for apprenticeship. Technical and shop

instruction was introduced into the college curricula to provide a general knowledge of tools, materials, and processes of industry, particularly for those who are to direct and superintend the work of others. The Kansas State Agriculture College and the Kansas University were leaders of the state colleges in supplying men for directors of industries. The Kansas State Normal School at Emporia considered Manual Training entirely as an object of general education, and not as one of a special professional character. The colleges were using the Russian system of tool processes. The educators of Kansas at the close of the nineteenth century were noticing the success of Professor Larsson who had introduced Sloyd in Boston in 1893 and the work of John Dewey who was advocating self-expression, creativeness, and pupil initiative.

Manual Training in the High Schools

The beginning of the twentieth century marked the beginning of Manual Training as a department in Kansas High Schools. Previous to the high school's acceptance of manual training, the Topeka Industrial and Educational Institute, founded in 1895 for negroes, was successful in using Manual Training in its curriculum.

The history of High Schools with Manual Training departments is given as quoted from the Thirteenth Biennial Report:

The industrial work in the Kansas City, Kan., high school is of three kinds; woodwork, drawing, and typesetting. Each department is in charge of a specialist. Prof. A. M. Bumann, of the manual training school of Washington University, St. Louis, has charge of the shop. The course, at present, for lack of room, is limited to one and one-half years of work, instead of being four years in length, as it should be. This work was begun September, 1900. The benches and tools cost \$1200, while the cost of material per school year is about fifty dollars. Eighteen benches are in place and they accommodate 108 pupils. The recitation periods are each forty-five minutes in length....

The drawing department is in charge of Miss May F. Harman, a graduate of the Kansas State Agriculture College. The value of the present equipment is about \$300. The equipment includes plaster casts, easels, drawing-boards, and drawing-tables. The department accommodates forty pupils per hour, or 240 pupils per day. Various kinds of work are done in this department, and many of the pupils take a four-years course in drawing....

The type work was introduced January, 1902, and is in charge of Prof. W. W. Duglass, a graduate of the Kansas State University. The equipment consists of an 8x12 Gordon press, worth \$130, and type, cases, etc., worth \$100. There are thirty pupils in this department, and the printing done is such as will be helpful to the several departments of the high school, namely: Outlines in history, exercises in English, questions in civics, short sets in bookkeeping, outlines in grammar, physiology, psychology, etc.

All of the industrial departments are crowded, and many students are turned away each term for lack of room. Industrial studies are elective and are open to boys and girls alike. A credit of but one-half point per term is given in these departments, as no home study is required. Since manual work has been put into the school no charge

has been made in the amount of academic or book work required of each student. The boys and girls regard forty-five minutes in the workshop or art room a pleasant relief from the more severe mental work of the classroom. In many cases, the more attractive manual work holds a pupil in school until he becomes interested in book studies.

Manual training in the Pittsburg schools is optional, but the pupils are given credit for this work just the same as for any other branch. For the boys there is a room furnished with eight work-benches, each bench being supplied with two sets of tools.... Rooms are now being equipped in the new building for wood-turning, and forging; thus the boys will have a four-years course in this work.

The girls manual-training department consists of domestic art, or sewing, in which a systematic course is pursued, beginning with the simplest stitches and progressing until the complete dress is made....

The introduction of manual training three years ago in this high school come about by the desire of the Pittsburg people to give their boys and girls the best possible education. The manual training work in the high school has more than met the expectation of the citizens and teachers. Some of the direct benefits are: increased attendance, training in accuracy, and a stimulus in literary work. 25

These early manual training departments of the state high schools planned their courses from the Manual Training schools of the East, especially from the St. Louis Manual Training School at St. Louis, Missouri.

#### State Aid for Manual Training

In the beginning of the twentieth century, manual training began to receive attention from leading statesmen. Frank Nelson, Governor of Kansas, discussed manual training in his report to the State Board of Education as follows:

Manual Training and industrial education are surely coming in Kansas, and coming soon. No phase of education is receiving more careful attention at the hands of the very best educators of the country than this phase, which is destined to touch so intimately the industrial life of

the public. Whether it comes on the account of the demands of those who believe in its "culture value," or on account of the demands of those who believe in its "industrial and practical side," matters but little. The best consensus of opinion agrees that these two views of manual training are tending in the same direction.

The time is coming when manual training will be a part of every school curriculum. It will not displace, but supplement the present splendid school purposes already in operation. The establishment of well equipped manual-training high schools in so many important cities of our country and the rapid introduction of manual training in the grammar, primary and kindergarten grades in one of the remarkable signs of the times. Kansas certainly will not be behind in this important work. A manual-training department already established in our State Normal School for the training of the teachers, the several departments in splendid working order in our State Agriculture College, the finely equipped Fowler shops at the State University, the department of manual training at Bethany College, Lindsborg, are but a magnificent promise of what we may look for in the future educational history of the state. Already Kansas City, Pittsburg, Topeka and other places have taken an initiative in this matter. In the two former cities manual-training departments have already been established, and Topeka proposes to erect in the immediate future one of the finest manual-training high-school buildings in the West.

