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THE HISTORY OF TRADE AND INDUSTRIAL EDUCATION
IN OHIO.
The Ohio State University, Ph.D., 1971
Education, vocational

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THE HISTORY OF TRADE AND INDUSTRIAL EDUCATION IN OHIO

DISSERTATION
Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

By
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The Ohio State University
1971

Approved by
PLEASE NOTE:

Several pages contain colored illustrations. Filmed in the best possible way.

UNIVERSITY MICROFILMS
PREFACE

Difficulties become apparent in the historical compilation of this single categorical concept of education when one considers the multi-faceted educational elements of specialization which are germane to each occupational area. Problems of gathering early vocational trade and industrial research materials have been magnified as a result of incomplete or missing records because of carelessness, deaths and personnel turnover. This writer has been made aware of the fact that authenticated historical documentation is extremely important to all educational areas, if for no other reason than that it creates a solid foundation upon which one may project or build toward the future.

Those of us in vocational education submit that this type of education builds a bridge to a more meaningful future heretofore reserved only for those with professional aspirations. We, in turn, contend that vocational education is an answer to the complex ramifications which have evolved from increased patterns of world-wide technological changes and population growth never experienced by any previous culture.
Vocational educators the world over are aware of the present and future challenges. Therefore, this history of Trade and Industrial Education in the State of Ohio is presented to anyone who may wish to learn of the contributions, both past and present, which the State has made to this most significant educational concept.

Richard E. Johnston
ACKNOWLEDGEMENT

I find that, in order to properly acknowledge all those who have contributed to the compilation of this historical study, another chapter would be generated. However, since this is not feasible, I would be remiss if the following people were not singled out and thanked individually.

Dr. Robert M. Reese, whose knowledge of Trade and Industrial Education in Ohio served as the catalyst for my research - Mr. William Vollmer, O.S.U. Archivist - Miss Sandra Rowe, for her journalistic expertise and Mr. Lloyd Gannegan, whose ability in the field of graphic arts is beyond compare.

And a special thanks to my wife, Ann Marie, whose good humor and understanding nature coupled with her untiring efforts at the typewriter on my behalf has proven to be a comforting reinforcement in the achievement of a mutual desire.
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INTRODUCTION

During the months the author spent gathering historical data for The Ohio State University Centennial, specifically concerned with the evolution of the institution's vocational education program, he realized that an important part of Ohio's history had thus far been neglected. He became extremely interested in the personal papers of Prof. Magruder which he found in The Ohio State University archives. These papers proved to be a veritable treasure trove of explicit information on the early days of the conception of this branch of education. It was noted that during Magruder's lifetime, the entire world underwent the vast changes of the Industrial Revolution. The mechanization of industry, while eliminating many jobs formerly performed by hand, created a dire need for trained personnel in the skilled trade areas. Magruder's personal papers and correspondence more or less outlined the early beginnings of trade and industrial education in the state of Ohio and names many of those involved, as well as dates and cities.

Purpose of Study

The purpose of this thesis is to make available
an adequate and practical history of trade and industrial education in the State of Ohio from the mid-1800's to 1969.

**Need for Study**

The State of Ohio has been a leader in the development of trade and industrial education in the United States. It is paradoxical, therefore, to realize that a comprehensive history of this development does not exist. With the exception of a short overview of the development of vocational education in Ohio presented in "A History of the Ohio Vocational Association" by Roger Roediger in 1961, this birth and growth has not been compiled in a comprehensive single volume. A greater need is mandated by the fact that so many of the vocational educators of the early Smith-Hughes Act era have passed on leaving very few clues as to their contributions to trade and industrial education.

**Scope of Study**

The scope of the study will be primarily concerned with the development of vocational trade and industrial education in the state of Ohio. Topical items, which this writer feels should be of significant importance to those functioning within the realm of vocational education, are as follows:

1. The early and ongoing leadership which has contributed greatly to the promotion of the trade and industrial vocational concept.
2. The evolution and subsequent establishment of vocational schools and trade and industrial teacher education programs.

3. Statistics of program development and growth which have produced guidelines for the future.

Post secondary or technical education's development will only be mentioned if it is correlative in nature to the above. Additionally, the scope of the study, from necessity, will be limited to the contributions of the seven major industrial cities, i.e. Cleveland, Cincinnati, Columbus, Dayton, Toledo, Canton and Akron, in addition to the four state assisted universities - The Ohio State University, University of Cincinnati, University of Toledo and Kent State.

Sources of Data

Data will be compiled from the aforementioned cities and universities along with personal interviews with past and present trade and industrial personnel. Additionally, the Ohio Digest of Annual Reports of the State Board of Education along with a number of Vocational Trade and Industrial yearly reports should statistically document the growth aspect of the study. With the above in mind it is hoped that the reader will share the enthusiasm of others who have fought the battle
for meaningful education in a society fraught with educators foisting upon the masses the image of a college education as paramount to success. It is also hoped that this history will serve as a form of enlightenment for those academicians who have shown little concern for educating those who may have neither the desire nor the ability to achieve at the current inflexible levels of higher education.

Definitions

It would seem prudent at this point to discuss definitions and terminology as they pertain to the contents of this paper. However, it should be pointed out that these definitions and terms are current in nature and are considered acceptable to all factions presently involved—a conditional concept not apparent in the early years.

Vocational Education as defined in Public Law 88-210:

Vocational or technical training or retraining which is given in schools or classes (including field or laboratory work incidental thereto) under public supervision and control or under contract with a state board or local educational agency, and is conducted as part of a program designed to fit individuals for gainful employment as semi-skilled or skilled workers or technicians in recognized occupations (including any program designed to fit individuals for gainful employment in business and office occupations, and any program designed to fit individuals for gainful employment which may be assisted by federal funds under the Vocational Education Act of 1946 and supplementary vocational education Acts, but excluding any program to fit individuals
for employment in occupations which the Commissioner determines, and specifies in regulations, to be generally considered professional or as requiring a baccalaureate or higher degree.) Such term includes vocational guidance and counseling in connection with such training, instruction related to the occupation for which the student is being trained or necessary for him to benefit from such training, the training of persons engaged, as or preparing to become vocational education teachers, teacher-trainers, supervisors, and directors for such training, travel of students and vocational education personnel, and the acquisition and maintenance and repair of instructional supplies, teaching aids and equipment, but does not include the construction or initial equipment of buildings or the acquisition or rental of land.¹

The early use of the term "vocational education" was not the only one used by the advocates of certain occupational courses or cooperative work programs which would prepare the young to enter the work-a-day world. Early definitions had a semantic way of vacillating, dependent upon the person, the place, and the time period.

In order to clarify the term "vocational education," we find that since 1918 it has been described as a form of education that induces and implements the development of occupational skills, which, in turn, are correlated with the individual's attainment of the proper attitudes and adequate knowledge necessary to his vocational aspirations. The proper consideration of the individual's vocational goals can be further projected in terms of

his ability to attain the socio-economic goals that promote good citizenship.

Similarly stated, we can say that vocational education permits the individual to make a personal selection of any occupation, to be properly trained in preparation for entrance, as well as to progress in proportion to his initiative, ability and knowledge. Vocational education, when the concepts of the course are defined, is considered to be any laboratory or related educational process that involves training or retraining for any vocation, but which is not connected with baccalaureate degree program. That is, vocational education is education for any occupation not considered professional.

Today, vocational education embraces many fields of endeavor. Currently, the vocational umbrella covers five major occupational areas:

1. Home Making
2. Agriculture
3. Distribution and Marketing
4. Business and Office
5. Trade and Industrial

Since the latter occupational area has sometimes been confused with the industrial arts educational concept, a committee representing the Industrial Arts and Trade and Industrial Education Divisions of the American
Vocational Association developed the following statement over a three-year period:

**Industrial Education** is a generic term which broadly defines that part of the total educational program which includes instruction in industrial arts education and trade and industrial/technical education.

**Trade and Industrial/Technical Education** is a program of vocational education and training for gainful employment in trades, service, and industrial/technical occupations.

**Industrial Arts** is a program of education relating to the broad study of selected industries.²

In essence our main concern will dwell upon the second statement's reference to "gainful employment."

In this regard, the committee felt the need to delineate the functional criteria of vocational education as it pertains to the following six areas of academic concern in Trade and Industrial/Technical Education:

1. **Curriculum**

The content is determined by an analysis of the various job titles in an occupational field for which training is being given; such as machine industries occupations.

- The curriculum is developed, reviewed and updated with the assistance of management/labor representatives from industry.

- The content is continuously changing and is updated to reflect technological changes in each occupational field.

Instructional materials include recent industrial publications and modern industrial devices and techniques as an integral part of the instructional programs.

The curriculum provides in-depth learning experience and techniques which duplicate those found in industrial/technical employment.