In connection with the discussion of manual training, too, it should be understood that all arguments in support of manual training apply with equal force in support of the establishment of domestic science and domestic-economy departments in connection therewith. The education of the boy for manual labor is important, but the education of the girl for the work and care of the home is equally important. 26

Endeavoring to find the cause or causes of pupils leaving school, Frank Nelson, sent questionnaires to various educators of Kansas. Two statements of significance to Industrial Arts were among the many causes received through this questionnaire. From a quotation of this questionnaire it is evident that the educators of Kansas were of the opinion that manual training was essential in a well balanced curriculum. The quotation follows:

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 26 Frank Nelson's "Report to the State Board of Education," in  
13th Biennial Report of Department of Public  
Instruction, 1901-02, p 35-6

...failure on part of schools to have manual training; ...our high-school courses are not practical; boys who never expect to enter college do not like to study Latin, and will quit school before completing on account of this; we need two courses in all our high schools - one preparing for university, one a manual-training, science-business course - this to hold the boys;... 27

R. S. Russ, Superintendent of Pittsburg High School, was of the opinion that manual training was of benefit in that it "increased attendance, training in accuracy, and is a stimulus in literary work." 28

Industrial Arts received its first state aid in the twentieth century, through Senate bill, Number 8, introduced by Senator E. E. Porter, and passed in 1903. Senator Porter's bill provided for instruction in industrial training in the schools of Kansas, permitted the fixing levies therefore, provided for state aid thereto, and made appropriation for such aid.<sup>29</sup> State Superintendent of Public Instruction, I. L. Dayhoff in 1906, comments on the act as follows:

Industrial Training.- The provision made by the legislature for industrial training in the public schools has enabled some cities and towns to install industrial departments. A question of financial ability is the chief barrier to further work in this line. The rural schools have done nothing toward industrial education.

The importance of industrial training as a factor in education is beyond debate. It has become an essential element in school training.

A small amount of financial aid from the state would greatly encourage and stimulate progress in these respects.

It is recommended that the original provision for state aid be reenacted- namely, to grant to each school maintaining an industrial department state aid equal to the district's annual expenditure for industrial work, not to exceed \$250 to any one district.

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27 Ibid. p 63

28 Ibid. p 72

29 Session Laws of Kansas, 1903, ch. XX, Section 1-7, p 28-30

There was a sum of \$17,000 of the original appropriation for this purpose unused, because schools had not time enough to establish departments before the appropriation lapsed.

The importance on industrial training as factor in education is no longer an experiment, it is a fact. It is worthy of careful and favorable consideration. <sup>30</sup>

### The "Auxiliary Manual Training School"

Senate bill, Number 234, passed Feb., 11, 1903 was an act to establish at Pittsburg, Kansas, "an auxiliary manual training school and making an appropriation therefor." <sup>31</sup> The purpose of this institution is excellent as stated in the words of Governor E. W. Hoch:

The new manual training auxiliary to the State Normal School, provided for by the last Legislature is now in successful operation at Pittsburg. Industrial departments are becoming more and more popular in the schools of the state, and are destined, in my opinion, to become a part of every progressive school. Public instruction in manual training and domestic science and art will, therefore, soon be a necessity in every up-to-date school. To prepare teachers for this work is the primary object of the new manual-training auxiliary. I have visited the institution during the past year, and commend, from personal observations, the work being done there. <sup>32</sup>

The Pittsburg shops were the most up-to-date within the state. There were many modern machines and methods employed.

The industrial work shops were listed as follows:

1. Modern machines and tools.
2. Forge shops with down-draft forges, power blast.
3. Foundry with smelting furnaces and all appliances necessary to demonstrate and do practical work.
4. Cabinet shops with modern machines and tools.
5. Sheet-metal shops with modern machines for working.
6. Pattern shops, with lathe and other wood-working machines.

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 30 I. L. Dayhoff, 15th Biennial Report, 1906, p 35

31 Session Laws of Kansas, 1903, p 125

32 E. W. Hoch, "Message from the Governor", in Public Documents, Kansas, 1903-04, p 16

7. Joinery and grade wood-working shops for high-school and grade manual-training work.

8. Wood-turning shops, with wood-turning lathes for all kinds of fancy and plain turning.

9. Studio for wood-carving and clay modeling. 33

Mr. R. S. Russ, principal of the State Manual Training Normal School Pittsburg, Kansas, gave an interesting report of his school to the governor of the state in 1906, as follows:

...It is now conceded by nearly all fair-minded careful thinking people that the ideal education is that which educates the whole being at the same time; that will give culture to the hand the eye at the same moment in unison with mind and heart. Manual training does this. In fact, the American people stand face to face with the problem of providing a higher education for the people which will afford culture and practical preparation for common duties at the same time; hence the cause of the remarkable growth of this unique institution....

This institution is unique in this- that it is the only normal school in existence, that requires some form of manual training throughout its courses for graduation.

The courses offered are three years in length, consisting of three years' academic work, the same as the first three years at Emporia; and in addition to this the State Manual Training Normal offers three years in Manual training, consisting of sloyd, elementary carving, clay-modeling, Venetian iron work, elementary free-hand and mechanical drawing for the grades, in addition, joinery (carpentry) advanced carving, pattern-making, mechanical and architectural drawing, wood-turning, forging and machine shop practice. The domestic art course consists of plain and ornamental sewing, drafting, cutting, fitting, and dressmaking; The domestic science course consists of cooking, embracing lectures on food principles and foods, laundry course, fuel value of foods, bacteriology, home nursing, domestic economy, house hold sanitation, and chemistry....