The time schedule, level and amount of instruction must be adequate to develop necessary skills and related technical understanding essential for successful entry into and progress in a trade, service, industrial or technical occupation.

Pre-employment programs are provided immediately preceding employment in order to be most effective.

Programs are designed to meet the full spectrum of needs from the single purpose operatives to the highly skilled trade and industrial/technical craftsman.

Pre-employment education and training is usually provided from grades 9 through 14.

Programs provide open-ended curriculum to permit vertical articulation from secondary to post-secondary levels.

Programs are provided around-the-clock and throughout the year. Such programs include pre-apprentice and apprentice training, retraining, occupational extension, and foremanship, supervisory and management development training.

II. Types of Schools

Instructional programs in trade and industrial/technical education are offered at secondary and post-secondary levels. These are provided in a broad range of institutions including; industrial plants, departments in comprehensive high schools, vocational schools, departments in junior and community colleges, and in programs of less than baccalaureate level in some four-year institutions.
III. Teachers

-The pre-requisite occupational proficiency is developed under actual wage earning situation in a trade, service, industrial or technical occupation.

-High school graduation or the equivalent is required as the minimal education for acceptance into trade and industrial/technical teacher education.

-Potential teachers recruited from industry must possess personal, physical and moral qualities essential for the development of a successful teacher.

-Quality vocational industrial/technical teacher education programs are required. Such programs are planned, directed and supervised by qualified vocational industrial teacher educators.

IV. Instructional Facilities

The plan for instructional shops, laboratories and related instructional classroom facilities are based upon occupational analyses and recommendations of vocational industrial advisory committees. The nature of the instructional plant and the variety of equipment are comparable, where practical to those found in industry.

-Instructional supplies and materials are comparable to those found in industry and are available in sufficient quantity to develop adequate marketable skills.

V. Students

-For youth and adults whose goals is entry into, retraining for, or upgrading in trade, industrial/technical occupations.

-Students are selected in terms of potential employability.

-The minimum entry age into the program is determined by the employability age at the completion of the education and training program.
- Students receive: A high school diploma endorsed in an occupational field upon completion of secondary programs; a certificate or associate degree with occupational endorsement for post-secondary programs; and a certificate of occupational competency for ungraded programs.

- Persons with special occupational needs are served in vocational programs.

VI. Guidance and Counseling

- Organized programs of vocational guidance provide for recruiting, testing and selecting students.

- Vocational counseling services are provided for in-school and out-of-school youth and adults as an integral part of preparatory, retraining or upgrading programs in trade and industrial/technical education.

- Job placement and trainee follow-up are an integral part of the program.3

(See Appendix A for committee's full report.)

With these concepts in mind, we will now proceed to the historical study of trade and industrial education in Ohio.

2"Statement of the Industrial Arts and Trade and Industrial Education Joint Committee of the American Vocational Association."
CHAPTER I
PRELUDE TO AN AWAKENING

Struck postulates the premise that the very earliest industrial education, from necessity, must have been centered around the various methods involved in securing food, providing shelter and making clothing. The qualifications of the instructors would vary depending on their success or expertise in the matter to be taught. Often times the mother or father would serve as an instructor and would teach their offspring their individual, and at times somewhat unique, methods of survival. In many cases the leader in the clan or tribe became instructors of simple but necessary tasks contributing to the groups survival. The teaching and learning of this period involved nothing more than the instructors demonstration which the pupils practiced and copied.

From these early unorganized beginnings we find that some of the basic educational elements evolved to become the format for apprenticeship.

Struck contends that "the main purpose of true apprenticeship is learning".
Apprenticeship without instruction and without learning is like sounding brass and tinkling cymbal— it would be apprenticeship in name only—a passing sound as distinguished from a concrete reality having distinguishable form.4

It is important, at this point, to recognize that the above is basic to the present form of vocational education of which trade and industrial education is an integral part.

According to Douglas, apprenticeship training can be traced to the ancient civilizations of Egypt, Babylon and Greece dating back to approximately 4000 B.C.5

The historians would have us think of the years between 4000 B.C. to 500 A.D. ancient history and the years of 500 A.D. to 1500 A.D. the Middle Ages. Within this latter period we can consider 500 A.D. to 1000 A.D. as the Dark Ages. (Refer to Table 1.) Struck makes known that, because very little information about apprenticeship has been brought to light during the reign of the Caesars of the Roman Empire, a point of controversy has risen with some writers maintaining apprenticeships had their beginnings in the Middle Ages. He argues this is not true and states that there is a


5Ibid., p. 3.
TABLE 1
MILESTONES OF RACE PROGRESS*

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<td>4000 B.C.</td>
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<td>Medieval Times</td>
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<td>1500 A.D.</td>
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<tr>
<td>The Renaissance</td>
<td>The Age of Feudalism or the typical Middle Age</td>
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<tr>
<td>The Dark Ages</td>
<td>The Fall of Rome</td>
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<td>The Birth of Christ</td>
<td>The Germanic Invasion</td>
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<tr>
<td>Approximate Date of Earliest Written Records</td>
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definite delineation between the Ancient apprenticeships and apprenticeship of the Medieval Period. He is of the opinion that the apprenticeship of the Roman days was the forerunner of that of the Middle Ages. Additionally, he breaks the Middle Ages into three distinct epochs: (1) the Period of Transition, (2) the Age of Feudalism, and (3) the Renaissance.

The Period of Transition was one of integration of the invading German Barbarics and the older civilizations. This took place shortly after the fall of the Roman Empire, in approximately 476 A.D., and lasted until 800 A.D. This period is normally referred to as the Dark Ages.

The Age of Feudalism occurred during the years of 800 to 1300 A.D. and is often referred to by historians...
as "The Typical Middle Ages". The Guilds were initiated and developed under the political pressures of the feudal lords and the Church. Medieval apprenticeships were the direct outgrowth of the Guild Activity of this period.

The third epoch, the Renaissance, did not develop and flourish at the same rate or level in Italy, France, England and Germany. This period of "re-birth" occurred between the years 1300 and approximately 1500. This period was concerned with the liberation of the people in that learning experienced great strides along with the much needed revival of art and literature. It was a period of social change that inadvertently resulted in the construction of the world's finest cathedrals.

The Guilds

The Guilds, from inception and throughout the latter phases of the Middle Ages, were traditionally made up of fraternities, societies or companies organized for several specific purposes. In general, Merchant Guilds were formed to regulate and govern trade and to create local associations to further their mutual welfare. The Guilds were one answer to the merchants from the Far East who would flood the European markets with their wares unless some measure of control was exercised.

The early Guilds were comprised solely of merchants, since in many cases craftsmen functioned as both producers and merchants.
Guilds, varying in degree of strength and stability, were believed to have existed as early as the Eighth Century in some isolated European areas. England, however, did not embrace the concept until the Ninth Century, when, no doubt, their potential political powers were recognized. By the Fourteenth Century the Craft Guilds were well established in both England and Germany, the latter, however, did not institute the concept until the Thirteenth Century.

The Guilds of this era were foremost and primarily concerned with the promotion of quality in work. Masters were compelled to teach the whole trade to apprentices—poor workmanship was not to be tolerated in any form.

During the later Middle Ages, apprenticeship education became the difference between slavery and feudal bondage and was considered a vehicle for becoming a craftsman, subsequently a property holder and, eventually, a free man.

The Decline of the Guilds

Guilds, began to falter for various reasons, many of which resulted from over-refinement of the whole idea. Mandates that were both tedious and dictatorial in nature were forced upon the membership, thus smothering creativeness and ultimately strangling free enterprise. In short, they wanted to control the product, the
material, the manufacturer and the employees of the various companies making the product. Considering refinement, the Guild concept may be seen as the forerunner to our unions and manufacturing and business associations. In reference to the employee, we find he was restricted to certain jobs or occupations. He was not allowed to switch jobs or companies without permission from the Guilds. Apprentices' selections and placements were made in strict adherence to the wishes of the Guilds.

Other factors contributed to the demise of the Guilds: new inventions which found many manufacturers, from necessity circumventing Guild rules and regulations, and the increase of affluence, specialization and social needs which served to indicate that the informal influence and closeness of a father-son or master-apprentice relationship was outmoded, etc. Master craftsmen now were to teach many apprentices. Guilds confronted each other over trade rights and privileges. All these things contrived to toll the death knell of the Guilds.

The Statute of Artificers

The Statutes of Artificers or the old Statutes of Laborers, which were sound in theory had been functioning ineffectively for more than two centuries, were resurrected by Queen Elizabeth in 1563. By this time the Guilds

had lost much of their influence. This new legislation was viewed with mixed emotions by the Guild members. It took away all individual and local Guild control in regarding hours of work, length of contract period, working conditions and conditions under which the contract could be modified. More importantly, it established some much-needed apprenticeship rules and guidelines. In order for a young man to become a craftsman, he must serve no less than seven years as an apprentice in the specific trade or occupation.