The demand for manual training, domestic art and domestic science teachers is far greater than the institution, can possibly supply, and especially is this true of the young men. There is a great opportunity for young men to engage in teaching manual training at good salaries, as the demand is increasing each year. 34

#### The Wichita Manual Training School

In 1908, Wichita built a Manual Training High School.

This was the most modern in the state. Plenty of rooms were provided for wood working, wood turning, forging, mechanical drawing, and machine shops. There were also, cooking rooms, sewing rooms for domestic science. A large lunch room for domestic uses, one that accommodated 600 pupils, and a large kitchen arranged for rapid service, plus many storage rooms, completed the arrangement of the building. 35

#### The Kansas State Agriculture College

The most important change made at the Kansas State Agriculture College during the period 1908-1910, was the complete revision of all courses of study of the college with a view to introducing the industrial and practical work at an earlier stage in the student's life. In the new courses the men began the study of animal husbandry, agronomy, carpentry, and blacksmithing and the young women, sewing, cooking, and free-hand drawing immediately upon entering the college. The Industrial Arts idea seems to have received support in that the students interests were quickened, they remained longer in the college courses, and a larger percent of the students graduated. Of equal importance was the fact that those who graduated received instruction of a nature that was of special use to them when they took up the duties of life. 36

In the larger schools of the state the different branches of Industrial Arts were tentatively introduced, their disciplinary and practical value tested and courses of study were modified. The smaller schools then took advantage of the results

35 Seventeenth Biennial Report of the State Supt. of Public Instruction, 1908-10, p 113

36 Ibid. p 42

of these experiments and modified their programs without the necessity of risking the making of serious and costly mistakes.

The state colleges considered Manual Training of value to the curriculum. Although the degree of value was much discussed. Some of the leading educators considered the "industrial and practical side", while others considered the "culture value". The State Agriculture College and the State University being typical of the former, while the State Normal School considered a combination of the two degrees of value and trained their teachers to teach the use of head as well as the use of the hand. 37

#### The Qualifications for Industrial Certificates

The following qualifications were prescribed by the State Board of Education for the examination of teachers who desired certificates of qualification to instruct in manual training or domestic arts.

The Board directed the announcement of examination for certificates to teach under the law for industrial training; the examinations to be held Wednesday and Thursday after the fourth Monday in August annually, at Manhattan, Emporia, Lawrence, and Pittsburg.

Candidates not holding a certificate ranking as high as a county third grade, were requested to write on the county-examination questions at a county examination prior to the industrial examination and to make a standing sufficient for a third-grade examination.

Two grades of manual-training certificates could be obtained. The lowest grade certificate was valid for one year. The State Board of Education considered the course of manual-training offered by the State Normal School at Emporia, satisfactory to fulfill the requirements for the one year manual training certificate. The additional ability required for the teaching of lathe work and joinery courses, as was given at the Pittsburg Manual Training Auxiliary of the State Normal, would entitle the successful candidate to a two year manual training certificate. 38

### Section 3. - Requirements for industrial certificates

1. Industrial certificates may be granted on examination or on credentials which are satisfactory to the board.
2. Applications must be filed on the official blank, which the state superintendent will furnish upon request (form 103-A).
3. Two grades of manual training certificates will be issued: (a) A certificate to teach manual training in the grades, which certificate shall include ability to teach both theory and laboratory work in clay-modeling, cardboard work, elementary carving, and sloyd. (b) A certificate to teach manual training in high schools, which certificate shall include, in addition to what is required for a certificate to teach manual training in the grades, ability to teach both theory and laboratory work in mechanical drawing, advanced carving, jointery and wood-turning.
4. ....
5. On examination an average of eighty-five per cent. with no grade below seventy percent. will be required for an industrial certificate.
6. The first issue of industrial certificates shall be for one year. Renewals may be for two years, provided the holder has taught successfully on the first certificate; otherwise a renewal may be for one year.

### Section 4. - Rules for State Examination.

The attention of candidates is invited to the follow-

ing rules:

1. The examination questions in each branch will be given to candidates at the beginning of the time allotted to the examination in that branch, and at the expiration of that time the written answers will be collected.

2. During the examination the candidates shall be seated as far apart as possible, and they will not be allowed to communicate with one another.

3. Answers should be brief, but must be complete in logical exposition and in grammatical structure. The answers in mathematics must show the process as well as the results in each case.

4. In grading candidates, due weight will be given to the character of manuscripts in regard to penmanship and neatness of arrangement of answers.

5. The standing of candidates in spelling, composition and penmanship will be determined in part by the character of their respective manuscripts.

6. One hundred per centum will denote perfection.

7. An average standing of eighty-five per centum, with not less than seventy in any topic, will be required for a certificate....

8. Candidates are required to write with ink, upon legal-cap paper of standard size, and deliver the same unfolded. Candidates must furnish their supplies - paper, pen, ink, erasers, pencils, etc.

9. The examination in advanced subjects will comprehend the matter embraced in text-books used in the collegiate departments of first-class colleges.

10. These certificates and diplomas supersede the necessity of any and all other examinations of the persons holding them by county, city, or local boards of examiners, and are valid in any county, city, town, or school district in the State for the term of years therein set forth.

#### SECTION 5. - Program for Examinations

...For Industrial Examination

##### Forenoon Session

Written Examination - Manual Training.

##### Afternoon Session

Laboratory Work - Manual Training. 39

Industrial Education in the One-room Rural School

The committee on Industrial Education in Schools for Rural

Communities considered manual training of great importance.

In the field of manual training considered apart from the work in domestic art, economy, and science, the following ends are sought. The training of physical, intellectual, and moral activities through the use of tools and materials, together with such a practical knowledge of these tools and materials and their uses, as shall enable the boy to do very many things in the line of construction and repair work necessary upon the farm which would otherwise have to be done by hired labor at considerable expense. 40

Wood, iron, leather, and paint were considered the things to be used in the rural schools depending largely upon the local environment and industry of the respective communities.<sup>41</sup> Teachers were hard to find who could successfully teach manual training in the rural schools.<sup>42</sup> The architecture of the rural school building began to provide work rooms for manual training and domestic science.<sup>43</sup> State Superintendent E. T. Fairchild, in his report to the Governor, discusses the value of a work room for rural schools and quotes from Ex-State Superintendent Stetson, of Maine, as follows:

In every rural schoolhouse there should be a room about nine feet wide and twelve feet long, in which should be placed a small workbench and a few common tools used by carpenters. There should also be a limited supply of lumber suitable for making the implements, utensils and apparatus needed in the home, on the farm and in the school. ...It will be much better if the teacher does not attempt to be severely scientific or technical. Most of the teachers do not and many of them can not act as expert instructors in this work, but they may give general directions and, to an extent, oversee what is done. There will always be members of the school who will have an aptitude for the things in which the teacher has no special skill.

Let it be distinctly understood from the start, that

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40 N.E.A. Report of the Committee on Industrial Education in Schools for Rural Communities, 1905, p 22

41 Ibid. p 23

42 Ibid. p 26

43 Op. cit., 17th Biennial Report, p 37

the teacher is not an instructor in manual training and does not pretend to be; but that she and the children, working together can provide many necessary articles.

Many blunders will be made and some material will be wasted, but neither of these items should be discouraging. Perhaps there is no better way of learning how to do a thing than by the mistakes one makes in doing it. The Knowledge and skill thus acquired develop taste, judgment, ability to meet emergencies, and at the sametime stimulate originality and invention. Best of all, these activities furnish an opportunity for the children to train their hands while they are using their heads. They also develop self-reliance, independence, and love of manual labor and a desire to be physically useful in the world.

A room provided with the material described above and used by intelligent teachers and ambitious pupils will help to give us a student body that will be industrious, enterprising, skillful, self-supporting. It will help solve not a few industrial problems and will furnish a satisfactory answer to many troublesome moral and intellectual questions. It will help keep the boys and girls in school and aid them in becoming intelligent and worthy citizens when they leave school.

There is a great opportunity for usefulness in this work, and it is sincerely hoped that parents, school officials and teachers will appreciate the situation and make use of the advantages which such training will surely give. 44

### The First Course of Study for Industrial Training Schools

As authorized by the State Board of Education of Kansas, under authority of Chapter 20, Section 3, laws of 1903 (Section 202, of the Kansas laws of 1903) the first official course of study for industrial training schools was issued. The outline gave a minimum list of equipment for a minimum course in manual training, an illustrated course for the first ten grades, and additional suggestions for each grade. But the object or the purpose of the work was not stated. 45

Previous to this, each institution had some form of study of their own. About 1900, F. B. Abbott, head of the Manual

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44 Ibid. p 42

45 The State Board of Education, Official Course of Study for Industrial Training Schools, 1903.

Training Department of the State Normal School at Emporia, published a course of study for manual training in the grades. The author gave an estimate of the cost of materials and supplies for a class of ten pupils in each grade. A number of lessons for a period of twenty-three weeks were planned for each grade, and the author's purpose and aim were as quoted:

The author publishes this outline with the thought that it is easier to introduce manual training by presenting a definite lesson each week than in any other way; yet he remembers that local conditions need to be taken into account and that the progressive teacher should feel at liberty to modify the work as judgement may direct.<sup>46</sup>

The object of the manual training in the primary, intermediate and grammar grades is to cultivate in the pupils habits of carefulness, industry, perserverance, and observation; to create and develop a desire and love for the beautiful.

This course is to supplement the course in drawing now used in the Kansas schools and gives opportunity to practice measuring in inches and fractions of inches.<sup>47</sup>

In pursuance of the law of 1905,<sup>48</sup> the State Board of Education in 1907 submitted a course of study to the principals and teachers of schools in cities of the third class and such other schools as had a nine-month term each year and could complete the common school work in eight years. The last page of this Course of Study gave a "Suggestive Course of Study for High Schools," but Manual Training was only referred to in the footnotes.

It is suggested that two periods per week, of eighty minutes each, be devoted to Manual Training in the first and second years of the high school, and that the time for Manual Training be taken equally from the different subjects of those two years, and that it be given to all

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46 F. B. Abbott, Manual Training Schools in the Grades, p 1

47 Ibid. p4

48 Session Laws of 1905, ch 387

pupils of those years. 49

Nothing was said as to aims, purposes or objectives in this Course of Study. But the Course of Study issued the following year considered this factor.