The new statute was an attempt to organize and upgrade the practices of the delinquent and negligent Guilds to conform to the existing regulations of the London Guilds.

The attempt to make the Guilds all conform to legislation edict was considered a failure. It was found that the Guilds, no matter how disorganized or inept, were meeting the needs of their membership in rendering valuable social, moral, fraternal and educational services. The accommodation of these needs and services was not to be duplicated by the national government of England.

At about this time, England found herself in a predicament. There was an over-abundance of needy, poor, unemployed and underemployed people, and at the same time, political enemies were beginning to over-crowd the prisons.
The solution to these economic and political problems was provided by a sudden thrust toward colonization of America. To facilitate immediate colonization people were shipped to America for the slightest cause without provocation or legal pretext. To further implement the colonization process, special legislation was passed concerning indentured apprenticeships that were akin to slavery in the New World. England, during the early 1600's, used America as a dumping ground for the aged and infirm, orphaned young, beggars, convicts, the politically unsavory and religious resurrectionists.

The pilgrimage to America and the subsequent settlement along the eastern seaboard are a matter of history.

The Awakening

In the early chronicals of the city of Jamestown, Virginia, we find that five years after their migration to this new land, the settlers were somewhat concerned because their settlement's boat builders and pitchmen were reaching a critical age and that no one had been or was being trained to assume their roles. This neglect becomes paramount when one considers the crudeness of colonial existence and the relevant importance of the boat as a means of escape, transportation and gathering fish from the ocean to supplement their diet.7

7Congressman Roman Puccinski, Speech presented at the American Vocational Association Convention in Boston, Massachusetts, December, 1969.
Roberts tells us that in 1641, the General Court of the Colony of New Plymouth passed a law which adapted the English Poor Law of 1601 to the needs of the colony. The law allowed the town's selectmen to apprentice children of poor families to those more fortunate. This arrangement was beneficial to the child for, in return for work, he received maintenance and an education of sorts.

The Massachusetts Bay Colony passed a law in 1642 that called for the establishment of comprehensive apprenticeship programs. The apprentices' masters not only instructed them in a trade or a calling but also to read and understand the principles of religion. This reflected the Puritan belief that labor or industry was a virtue.

In 1650, 1665 and 1671, in the Connecticut, New York and New Plymouth colonies respectively similar laws were passed and separate apprentice schools were established where the poor children could be when the parents or the masters were not qualified to teach.

A law requiring that apprentices be registered and serve a term of not less than four years was first enacted by the Common Council of New York City in 1694. In 1711 the minimum length of the apprenticeship was

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raised to seven years.\textsuperscript{9}

Industry and new industrial processes were slow in reaching the New World. America's contributions of new inventions and scientific discoveries were few and scattered during the period between 1600 and 1750. Only the tried and acceptable methods of the mother country were practiced. There was neither the time nor the inclination to form a group similar to the Royal Society of London organized in 1648 at Oxford, from which unity between the study of the sciences and the manual arts concept ultimately evolved. Thomas Sprat, the Society's first historian writes:

\begin{quote}
I will venture to propose to the consideration of wise men, whether this way of Teaching by Practise and Experiments, would not at least be as beneficial as the other by Universal Rules? Whether it were not as profitable to apply the eyes, and the hands of Children, to see, and to touch all the several kinds of sensible things, as to oblige them to learn and remember the difficult Doctrines of general Arts? In a word, whether a Mechanical Education would not excel the Methodical?\textsuperscript{10}
\end{quote}

John Locke, another member of this Society, advocated that: "Education should fit a boy for practical life," whether it be in trade or a profession. In 1697, as a Commissioner of Trade and Plantations, he advocated a system of "working schools" for all the pauper children

\textsuperscript{9}Ibid., p. 56.

between three and fourteen years of age.11

As early as 1685, Thomas Budd, an American Quaker, proposed a very progressive scheme of public education for Pennsylvania and New Jersey. His so-called "scheme" was to make education mandatory for all children alike whether they be rich, poor or Indian. One of the elements of his educational concept was the teaching of "Art, Mystery or Trade that he or she most delighteth in."12

He described his proposed system in "a small treatise" entitled Good Order Established in Pennsylvania and New Jersey in America. His proposal, when outlined, takes into consideration the following concerns which were, no doubt, revolutionary for that time:

1. Now it might be well if a Law were made by the Governours and General Assemblies of Pennsylvania and New Jersey, that all Persons inhabiting in the said Provinces do put their Children seven years to the publick School, or longer, if the Parents please.

2. That Schools be provided in all Towns and Cities, and Persons of known honesty, skill, and understanding, be yearly chosen by the Governour and General Assembly, to teach and instruct Boys and Girls in all the most useful Arts and Sciences that they in their youthful capacities may be capable to understand, as the learning to Read and Write true English, Latine, and other useful Speeches and Languages, and fair Writing, Arithmatick, and Bookkeeping; and the Boys to be taught and instructed in some Mystery or Trade, as the making of

11Ibid., p. 61.
12Ibid., p. 62.
Mathematical Instruments, Joynery, Turnery, the making of Clocks and Watches, Weaving, Shoemaking, or any other useful Trade or Mystery that the School is capable of teaching, and the Girls to be taught and instructed in Spinning of Flax and Wool, and Knitting of Gloves and Stockings, Sewing, and making of all sorts of useful Needle-Work, and the making of Straw-Work, as Hats, Baskets, etc., or any other useful Art or Mystery that the School is capable of teaching.

3. That the Scholars be kept in the Morning two hours at Reading, writing, Book-keeping, etc., and the other two hours at work in that Art, Mystery or Trade that he or she most delighteth in; and then let them have two hours to dine and for Recreation, and in the afternoon two hours at Reading, Writing, etc., and the other two hours at work at their several Employments.

4. The seventh day of the Week the Scholars may come to school only in the fore-noon, and at a certain hour in the afternoon let a Meeting be kept by the Schoolmasters and their Scholars, where after good instruction and admonition is given by the Masters to the Scholars, and thanks returned to the Lord for his Mercies and Blessings that are daily received from him, then let a strict examination be made by the Masters of the Conversation of the Scholars in the week past, and let reproof, admonition, and correction be given to the Offenders, according to the quantity and quality of their faults.

5. Let the like Meetings be kept by the School-Mistresses, and the Girls apart from the Boys. By strictly observing this Good Order, our Children will be hindred of running into that Excess of Riot and Wickedness that youth is incident to, and they will be a comfort to their tender parents.

6. Let one thousand Acres of Land be given and laid out in a good place, to every publick School that shall be set up, and the Rent or income of it go towards the defraying of the charge of the School.

7. And to the end that the Children of poor People and the Children of Indians may have the like good Learning with the Children of Rich People, let them be maintained free of charge to their Parents,
out of the Profits of the school, arising by the Work of the Scholars by which the Poor and the Indians as well as the Rich, will have their Children taught, and the Remainder of the Profits, if any be, to be disposed of to the building of School-houses, and Improvements on the thousand Acres of Land, which belongs to the School.13

By today's standards, we can appreciate Budd's ideas for many of his educational concepts are still being utilized.

There is no evidence indicating that there was an attempt to put these theories into practice, however the publication of his "treatise" could very well have influenced the public demand for free public schools.

By the late 1600's, all of the New England Colonies, with the exception of Rhode Island, had passed compulsory education laws similar to the famous Massachusetts laws of 1642 and 1647.14 Compulsory education had been established, however, compulsory attendance by all school age children was yet to come. Only in later years, after discarding the English concept of education being a private matter, did the New England towns begin to contribute to the support of schools per-se.

Throughout the Sixteenth and Seventeenth Centuries, many educators and prominent people gave "lip-service"

13 Ibid., p. 63.
to the concept of manual arts as an important form of education, yet, the only result was the incorporation of drawing courses into the curriculum.

The talking and theorizing of this period produced some rather important but latent results during the latter part of the Eighteenth Century. In this respect, we should be aware of the contributions of those who were to shape the thoughts of the educators of the future.

Struck\(^{15}\) tells us that, prior to its introduction into the United States, the theory of thought and practices was influenced by Comenius, Rousseau, Pestalozzi and Froebel. Let us, for the sake of this study, consider the contributions of Comenius and Pestalozzi as prime examples of the early and latter theorists.

John Amos Comenius (or Komasky) (1592-1670) was considered the most famous educational writer of the Seventeenth Century. He, like Rebelais, believed that instruction in words and things should go together—words were learned faster when associated with things—children learn more from nature than they do from books—subjects should be suited to the limits of the student and to the order of nature. He perceived the order of nature to be the education of: (1) the senses, (2) the memory, (3) the intellect, and (4) the critical faculty.

\(^{15}\)Struck, op. cit., p. 23.
"The child perceives through the senses; everything in the intellect must come through the senses". He further believed that the process of learning should be agreeable to the learner.\textsuperscript{16}

In "The Method of the Arts", a chapter in his book, \textit{The Great Didactic}, Comenius postulates some theories and basic truths and submits that to find their solution, eleven canons must be observed - six on the use of materials, three on guidance and two on practice. The following points reflect his theory and beliefs.

1. "Theory" says Vives is easy and short, but has no result other than the gratification that it affords. Practice on the other hand, is difficult and prolix, but is of some more utility."

Comenius contends that if this is true, we should seek ways and means to easily lead the young to the application of natural forces which is to be found in the arts.

2. Art is primarily concerned with three things. (a) A model or conception that the artist may try to imitate or duplicate. (b) The conceptual material with which he is to work. (c) The tools or instruments to be used as aids in accomplishing the work.

3. After these three concerns have been taken into

\textsuperscript{16}Charles Alpheus Bennett, \textit{op. cit.}, pp. 36-37.
consideration, three more things are necessary before we can learn an art: (a) a proper use of materials; (b) skilled guidance; (c) frequent practice. These latter items become extremely important to the total concept of art when the final product (i.e. the criteria) denotes a lack of knowledge and practical skill. In this respect, the pupil should be taught when and how to use materials. Proper guidance along with appropriate demonstrations are necessary to prevent mistakes; the correction of mistakes and the subsequent correct responses to eliminating these mistakes are necessary before proceeding further. Work must be done correctly and quickly.

In speaking of these points, he maintains that the following Canons can be applied.

1. What has to be done must be learned by practice.
2. A definite model of that which has to be made must always be provided.
3. The use of instruments should be shown in practice and not by words; that is to say, by example rather than by precept.
4. Practice should commence with the rudiments and not with ambitions works.
5. Beginners should at first practice on a material that is familiar to them.
6. At first the prescribed form should be imitated with exactness. Later on more freedom may be allowed.

7. The models of the objects that have to be produced must be as perfect as is possible, so that if anyone exercise himself sufficiently in imitating them it will be possible for him to become perfect in his art.

8. The first attempt at imitation should be as accurate as possible, that not the smallest deviation from the model be made.

9. Errors must be corrected by the master on the spot; but precepts, that is to say rules, and the exceptions to the rules, must be given at the same time.

10. The perfect teaching of art is based on synthesis and analysis.

11. These exercises must be continued until artistic production becomes second nature.
   For it is practice, and nothing else, that produces an artist.\(^\text{17}\)

John Henry Pestalozzi, (1746-1827), sometimes referred to as Johann Heinrich, has been called the "father or manual training." He put theory into practice when he tried his educational concepts on his own son.

\(^{17}\text{Ibid.}, \text{pp. 65-68.}\)
These concepts were correlated to the cultivation of the family farm, and, through these thoughtful educational experiments, he derived new ideas and new principles of education. The discovery of these new concepts gave him hope that he would be able to fulfill a lifelong philanthropic desire to administer to the educational needs of the poor children. He maintained that if a child could be protected from fatigue—"it would be possible not only to teach children to earn their bread but to cultivate their intellectual and moral nature at the same time." He believed that he could, through the teaching of farming methods and handicrafts and with personal guidance in other educational areas, produce socially acceptable people from the flotsam of a struggling society.

In 1774, he put his theories into practice when he gathered about him twenty poor children from the neighboring villages. He did not attempt to hold classes in reading and writing, maintaining that reading and writing were only for those who had learned to talk well. Therefore, he gave them constant practice in conversation along with Bible passages that they ultimately learned by heart.

Educationally, his experiment was a complete success and became the talk of the continent. However, his financial return from the farm itself dwindled, for the work done by the children was by no means sufficient
to properly cultivate the land.

Pestalozzi was to experience many subsequent success and failures in his lifetime, the failures often due to mismanagement and internal difficulties. He directed his work toward education for all children, poor or rich, and toward development of new educational methods. He states that: "There are two ways of instructing—either we go from words to things or from things to words. Mine is the latter method." This method is to be later identified as the "psychological method" by educators who considered it revolutionary to the traditional methods practiced at that time.¹⁸ He was concerned about the foundations of human knowledge being firmly laid before the student began the dull, abstract work of study from books.¹⁹

The Pestalozzian concepts of education had a far flung influence on educators the world over. In 1805, William Maclure, a wealthy retired merchant from Philadelphia, after spending the previous seven summers in Europe looking over various schools, decided Pestalozzi's educational approach was the most democratic in nature.

He tried to secure his services in setting up a school in Philadelphia. Pestalozzi refused his offer, therefore the first "Pestalozzian school" in America was opened under the direction of John Neef, Pestalozzi's

¹⁸Roy W. Roberts, op. cit., p. 96.

¹⁹Charles Alpheus Bennett, op. cit., p. 119.
assistant, in 1809.

It is the opinion of this writer that from the early caveman beginnings to the present time, the work, concepts and teachings of Pestalozzi bridged the chasm between the old world and the new, thus setting the stage for a new form of education to meet the needs of the industrial revolution that was being throttled by unrealistic educational concepts.
CHAPTER II
TRADE AND INDUSTRIAL EDUCATION IN THE
UNITED STATES 1800-1917
The Manual Labor Movement

Early Industrial Period

The history of trade and industrial education is one of evolution and adaptation to meet the changing needs of society and of the common man.

When the colonists first turned to this need, they borrowed heavily from their native countries and the apprenticeship and legal indenture systems. These old world methods of transmitting technical and socially useful knowledge were modified to meet the unique conditions of establishing a new land, and they quickly became the fundamental social, economic and educational systems of early American life.20

With the operation of Slatter's cotton mill in 1794, American industry moved out of the home and its emphasis on craftsmanship into the factory and its new

methods of subdividing labor. Skilled apprentices were replaced by labor-saving machinery and child laborers, and industrial education was neglected.

In an attempt to fill the gap left by the decline of the apprenticeship system during this period, a number of private schools were founded to salvage some of the earlier program's educational ideals. Many of these schools, such as the Boston Asylum and Farm School which was established in 1814, were charity institutions providing grammar school education and vocational training for homeless boys.

Mechanics' Institutes

In the late Eighteenth Century, groups representing a variety of trades working for a number of goals including the resurrection of apprentice-type educational values, mechanics institutes, were organized on a large scale in England.

The practical popularity of such institutes spread to America, and, on November 17, 1785, The General Society of Mechanics and Tradesmen was established in New York. The attention of the representatives of the thirty trades gradually shifted from charity to education. By 1821, a committee had been appointed to survey the educational

needs of the members' children and look into the possibility of renting a school and hiring a teacher. At the same time, other members were concerned with the establishment of a library and evening classes for apprentices.22

While the group was still active well into the Twentieth Century in providing university and trade school scholarships, by 1858, the development of New York's free public schools had reached a point where the group's attention could be focused entirely on its evening educational program.23

Although the institutes differed according to their locality, they all shared the same goal—the practical, scientific education of young men to better prepare them to enter and to contribute to industrial life.

The Lyceum

The Franklin Institute,24 The Maryland Institute for Promotion of Mechanical Arts,25 The Ohio Mechanics' Institute,26 The Pennsylvania Institute for the Education of Colored Youth.27


Institute of Cincinnati, 26 and similar groups were mainly concerned with socially-oriented vocational education. By the early 1800's, a more broadly-based program designed to meet the vocational, educational and cultural needs of mechanics, farmers and artists was gaining popularity.

The Gardiner Plan, so named in honor of the Maine landowner who established the first lyceum in 1823, attempted to broaden the educational base by combining the best aspects of manual labor schools, with their emphasis on technical skills and scientific farming, with certain aspects of traditional liberal education. While Gardiner's school was a practical approach to solving a very real problem of providing meaningful education, lack of funds forced it to close after a short time.

The American Lyceum of Science and Arts, founded by Josiah Holbrook in Massachusetts in 1826, 28 was based in part on Gardiner's idea, but Holbrook was thinking on a much larger scale. He envisioned town lyceums joined at the county and state levels ultimately evolving into The American Lyceum—a national federation.


27 Charles Alpheus Bennett, op. cit., p. 350.

28 Ibid., pp. 326-327.

Perhaps, if the lyceums could have retained their original purpose, this could have been accomplished, but the system degenerated into a series of public lectures and general entertainment and the goals and energies that had prompted their organization were lost.30

Schools of the Manual Labor Movement

In 1806, Philip Emanuel Von Fellenberg began working with a new concept of education in Switzerland. In his schools, academic study was combined with work in area shops and factories.