The united action of mind and hand secures coordination of mental and motor activities and by continued reaction insures the harmonious development of both mind and body. It gives to the pupil greater control of his will by teaching him to know his possibilities and his limitations. 50

Beginning with the Course of Study for the year of 1912 and for the following ten years the wording of "The aim of the work in manual training..." was nearly identical, with here and there an extra phrase or synonym. The last Course of Study available, 1929, is quoted parallel with the 1912 Course of Study for the reader's comparison.

#### Comparison of High School Courses of Study

1912

The aim of the work in manual training as it is taught in the schools of our country ranges all the way from the general development of the child's faculties and powers to the training of boys to become skilled workmen. The mechanic of the future must be an all-round workman; that is, he must understand something of both hand work and machine work and will therefore, be broader minded and better developed than either the old-time hand worker or the machine worker of later time,

1929

The aim of the course in industrial arts as it is taught in the public schools of Kansas ranges all the way from a general development of the child's faculties and powers to the training of boys in resourceful, constructive thinking, and the teaching content of the various courses in industrial arts furnishes quite as valuable material for the teaching of resourceful, constructive thinking as in any other subjects included in the high school curricula.

In addition to this, perhaps the greatest good that will

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- 49 The State Board of Education, Kansas Course of Study for Schools in Cities of the Third Class and others Having Nine Months Term, Sept. 1907, p 131-2
- 50 The State Board of Education, Course of Study for the High Schools of Kansas, 1908, p 123-4

who is an expert in the handling of one particular machine, but who can do nothing else. The manual training in the schools all over the country has brought this about to a considerable extent. It has aimed to give the pupil a broader knowledge of materials, a wider range of expression, and a more extensive knowledge of tools and machinery.

It is, in fact a systematic training, which must develop the physical, mental and moral sides of the child if persisted in by him and if taught by the right kind of an instructor. The united action of mind and hand secures coordination of mental and motor activities, and by continued reaction insures the harmonious development of both mind and body. It gives the pupil greater control of his physical powers and increase his ability to do his will by teaching him to know his possibilities and his limitations.

The pupil who needs manual training most is he who is awkward in the handling of himself and his faculties—the boy who puts his hands into his pockets because he does not know what to do with them; whose school work is untidy and devoid of all system; who has formed objectionable habits that can be corrected under the direction of a careful thoughtful teacher; Many things may be said to an individual which can not be said before the class, and for that reason the manual-training teacher often has a better opportunity than the teacher of academic subjects to correct the faults of the pupil.

A boy with a few inex-

come from the industrial arts in our schools is a better understanding of the problems of modern industries. This, of course, will in a sense be a by product of the course in industrial arts. It is true, of course that a few boys who have a rather highly developed mechanical aptitude will profit largely from a course in industrial arts toward developing into mechanical tradesmen, but the development of mechanical tradesmen is a minor objective. It is subordinate to the development of resourceful, constructive thinking on the part of the student.

The successful mechanic of today and of the future must be adaptable, by which is meant that he must not only willing to make quick changes, but capable of making them in his method of doing things. Science and invention are restless and unusually active. Often a scientific discovery or a new invention makes it necessary that the mechanic change his method of procedure almost overnight or else superseded by some one who can so adapt himself. If, therefore, the industrial arts school would render a real service it must so conduct itself as to develop the characteristics of adaptability.

A course in industrial arts should emphasize repair work as much, or perhaps more than the construction of new articles, for practically every boy who enters a course in industrial arts will some day have a home of his own, and there are al-innumerable repair jobs to be done around the home, many of which can be done by a person with a few tools, and even a very limited knowledge of the

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pensive tools can be of a great assistance to his parents in making repairs about the home repairs that would mean the saving of quite a sum of money in many cases. He would, moreover, be furnished with an occupation that would keep him at home, and, because of his greater knowledge of the value of materials, would tend to make him more considerate of the property of others.<sup>51</sup>

skill required by the expert. Many of these repairs will either be neglected or be made at considerable expense unless there is some one around the home who can do them without calling a mechanic.

There is no particular type of boy who can be said to profit most by a course in industrial arts. Certainly no industrial arts class should be made the dumping ground for students who are not endowed with sufficient intelligence to successfully pursue the academic subjects, for rarely does such a student show greater ability in industrial arts subjects than in academic subjects. Industrial arts instruction is just as valuable to the highly intelligent boy as to the boy of lesser intelligence.<sup>52</sup>

### Industrial Training Schools

Indirectly in 1911 Manual Training was aided by the Legislature in its appropriation of \$25,000 a year for the biennium to encourage the introduction of courses in agriculture and home economics in schools already reorganized under the Normal Training Act.<sup>53</sup> The various forms of Industrial Arts courses that were taught in the ninety-six schools that were immediately approved were shopwork, clay work, drawing, home training, household training, industrial mechanics, some manual training in agriculture projects, simple metal work, and textile work.<sup>54</sup>