Visitors from the United States quickly saw in this system the revival of the belief in the educational value of manual labor and, since the school was paid for the services of the students in the shops, the possibility of making education self-supporting.31

In 1831, the Society for Promoting Manual Labor in Literary Institutions was founded in the United States to mobilize nationwide support for the introduction of manual "exercise" and the constructive use of free time in the seminaries. Theodore Weld, the Society's first General Agent, worked hard to make labor and the laborer respected and to develop among the workers a feeling of


brotherhood.

Perhaps one of the best examples of this phase of vocational education is the Rensselaer Institute founded in Troy, New York in 1824. Stephan Van Rensselaer, the founder, very aptly summarized the goal of the manual labor education movement as "...the application of science to the common purpose of life."32

The manual labor school system was evaluated by the Pennsylvania House of Representatives' Education Committee in 1832. The members reported that in schools where it had been introduced there had been a fifty percent decrease in the cost of education and its adoption had helped to reduce class distinction between the rich and the poor. While the average three hours of physical labor did not distract from the classical study program, it did increase physical health and lead to the total development of better citizens.33

The Morrill Act, July 2, 1862

Jonathan Baldwin Turner, a relatively new champion of industrial studies in the mid-1800's, believed society was essentially made up of two classes, the professional and the industrial. By this time, the number

of manual labor schools had increased significantly and the national information campaigns conducted by such groups as Weld's Society had been moderately successful.

Turner wanted to broaden the system by seeking state and federal assistance. He proposed the establishment of industrial universities in each state supported by federal aid obtained through the sale of public lands.34 In 1853, the Illinois Legislature passed a similar resolution and sent copies of it to all the states with an urgent request that Congressmen support the measure at the federal level. The following year, the proposal was read in Congress, but no action was taken.35

Four years later, Rep. Justin S. Morrill of Vermont introduced the bill again. This time it was passed by Congress, but President Buchanan refused to sign it and, again, it died.

In 1861, there was a new administration and Morrill again proposed the "land grant college" bill. This time, after bitter Congressional debate, the bill went to President Lincoln, and, on July 2, 1862, the Morrill Act, representing the first major federal involvement in


vocational education, was signed into law. 36

This act provided that each state would be given 30,000 acres of land for each Senator and Representative then in Congress. If any state didn't have enough land, it would be issued script on unapportioned U.S. lands in the territories. The land would be sold and the money invested in "safe" stocks in order to build up a perpetual fund. Since the capital had to be kept intact, if for any reason funds were lost, the individual states were responsible for replacing them. The interest would be used to endow and support a college designed to promote practical education of the industrial classes in agriculture and mechanic arts.

Each state legislature had to formally approve the measure within two years of its signing, and, if any state didn't establish one such college within five years of the act's passage, its grants would be revoked.

The Confederate States were, at the time of the law's passage, engaged in active rebellion against the U.S. government, and, therefore, were excluded from the benefits of the act by a special clause. They were brought under the program at the end of the Civil War.

The Manual Training Movement

By 1870, many public schools had established courses in industrial drawing, but until 1876, no one had succeeded in developing a practical method for teaching tool skills in the schools. In that year, Victor Della Vos, the Director of the Imperial Technical School in Moscow, had a display of his exercises in wood and metal at the Centennial Exposition in Philadelphia.\(^{37}\)

He had separated distinct types of work into different shops and each student had a set of tools made from his own drawings. While such a teaching method required increased individual instruction by skilled craftsmen, educators such as John D. Runkle, President of M.I.T., were quick to recognize the potential importance of the Russian method for public education, and, the following year, such a program was established at M.I.T.\(^{38}\)

Calvin M. Woodward

Unaware of the progress being made in this field in Russia, Calvin M. Woodward, Dean of the Polytechnic School of St. Louis, established a program aimed at the combination of study with the use of tools. As early as 1872, he was carrying out exercises in wood and metal


\(^{38}\)Ibid., pp. 17-18.
which required some skill in the use of tools. Rather than training mechanics as the manual labor schools did, Woodward chose to emphasize the moral, intellectual and physical aspects of total education. Tool instruction was a secondary benefit provided as the student engaged in building models to illustrate basic scientific principles.

In 1879, Woodward guided by his earlier experience, the Della Vos exhibit and the encouragement of men such as Dr. Runkle of M.I.T., became director of a new school-The Manual Training School. While students were expected to divide their time between mental and physical labor on a nearly equal basis, Woodward was quick to point out the school was not manual labor, trade or industrial in nature. He merely added to the old system of education a new method of developing concepts and ideas which, in a very direct way, made students better prepared for life.

**Educational Sloyd**

Meanwhile, in Scandinavia, another concept, the educational sloyd, was gaining importance as an educational

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force. Originally designed as a means of providing a sound basis for the development of home industry, the sloyd became a major program for the training of experienced artisans as teachers.

Aimed chiefly at developing manual dexterity in progressively difficult courses, the sloyd also helped to instill in the teacher and student alike a respect and love of honest work by developing independence, self-reliance and a pride in precision.

In 1888, Gustaf Larsson, a Boston teacher, introduced such a program to public schools in his area. By teaching artisans to lay a proper foundation for instruction while at the same time providing them with an awareness of educational tact which would make them good teachers as well as craftsmen, the program filled the "gap" in vocational education of the period, and the popularity of the sloyd steadily increased throughout the last years of the Nineteenth Century.

The Trade School Movement

Rudiments of the trade school movement can be seen in the evening courses offered to apprentices by the mechanics' institutes and similar groups, but such textbook approaches to the problem of providing instruction in the various trades was not enough.

While the idea of learning trades in the trade environments still persisted, the master craftsmen were
often not ready to assume the roles of teachers. The trade schools--public, private and corporation-owned--were a practical approach to solving this problem.

Aside from the corporation-owned trade schools which adapted the old apprenticeship program to meet their own specific needs, the schools established during this period followed one of the three general methods of organization:

1. providing specific trade training directly related to a specific trade,

2. combining trade education with general education subjects, and

3. providing manual training for all students, some general education and specific intensive training in a given trade.

The Hampton Normal and Industrial Institute

Organized in 1868 by General Samuel Chapman Armstrong, this school, which combined trade instruction with a general liberal education, became one of the pioneering institutions for the education of the Negro.

Armstrong was quick to recognize the crucial role education must play in reconstruction and in the adaptation of the former slave to the free economy in particular. On land provided by the American Missionary Society, he founded the Hampton Normal and Industrial Institute to help the Negro improve his character, his social status
and his economic situation. As testimony to the soundness of this approach to trade training, one can cite one of the school's most noted graduates, Booker T. Washington.

The New York Trade School

One of the best examples of the second method of trade school organization is the New York Trade School. Having carefully studied labor problems, Col. Richard Tylden Auchmuty recognized the need to provide training not only at the pre-employment level, but also for the already employed workers.

Supported by such men as J. P. Morgan, Auchmuty established his school in 1881 in order to provide specific trade instruction and supplemental programs of study directly related to the trades.

By 1892, the tuition school was recognized by the New York Commissioner of Labor for the variety of trades that were taught and for the high standards and technical experience demanded of the instructors.\(^42\)

The school has continued operation right into the Twentieth Century—a fitting testimony to Auchmuty's analysis of the needs of trade education and to his foresight.


The Hebrew Technical Institute

The end of the Nineteenth Century saw a significant increase in the number of Jewish people immigrating to America, and this presented a major problem to Jewish charitable organizations. In an effort to ensure the economic independence of the newly arrived Jews, they turned to education as the "...best and most practical way to help the poorer classes of Hebrews...(to) place them in a position to support themselves."^44

In 1883, the Hebrew Technical Institute was founded in New York with this goal in mind. Any young boy over twelve and a half years old who was Jewish and a resident of New York could attend if he could produce the required letters of recommendation. Once attending the school, he would learn a variety of subjects of general interest and also a trade.

The Williamson Free School of Mechanical Trades

Isaiah V. Williamson, a noted Philadelphia philanthropist of the late Nineteenth Century, had a firm belief in the virtues of the apprenticeship system. In fact, he regarded the abandonment of the system a threat to society since it's demise promoted idleness, vice and


^44Ibid., pp. 81-82.
crime. After 30 years of planning, Williamson established the Free School of Mechanical Trades in Philadelphia in 1891. Young boys between the ages of 16 and 18 were indentured to the school trustees for three years, and during that time, they were given preliminary courses and then taught a specific trade selected by the trustees. During the training period, the students lived at the school at no cost, and the domestic life of the school was rigidly based on Williamson's principles of good family government.

Since the manual training movement was just then reaching national popularity, Williamson also provided each student with some form of manual work preliminary to his trade instruction. Thus all students received manual training, general education and specific training in a trade.

Trade Schools Founded by Industrial Organizations

During this time, the relative merits of apprenticeship and trade schools continued to be widely discussed. While apprenticeship alone could not compete with the trade schools in producing "completely educated" workers, a carefully thoughtout apprenticeship program

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46 Idem.
47 H. Ross Smith, op. cit., p. 22.
together with some academic study directly related to the trades seemed to hold promise in solving this social problem. As in the case of the Ludlow Manufacturing Company in Massachusetts, many employers found the educational needs of their employees were a major production "stumbling block." In a survey conducted in its textile mill, the Ludlow firm discovered that in a span of over 40 years, none of its overseers or second workers had attended the village schools. The employers were faced with a problem—they must "depend upon men trained abroad or else give growing boys in the village an education which would fit them for responsible positions in their mills."\textsuperscript{48}

The specifics of each company's program varied as the following examples will illustrate, but in every case, the employers were faced with a problem which somehow hindered their production and they set about to solve it in the most practical manner they could devise.

The R. Hoe Company in New York was faced with a need for new types of machinery in 1872, and to provide themselves with the skilled workers needed to operate and construct the new machinery, they established a trade school which was free to all employees. While attendance was not mandatory, graduates who had taken the courses in English, mechanical drawing, arithmetic, geometry and

algebra were often considered more capable of handling the work, and they were promoted faster.

The General Electric Company in Lynn, Massachusetts developed a slightly different program in its trade school. In a system combining industrial study and apprenticeship which was widely copied during the early Twentieth Century, employees were given courses designed to develop in them a better understanding of machines and mechanics. Among the most noted courses were those in interpretation of mechanical drawings and the design and production of auxiliary tools which were coming into use in modern manufacturing.

One of the most elaborate and all-inclusive programs of trade school education was established by the Baldwin Locomotive Works in Philadelphia in 1901. Realizing full well the role elementary education played in preparing young men for apprenticeship, the Baldwin executives set up a trade school program designed to meet the needs of three basic classes of employees.50

Young men under 16 were enrolled in a three year program, and three nights a week they studied arithmetic, mechanical drawing, shop practice, etc. Those over 18 who had completed more advanced educational programs were

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49Ibid., p. 32.
50Ibid., pp. 61-63.
given instruction in chemistry, advanced mathematics and mechanical drawing two nights a week during a two year program. The employees who had graduated from colleges and other institutions were engaged in reading technical journals rather than attending formal classes, and they had to report on various articles.

All of these various types of corporation-sponsored trade schools achieved some measure of success, and their example was a major contribution to later industrial education.

The Vocational Education Movement

At the turn of the century, vocational education was beginning to gather momentum. Spasmodic skill training programs were beginning to crop up in various parts of the nation with increased rapidity and with repeatedly successful operations.

The Douglas Commission

As early as the late 1800's, advocates of vocational education were beginning to assert pressure at the national and local levels of education and government. We can assume that they were concerned with such questions as: Of what value is a strictly general or liberal arts education to the student who, after completing high school, indicates no desire to go on to higher learning and is yet still too ill-equipped in knowledge and skills to enter the world of work? What provisions have you incorporated
into your curriculum for the student who makes an early entrance into the labor force after deciding to quit school because of the boredom of academic regimentation? Since industry and business contribute to the bulk of the taxes for education, why must we assume the responsibility of training or educating employees in industrial and business acumen?

To these early advocates of vocational education, the educational practices of the period must have seemed like the historical Boston Tea Party episode wherein taxes were paid on taxes. The vocational parable ran something like this: Money is spent on taxes for education and additional money is spent to train or re-educate people in order to reap any benefits from their education. From all indications, it would seem that many groups of businessmen and industrialists had become disenchanted with educational policies and were beginning to rebel.

One such group, represented by the Douglas Commission appointed to survey Massachusetts practical arts and manual training programs in 1906, clearly pointed up the failure of the public schools to disseminate meaningful education to the American youth.

The nine members, appointed by Gov. William L. Douglas and representing manufacturing, labor, agricultural and educational interests, held a series of twenty public hearings and came to some far-reaching conclusions
based on the testimony of a variety of witnesses.

They deplored the cultural emphasis in manual training and recommended more practical courses in vocational education to meet the nation's needs. (At this time, as usual, education was remiss in not taking the leadership role of an innovator—it tagged along, implementing, to a degree, the demands of an incensed nation of business and industrial leaders.)

The Commission also urged passage of a state bill designed to make vocational education an integral part of the Massachusetts school system beginning on the elementary level. The resulting educational system served well as a model which was critically appraised by educators throughout the country. The act also established the second Douglas Commission which met in 1908.

This second Commission was of major importance in providing groups with differing positions a common middle ground from which direct action could be taken. While manufacturers and laborers both generally favored the idea of the trade schools, they differed as to who should exercise control over them. The trade unionists, meanwhile, fearful of an over-supplied labor market which would drive wages down, were against the establishment of other trade schools. Through the action of the Douglas Commission, their differences were partially resolved and meaningful action was taken.
The National Society for the Promotion of Industrial Education

With concern in vocational education growing at the turn of the century, James P. Haney, the director of manual training in New York schools, and Charles R. Richards of Columbia's Teachers' College called a meeting of thirteen men in New York in 1906. At this meeting, this active nucleus began formulating plans that resulted in the establishment of the National Society for the Promotion of Industrial Education later that year.

Through information and propaganda campaigns, this group, under the presidency of Henry S. Pritchett of the Carnegie Foundation, worked to focus public attention on the value of devising an educational system geared to the preparation of children for entrance into the industrial world.

In order to have any impact, the organizers recognized the need for uniting all of the various groups who were working toward this goal. In their early years, they concentrated their efforts on publicity and the organization of state branches which could serve as the basis for carrying out their programs. (The Ohio branch, under the direction of W. T. Magruder, was a driving force in the Society's early formation and growth, as will be discussed later.)

By 1917, the organization had already been part-
ially successful in achieving one of its major goals—federal aid for vocational education in such laws as the National Education Law, the Adams Act and the Smith-Hughes Act. In that year, the Society changed its name to the National Society for Vocational Education.

At approximately the same time, we are made aware of the fact that a similar organization had been formed in the middle states—The Vocational Art and Industrial Federation. This group also changed its name upon passage of the Smith-Hughes Act to become the Vocational Education Association of the Middle West. While this group had been holding joint conventions with the Society for Vocational Education since 1921, it wasn’t until 1925 that they formally joined forces to become the American Vocational Association, which is today one of the most powerful of all educational legislative lobbying groups.

The Rise of Vocational Guidance

In 1908, Frank Parsons, a professor at Boston University, called attention to the increasing interest being expressed in assisting people in adapting to careers based on their individual interests, abilities and aptitudes. In that year he helped to establish the Vocational Bureau to carry out this service.

Much like the enthusiasts of the vocational movement which preceded and later incorporated much of the
guidance movement, advocates of vocational guidance hoped to provide suitable jobs for workers and suitable workers for the various jobs.

In 1909, Parsons wrote a book entitled *Choosing A Vocation* in which he indicated that the wise choice of a career involved three essential steps:

A. A clear understanding of yourself, your attitudes, interests, ambitions, resources, limitations and their causes.

B. A thorough knowledge of the requirements, conditions of success, advantages and disadvantages, compensation, opportunities and prospects for different types of work.

C. A true reasoning on the relationship between these two groups of facts.51

Since the goals of both the vocational education and vocational guidance movements were so similar, it is not surprising that they became what Bewer refers to not as distinct movements but rather "elements in the same series." Vocational guidance is, indeed, the "vestibule and the back porch for vocational education."52

Federal Bills for Vocational Education

A number of bills were passed to provide federal aid for vocational education during this period including:


A. First Morrill Act (1862) which established the land grant colleges.

B. Hatch Act (1887) which provided for the establishment of experimental stations in each of the states.

C. Second Morrill Act (1890) which increased the amount of federal assistance for the land grant colleges.

D. Adams Act (1906) which increased the amount of federal money appropriated under the Hatch Act.

E. Nelson Amendment (1907) to provide federal grants for states for use in the operation of the land grant colleges.

F. State Marine School Act (1911) which established schools for those interested in a marine career. This act also introduced the idea of "matching" federal funds at the state and local level, a concept that was to become a significant part of educational funding by the federal government.

This steady progress, spurred on in large measure by the National Society for the Promotion of Industrial Education and members of the American Federation of Labor, culminated in the passage of the Smith-Lever Act of 1914.

Otherwise known as the Agricultural Extension Act, this law provided matching funds to establish co-operative study and demonstration programs in agriculture and home economics to people not in attendance at colleges.
This forerunner of the modern extension programs of many major universities depended largely on public lectures, field demonstrations and the publication of various "how to" pamphlets. Just as evening classes provided practical vocational education for the city dweller, this program gave the farmer and farm workers the educational tools to improve himself in his chosen job.