### Special High School Certificate

In accordance with the act of the Legislature, the State

51 Ibid. 1912 p 196

52 Ibid. 1929 p 123

53 Session Laws, 1911, Ch. 20, Sec. 1-7

54 Eighteenth Biennial Report of Supt. of Pub. Inst., 1911.

Normal Schools provided for the special high school certificates to be issued for a period of three years and renewable for a like period upon the completion of thirty additional hours of work. This certificate could be issued in connection with the Life Certificate or not, as the student desired. The Special Certificate law is as follows:

Each of said institutions (Kansas State Normal School, State Manual Training Normal School, and the Fort Hays Kansas Normal School) shall have power to issue certificates to teach Manual Training, Domestic Science, Agriculture, Commercial Subjects, Drawing, Music or other occupational subjects upon the completion of such course of study as may be prescribed by the faculty of said institutions and approved by the State Board of Educational Administration. 55

Acting on the assumption that the 1917 Legislature <sup>56</sup> had in mind a Junior High School of the seventh, eighth and ninth grades, the State Board of Education authorized a course of study in 1923. Two periods per week in Manual Arts for the seventh and eighth grades was suggested for a program of the single-curriculum type. Ten periods per week in Manual Arts for the seventh, eighth, and ninth grades in an industrial course was suggested for a program of the multiple-curriculum type. While the program for the constants-with-variables type of curriculum suggested Manual Arts as: three periods per week required in the seventh grade; five periods per week in Industrial and five periods per week in Household Arts as electives in the seventh grade; five to ten periods per week each of Industrial Arts or Household Arts as electives in the eighth grade and likewise in the ninth grade. The courses

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 55 Session Laws of 1915, Section 6, Senate Bill 313  
 56 Session Laws of 1917, Section 7, Chapter 284

to be given in the seventh, eighth and ninth grades in Industrial Arts were benchwork, carpentry, cabinetmaking, forging, machine-shop work, sheet metal, brick and cement, electrical, painting and woodfinishing, printing, bookbinding mechanical drawing, applied design and shop mathematics. Gas engine and automobile mechanics, patternmaking were suggested for the eighth and ninth grades. No text books were approved for Manual Arts in Junior High Schools by the School Book Commission. <sup>57</sup>

#### Standardizing and Accrediting High Schools

The Legislature passed the Standardization and Accrediting Act in 1915 <sup>58</sup> which gave the control to the State Department of Public Instruction. This department recommended Industrial Arts classes of twenty pupils each. <sup>59</sup> In 1920 the North Central Association recommended introducing Manual Training and Household economics in all schools. The unit of high school work meant the giving of credit for satisfactory completion of the study of any subject requiring preparation outside of the recitation with five recitations a week for a full school year of not less than thirty-six weeks, and with recitation periods as best suited to the needs of the pupils. From the standpoint of Industrial Arts it came to mean a course of daily exercises with double periods extending through an academic year, and requiring no previous study in preparation

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 57 State Dept. of Pub. Instruction, Junior High School Manual, 1923, p 19-22

58 Session Laws 1915, Ch. 296, Sec. 7 p 380

59 Course of Study for State High Schools of Kansas, 1917, p 7

for a recitation. <sup>60</sup> Industrial Arts was always considered as an elective in the public schools of the state. Industrial Arts was often not offered in the small high schools of the state in order that the academic subjects could be carried to fulfill the accrediting standards.

#### The Kansas School Text Book Commission

The Kansas School Text Book Commission established in 1897, <sup>61</sup> listed for drawing, Prang's Elementary Course in Art Instruction (Prang Education Co., Chicago, Ill.) for the year 1907, <sup>62</sup> and the year 1908, Seegmiller's Applied Arts Drawing Books ( Atkinson, Mentzer, & Grover, Chicago, Ill.) <sup>63</sup> Books for Manual Training did not appear on the approved list issued by the Kansas School Text Book Commission until the year 1920. Prevocational and Industrial Arts, a book by H. E. Wood and J. H. Smith (Atkinson, Mentzer, & Co. Chicago, Ill.) was approved by the Text Book Commission for a period of five years beginning September, 1920. The same book is still approved by the Kansas Text Book Commission for Industrial Arts at the present time, 1933. No revisions have been made in the past thirteen years; evidently the text book is a good one or the teachers in the field are indifferent. The writer is of the opinion that the leaders of Industrial Arts in the state are using the Prevocational and Industrial Arts book only as a reference and make greater use of other writers.

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60 Ibid.

61 Session Laws of 1897, Ch. 179, Sec. 1, p 377

62 Course of Study for High Schools of Kansas, State Board of Education, 1907,

63 Ibid. 1908

## Federal Vocational Education Law, 1917

The provision of this law was fulfilled by Kansas through House bills 886 and 902. <sup>64</sup> This law, commonly known as the Smith-Hughes law, brought forth a possibility for apprenticeship and a means of giving education of a definite character to the youth who could not take nor benefit by the ordinary high school and college education. As a result of this development in the State there was much confusion as to the fields to be covered by these two types of education, namely Vocational Training as recognized by the Federal Vocational Educational Law, and Industrial Arts. This study was not intended to explore the vocational field; therefore, the writer will not attempt to trace the development and the splendid work that has been done and is being done for the people of Kansas by the Vocational Training phase of education.

### Summary

The close of the nineteenth century and the beginning of the twentieth century was the real beginning of Industrial Arts in Kansas public schools. Educators of the State were supporting the movement. Kansas City, Pittsburg, and Topeka were conducting Manual Training courses either in separate high schools or in a department within the high school. Manual Training was recommended for the rural schools, and building architects were designing rural school houses with work rooms for Manual Training. Courses of studies were made for

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64 Session Laws of 1917, Chapter 280, Section 1

Manual Training in the grades, high schools, and colleges. The college entrance requirement accepted one hour of Manual Training from accredited high schools.

C. W. Ridgway estimates that 484 of the 685 high schools covered by his study in Kansas, are offering 830 industrial arts classes. Four hundred eighty-four of the 4,421 high school teachers employed in Kansas high schools teach industrial arts. Twenty-six per cent of these 484 industrial arts teachers, teach only industrial arts classes. Eighty-nine per cent of the 26 per cent (107 teachers) have a college major or minor in industrial arts.<sup>65</sup> This means that these teachers have between 15 and 35 college hours of credit in industrial arts. Three per cent of all Kansas high school teachers (4,421) have a major or minor in industrial arts. Five per cent of all the classes conducted in the 685 Kansas high schools studied, were industrial arts classes.<sup>66</sup>

Ridgway's survey also shows that 74 per cent of the industrial arts teachers taught additional subjects. The combinations are as follows:

- 1% taught industrial arts and English
- 13% taught industrial arts and mathematics
- 10% taught industrial arts and social science
- 13% taught industrial arts and physical education
- 19% taught industrial arts and commerce
- 1% taught industrial arts and music
- 13% taught industrial arts and agriculture

...no teacher was reported as teaching a combination of industrial arts and Latin, modern language, or home economics. 67

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 65 C. W. Ridgway's Thesis, "A Comparative Study of the Training and Teaching Combinations of Kansas High School Teachers," 1931, No. 5, Bulletin of the Graduate Division, K.S.T.C., Emporia, Kansas,

66 Ibid. p 171

67 Ibid. p 17

The industrial arts instructor ranks second only to vocational agriculture instructor in the salary scale paid Kansas high school teachers. The mean salary for industrial arts teachers in 1931 was \$1876.<sup>68</sup> Quoting from Ridgway as follows:

...This field is not generally handled by a Smith-Hughes man, so it lacks the protection that vocational agriculture enjoys in the Kansas high schools. However, it possesses certain characteristics and skills which are not readily picked up by some one who has not had training in the subject. A teacher who would not hesitate to attempt the teaching of a class in history or mathematics, a subject in which he has had no college training, would probably not attempt to teach a class in printing, sheet metal, or auto mechanics without college preparation. The prohibition of tradesmen who are skilled in woodworking and other industrial crafts from teaching in the public schools without proper certification also lends to the college industrial arts man a monopoly which aids his salary standing. Another reason for the high salary average is the fact that there are few women in the industrial arts field. 69

A tabulation of enrollments in the various subjects offered in 150 class A high schools in 1930 shows that household arts ranks seventh and industrial arts ranks eight in the number of students enrolled. 70

There are 7,221 boys and 178 girls taking manual training, and 54 boys and 8,549 girls engaged in the study of household arts. The proportion, if carried forward for all the high schools in the state, would show two times these numbers. 71

The writer estimates that industrial arts courses in Kansas high schools have an enrollment of approximately 32,000 pupils. The total expense of teaching industrial arts in Kansas high schools is probably not far from a million dollars a year. However, since the salary of the teacher makes up a

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68 *ibid.* p 28

69 *Ibid.*

70 Twenty-seventh Biennial Report of the Supt. of Public Instruction, 1929-30, p 22

71 *Ibid.*

considerable item of this expenditure, it must be kept in mind that but 26 per cent teach industrial arts only; the other 74 per cent teach other subjects as well. Because of this overlapping, it is very difficult to estimate with accuracy the actual expense of the Industrial Arts program by itself.

## CHAPTER VI

## Conclusions

As an inheritance from the educational movements of the past through which Industrial Arts has passed, there exists today much confusion in philosophy, objectives, and methods which must be defined and understood if the Industrial Arts are to persist as an important factor in American education. One indication of this confusion is the various terms by which the work is designated. The Western Arts Association conducted a "Terminological Investigation" from 1929 to 1932. The concluding recommendations from the "Symposium Number" is as follows:

...One professional conclusion should be noted in the suggestions and examples of techniques one may use in the evaluating terms. If the committee had produced only definitions, as in the case of Professor Whitford's committee for the Federal Council on Art Education, then Dr. Bawden's reference to the need for coping with a dynamic rather than a static field would have more than held. The techniques used by the present committee should prove as serviceable and as valid a generation hence as today. Further conclusions and recommendations are:

That "there really is no such thing as an 'exact' synonym."

That a valid definition is no more than a combination of "proven" concepts.

That the combination of philosophic concepts and etymological derivation of a term must agree in the term chosen. Instance of "Manual Education."

That while some terms in the Master Word List are obsolete, it is not possible to strike them from the list, because they are still labels of concepts of some sort, chiefly historic.

That the word "education" be added to a term like "Commercial Arts" or "Household Arts" if reference is made to a field or program.

That the program maker for this particular section scrutinize the topics contemplated, then assign the family, omnibus, or generic name which will best describe the group of ideas included.

That again this year, as last, the program of this section does not deal in any way with concepts described by the term "Manual Training."