Commission on National Aid to Vocational Education

The Smith-Lever Act was passed, but not without some difficulty and a little political log-rolling. Earlier legislation had established the precedent for federal aid to vocational education on the college level, but this act was specifically designed to provide similar assistance to schools below the college level.

The Society for the Promotion of Industrial Education had been trying to win favorable recognition of the Page-Wilson bill to provide federal assistance to the states for secondary school vocational education since 1910 with little success. Passage of the Smith-Lever Act, which contained a small part of the Page-Wilson provisions, was a victory for the lobbying group in itself, but Senator Smith's resolution to create a commission to study the need for the unenacted provisions of the earlier bill represented a major advance for vocational education.
The Commission, consisting of nine members, was established in January of 1914 and charged to study the needs and report to Congress in June. Under the chairmanship of Senator Hoke Smith of Georgia, the members proceeded to collect testimony covering several different aspects of the vocational education question. In its report, the study group pointed out that there was a very real need for vocational education at all levels, but the need had grown beyond the capacity of the state and local governments to effectively meet it. Therefore, the commission recommended federal grants be authorized to stimulate vocational education, train teachers and partially finance vocational schools in order to promote the general welfare of the nation. It also recommended that these publicly supported schools below the college level be publicly controlled.

As so often before in the struggle for large-scale vocational education, the report was read to Congress and remained in the hopper for nearly two years before any action was taken.

**The Smith-Hughes Act**

Hoke Smith, chairman of the Senate Education Committee, and his House counterpart Dudley M. Hughes

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copied the Commission's recommended bill verbatim and began the long fight that ended in passage of the Smith-Hughes Act of 1917. It seems somehow appropriate that President Wilson signed the act as the National Society for the Promotion of Industrial Education, which had been a major lobbying group for its passage, was holding its annual convention in Indianapolis.

The act, also referred to as the Vocational Extension Act, was to be administered by a Federal Board of Vocational Education composed of the Secretary of Commerce, the Secretary of Agriculture, the Secretary of Labor, the Commissioner of Education and three citizens representing labor, manufacturing and commercial interests appointed by the President. These men were responsible for the allocation of funds to the various states on the basis of population and for the submission of the variety of reports which the law required.

In turn, each state was to establish a similar board to plan and submit for federal approval the detailed operation of the state program. The state treasurers were responsible for keeping track of the federal money and each dollar of federal aid was to be matched on the state and/or local level. The original appropriation of $1.7 million was to be gradually increased to reach a ceiling of $7,200,000 by 1926.

It took ten months for all of the forty-eight states to ratify the act and for nearly three decades, it
continued to function virtually unchanged supplemented in 1937 and 1946 by the George-Dewey Act and George-Barden Act respectively. With its passage, the three major aims of the Commission on National Aid to Vocational Education were finally realized.

1. The states had undertaken the establishment of broad new types of education in cooperation with the federal government.

2. The federal government had provided funds to aid the states and local communities in providing vocational education.

3. Uniform minimum standards for all the states and specific earmarking of funds had been established as procedures to safeguard the expenditure of federal funds for the training program.
CHAPTER III
BEGINNINGS OF TRADE AND INDUSTRIAL EDUCATION IN OHIO

Throughout America in the late 1800's, the manual training schools were most often private institutions. In Ohio, some public support came from local school boards and boards of education, but many of the institutions themselves remained under private control. Finally, in recognition of the growing need for vocational training and the increasing awareness of the public responsibility for providing it, city after city saw public vocational schools established in response to the increasing demand.

Early Industrial Schools in Ohio

Cincinnati

Cincinnati's manual training schools, dating from the mechanics' institute in 1828 to the public evening schools for workers established in 1840, were among the earliest in Ohio and in the country.\(^55\)

\(^{55}\)Vocational Education, Superintendent's Special Report to the Board of Education (Cincinnati, Ohio: January 13, 1941), p. 1.
By the 1900s, the city was already well on its way to establishing its reputation as the machine tool center of the world, and the training provided in technical co-operative programs for boys and girls at Woodward and Hughes High Schools were playing an important role in familiarizing students with a complete industrial arts program.56

Pliny A. Johnston, the Assistant Principal of Woodward High, organized the two year co-operative program for boys in 1910 based on the philosophy list outlined by Herman Schneider in 1899. (See following sections.) Instead of taking the four year industrial arts program which was offered at Woodward, students could enroll in co-operative classes and spend half of each traditional six-hour school day in in-shop training. The ninth and tenth grade programs were offered at both schools, but the eleventh and twelfth grade course was consolidated at Woodward.57

Separate vocational schools in Cincinnati date to the establishment of the Apprentice Continuation School in 1909, the first of its kind in the United States to be established with public funds under the authority of a city board of education.58

56 Ibid., p. 2.
57 Ibid., p. 2.
58 Ibid., p. 4.
Superintendent Frank B. Dyer was approached by a group of local machine tool makers who wanted to establish a co-operative education plan together with the board of education. They believed:

The future development of our industrial interests upon which the growth of the city is largely dependent will be materially advanced...by establishing such a plan of cooperation. The slight cost of operating these classes will be more than compensated by the resulting growth of our manufacturing interests which will inevitably follow efficient industrial education.59

Dyer agreed with their argument and recommended to the board that it establish a school to assist the manufacturers in providing technical training for their apprentices. The school was opened on August 30.

The school operated under the Fitchburg plan offering four year apprenticeship courses designed in co-operation between the high school and the manufacturers. During the first year, the course was strictly traditional school work. The next three years shop and school work were taught in alternating weeks. While one of the shop’s apprentices was in school, his partner was working in the shop.60 (See following section.)

While the enrollment ranged from 100 to 350 during the schools first years, not all the students were from the

59 Ibid., p. 4.

60 William T. Magruder. "The Need for Industrial Education and How It May Be Met," speech presented at the Thirtieth Meeting of the Central Ohio Schoolmasters Club, December 1, 1909, Columbus, Ohio.
industrial field, but the institute served the machine tool industry for over thirty years and was the direct forerunner of the city's Mechanical High School.

When the Ohio Legislature passed compulsory education laws requiring young people between fourteen and sixteen, who had quit school after the fifth grade to work, to attend classes for four hours a week, a new type of training school was established.

On February 6, 1911, Cincinnati's Board of Education passed a resolution authorizing the establishment of compulsory continuation classes, thus becoming the only city to accept the provisions of the law and to make them effective.

From these classes evolved the program of cooperative commercial training for telegraph messenger boys in 1914. The boys worked every second week and on alternate weeks attended the school which was designed to help them obtain training for office positions. This was the crude beginning of what was to become Cincinnati's Commercial High School.

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61 Vocational Education, Superintendent's Special Report to the Board of Education (Cincinnati, Ohio: January 13, 1941), p. 4.
62 Ibid., p. 5.
63 Ibid., p. 5.
64 Ibid., p. 6.
Cleveland

Cleveland was not far behind in formally establishing vocational education courses. As early as 1847, fifteen students were taking Miss Crosby's high school course in linear and perspective drawing, and by 1851, a thirteen-week adult evening school for workers was being conducted.

The Cleveland Manual Training School opened in 1886, and Newton M. Anderson, who had aroused enthusiasm for vocational education as a teacher at Central High where he established a carpentry shop for the students, was made principal. The school's three-year program, including classes in drawing and shop which met three times a week, was distinct from and offered in addition to regular high school work.

In 1887, the Central Manual Training School, which was originally organized by a private group of stockholders, came under the direction of a fifteen-member board. Eight members were elected by the stockholders and seven were chosen by the board of education. Support for the tuition-free school was derived from a city tax levy.

65 "History of Industrial Arts and Vocational Education in The Cleveland Public Schools," Industrial Arts Department, Cleveland Public Schools, n.d.
66 Ibid., p. 2.
67 Ibid., p. 2.
In response to a growing interest in vocational training, West Manual Training School was established in 1890 under the direction of W. E. Roberts of the Massachusetts School of Technology. The major emphasis of the three-day-a-week classes was on drawing, carpentry, wood turning and patternmaking.68

That same year, principal E. A. Dillion expanded the original Central Manual Training School program to five days a week, but it was still in addition to the regular high school program. It wasn't until 1903 that a two year manual training course was incorporated into every high school, thus recognizing its importance as an integral part of the educational system.69

While the high school program continued to develop, it became apparent that only five to six percent of the city's children ever attended high school.70 In 1893, manual training ranging from clay to simple tool and bench work was introduced into elementary schools.