It is therefore again recommended that the designation "Manual Training" be dropped, if the program is not to deal with "Manual Training" content.

As the committee's work progresses, it became evident that individual members of the committee were deriving the greatest benefit from the investigation. This would seem to indicate that every person in the profession should be constantly studying terms and terminological distinctions if progress is to be made in that direction. 1

All this indicates the need of some clear and careful thinking. Time and experience have shown a few outstanding things rather clearly. The old traditional manual training instruction placed much emphasis upon the manual or physical aspects of the instruction and very little upon the thought content or mental side. This instruction placed emphasis upon training, which in the narrow sense of the word is habit formation, as distinguished from education which may be regarded as habit formation involving reasoning. There was the following of instructions rather than the providing for initiative on the part of the students.

Kansas has not passed from an agrarian civilization to an industrial civilization; but rather has combined the two to such an extent that its education must likewise combine the agriculture and industrial phases. Kansas uses the general shop plan in its small schools for exploratory purposes. In such schools the emphasis is on general repair work. Good courses of a vocational and general nature are elective in the large schools. Agriculture dominates the practical and manual arts work in the rural schools.

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 1 W. E. Warner and Others, "The Terminological Investigation",  
Western Arts Association Bulletin, vol. XVII,  
 No. 2, March 20 1933, p 31

## The Writer's View of Kansas Industrial Arts

It would appear that in too many cases, boys in Industrial Arts education make some toys or pieces of furniture or other projects that are of very doubtful worth and of questionable beauty. Methods are used that have been proven unsatisfactory and have been long discarded by educators. The whole process does not have much meaning to the boy. Instruction is often in unnecessary tasks, that is, tasks that the boy will not do after leaving school. Methods of instruction vary from the formal rigid type as advocated in the Russian or Sloyd systems, to the very loose and free-for-all type. Some shops' set-ups are most carefully planned while in other shops the arrangement of the equipment indicates no plan or orderly arrangement. Some Industrial Arts instructors are doing excellent teaching, others are merely drawing their salaries. Many departments are highly organized, while others lack this essential. Many examples are to be found in the Kansas schools where the Philosophy underlying the work is clearly thought out and understood. There are also examples to be found where mechanical exertion exists instead of the thoughtful. Some schools have clearly drawn and carefully thought out objectives whereas, other schools use the shot gun method believing that some of the pellets will reach the right destination. In other words, the writer sees no one outstanding driving idea in Industrial Arts as it exists within the State. This is no attempt to belittle Industrial Arts, rather it is a desire to show that some consistent thinking is needed.

Industrial Arts should train the mind to observe, analyze,

plan, and execute. Industrial Arts should appeal to, and satisfy certain strong tendencies that are useful in education, such as the constructive and artistic impulses. Industrial Arts should utilize motor impulses and activities as a means for carrying useful information and making possible learning through doing which will help to balance the educational courses. Industrial Arts should function as a means of expression, exploration, and guidance in the elementary and junior grades. Industrial Arts should give information concerning the experience with tools, materials, processes, and designs that have application to every day living.

The modern program of Industrial Arts should be broad. The aim being to teach about many industrial fields, with the idea of youth getting information and experience that will be very helpful at the time, and in later life, rather than developing highly specialized vocational workers.

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 Bureau will OK this copy and send it directly to contesting school.

**EVERY PUPIL SCHOLARSHIP CONTEST**  
 Bureau of Educational Measurements and Standards  
 Kansas State Teachers College, Emporia  
**REPORT SHEET**

**A**

Score	No. of papers having each specific score
165-9	
160-4	
155-9	
150-4	
145-9	
140-4	
135-9	
130-4	
125-9	
120-4	
115-9	
110-4	
105-9	
100-4	
95-9	
90-4	
85-9	
80-4	
75-9	
70-4	
65-9	
60-4	
55-9	
50-4	
45-9	
40-4	
35-9	
30-4	
25-9	
20-4	
15-9	
10-4	
5-9	
0-4	
Total No. of papers	
Median Score	

Name of School .....

Town ..... State .....

Name of Subject .....

Author of Text .....

Is this subject required? .....

Total number of pupils enrolled in subject .....

**Record the scores and names of the three pupils having the highest scores.**

1st place, Score ..... Name .....

2nd place, Score ..... Name .....

3rd place, Score ..... Name .....

**Record the name of one contesting school**

School ..... City ..... State .....

**Important Statements.**

1. The "Report Sheets" must be sent to the Bureau within four days after the test is given.
2. The Blue copy of the Scholarship Contest Report Sheet should be sent to the Bureau.
3. In case you are contesting with another school send **Blue White** and **Pink** copies of Report Sheet.
4. If you have more than one section of a class, throw all the papers together.
5. Record the scores of your test papers in column A according to directions found on the back of the White Record Sheet and on "General Directions."

We certify that the test was given, the papers scored, re-scored, checked and rechecked according to directions. We furthermore certify that the above distribution of scores is an accurate statement of the results. We certify that (if we are contesting with another school in this subject), we are enclosing an exact copy of this report for each school and a copy for the Bureau. We are enclosing the 3 best papers.

Signatures:

Teacher of Subject .....

Supt. or Prin. ....

DATE .....

Bur. OK Stamp

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