With this additional phase of the program, Cleveland's vocational education program was in need of city-wide organization and co-ordination, so in 1893, W. E. Roberts was appointed City Supervisor of Manual Training.71

68Ibid., p. 3.
69Ibid., p. 5.
70Ibid., p. 4.
71Ibid., p. 4.
Manual training in the regular high schools was relatively short-lived. In 1905, the board of education's committee on schools and the bread winners recommended that two manual training high schools be established and the manual programs be removed from the other schools. The board adopted the resolution and began preparations for the school, but by a fluke of policy change which has never been explained, when the school was opened in 1906, it was the Cleveland Technical High School.72

Cleveland's early and well-organized experience with the trade and industrial education program, based on a co-operative effort of public administrators and private businessmen, laid a firm foundation upon which the city was to build as the need for war preparedness approached.

Toledo

On November 2, 1872, Jesup and Susan Scott deeded a tract of land to the trustees of the proposed manual training school and ex officially to the mayor, the superintendent of education and the governor of Ohio. The deed specifically stated that the endowment was to be used...

...to establish an institution for the promotion of knowledge, in the arts and trades and the related sciences, by means of lectures and oral instruction; of models and representative works of art; of cabinets of minerals; of Museums

72Ibid., p. 7.
Instructive of the mechanic Arts and of whatever else may serve to furnish artists and artizans with the best facilities for high culture, in their respective occupations; in addition to what are furnished by the public schools of the city.73

In spite of this, many Toledoans looked on the school as a liberal arts institution and ignored its manual training aspects, thus setting the stage for the confusion that was to grow up around its control, purpose and administration.

The first board, including three of Scott's sons, with one, William serving as President, and Albert E. Macomber, who was to become the champion of the manual training concept in Toledo, administered the school offering free training to those who could not afford to pay. When it opened in 1875, William W. Young, a British architect, was hired to teach freehand, mechanical and architectural drawing to a class of ambitious laborers. The fifteen students turned out to be mostly women, and Young resigned. A disheartened board elected C. J. Shipley to finish the term.74

For the first three years, the tuition was insignificant and the value of the Scott farm steadily dwindled as the railroad terminal which was to be built

73Deed of Trust. Jesup W. Scott and Wife to the Trustees of the Toledo University of Arts and Trades. Received for record October 24, 1872 and recorded November 2, 1872.

near it failed to be completed. While more students enrolled each term, the nature of the courses made them of interest only to the artistically inclined. In order to try to support the school, William H. Raymond, a pioneer businessman and board member endowed a $15,000 professorship, and other members made similar, though smaller contributions and solicited funds from the businessmen of the city, but in 1878, the school was closed for lack of funds.75

In 1884, under the authority of a 1873 act of the Ohio Legislature which permitted the city council to accept endowments for specific educational purposes, the board, in an effort to keep the debt-ridden school open, turned the farm and the endowments over to the city for the "municipal" Manual Training Department of Toledo University. Thirteen directors, including the Scott sons and Macomber, were appointed by the board of education, the city council and the council of aldermen.76

The courses, which through the influence of John W. Dowd were offered in conjunction with public high school programs, were not designed to teach trades, but rather to instruct the student in the discipline of the mind through practice in the use of tools.77

year program, which though housed in the high school was under separate administration, was designed without electives, and three hours of each day were spent in manual training.\textsuperscript{78}

The first fifteen years under the control of the city, which culminated in a new manual training building built with money from a tax levy, proved to be a short-lived era of good feeling. The two boards worked together, found good teachers and administered a successful program that offered the kind of training which was in great demand, but in 1900, when the manual training school was legislated out of existence and the board of education began to make the manual training department into a "university," Macomber began a campaign to protect the Scott concept of manual training.

That same year, Dowd, who was then president of the Board of Education, recommended that a separate manual training high school be established and include regular high school courses in order to ease the friction which had developed concerning the scheduling of courses around the shop program.\textsuperscript{79} Only Lafayette Lyttle opposed, and two separate high schools with distinct faculties were established.

In 1900, the Manual Training School reorganized as the Polytechnical School offering three curricula with

\textsuperscript{78}ibid., p. 55.
\textsuperscript{79}ibid., p. 107.
one specifically designed to provide the requirements for admission to the best technical schools in the country. Students had to be graduates of the eighth grade and pass an entrance test. College students were admitted on a special basis. When the board of trustees sought to expand the Polytechnical School, Macomber strongly opposed because he felt the city and the board were distorting the original aims of the manual training program.

Later, when the directors of the school sought to exclude all ninth grade students who were not taking a fulltime manual training course, Louis H. Rohr brought suit against the institution. He felt that since the school had originally been designed to supplement high school courses, the directors had no right to make such a ruling, and technically the school was on board of education property and therefore a public school. The court ruled in favor of the Toledo University saying that since it was a private institution, it had absolute authority to determine who was eligible to attend, and just because the tuition was free did not mean that it was a public school.81

Macomber initiated quo warranto proceedings against the University to test the constitutionality of the law under which it was established, charging that

80 Ibid., p. 112.
81 Ibid., pp. 129-133.
the directors were violating the express purpose for which the school and the initial endowment had been intended. The court decided that the city of Toledo was merely holding the endowment in trust and the school was essentially private, therefore, the directors had every right to determine the purpose and administer the school as they saw fit.  

Until the Toledo University Polytechnical School affiliated with the Toledo Medical College in 1904, Toledo University consisted solely of the manual training department and had been supported in large measure by city tax levy. That year, the council and the board of education refused to re-authorize the levy because a "university" as defined by law did not exist.

This brought the conflict between the board of education and the city council and the board of directors into sharp perspective. Even when the Ohio Legislature authorized city councils to levy a 5/10 mil tax to finance a municipal university, the local situation did not change. On May 15, 1906, the anti-university faction of the city council passed the Wickenheiser Ordinance demanding that the board of directors, who were operating the school at a loss, turn the manual training department over to the city council together with the funds and the Scott estate.  

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82 Ibid., pp. 134-137.
83 Ibid., p. 203.
Macomber, who had been at odds with the directors' in the reorganization of the Scott school as a "university", although he was still on the board, praised the measure, but City Solicitor Northrup, who supported the university concept, indicated that in view of earlier court decisions, the city had no right to transfer manual training from the University. On a re-vote, the resolution was defeated, but after months of arguing, it passed on a third vote.

After Lyttle, who was still active on the city council, charged the directors with misusing the Scott funds, the city auditor refused to honor University warrants and the financial crisis deepened. On October 12, the directors refused to open the school. The following day, four men from the board of education took over the building and remained inside to keep the directors from regaining control. The directors, in turn, brought suit saying that termination of their lease in the building required one year's written notice and a fair price and demanding removal of the manual training equipment. In 1907, the court decided that the board of directors had no power to bring suit because they were purely an agent body with no vested rights in the matter,

84 Ibid., pp. 207-208.
85 Ibid., pp. 212-213.
and while they did not demand that the board of education give up the building, they did concede that it had exceeded its authority in seizing it.86

In an appeal, the court reversed the decision and issued a mandamus compelling the board of education to give possession of the building to the city and the board of directors. In 1908, the law committing the administration of a university to the board of education was declared unconstitutional, and two years later, the circuit court again ruled against the board of education saying its administration of the University amounted to taking property without due process and an impairment of contractual obligations. The Ohio Supreme Court finally ordered that the building be returned to the directors who owned the title by July 1, 1911.87

From this maze of litigation and disorganization, a university in the traditional sense evolved between 1910 and 1911. Macomber, who had been essentially fired from the board of directors after the Wickenheiser Ordinance, continued to chide the city about the University's quality and purpose and to fight for the concept of manual training hand in hand with academic pursuits in which Jesup Scott had placed his confidence forty-two years before.

87 Ibid., p. 283.
Columbus

While separate trade schools were relatively late to develop in Columbus, industrial arts classes for grade school boys were provided at two centers, Sullivant School and North High School, as early as 1894. Two years later, the courses were discontinued because their popularity made the addition of new centers necessary and the city refused to approve a tax levy for this purpose.

After twelve years of absence from the curriculum, manual training programs patterned after the Sloyd System were introduced and made a compulsory part of education from the fourth grade on. Later, as the vocational movement developed, the exercises of the Sloyd method were replaced with the making of useful projects, and the term "manual training" was replaced with the more inclusive term "manual arts."\(^{89}\)

In 1909, the Columbus Trade School was established to provide training in printing, machine shop, electrical construction, cabinet making, carpentry and drafting. By 1914, plans were underway to convert the school into a Technical High School. Freehand, mechanical, and


\(^{89}\)Ibid., p. 2.
construction drawing were taught to all pupils. Under cultural and academic studies, reading, grammar, writing, spelling, industrial arithmetic, algebra, geometry, industrial geography, industrial history and the study of local industries were taught to both the class and the individual by lecture and textbook.\(^9\) In 1916, upon the recommendation of the State High School Inspector, a high school charter was issued for the institution whose primary purpose "should be employment training not college preparation."\(^1\)

Statistics reported in 1909 indicate that:

While enrollment in 1890 was but 47 percent of the enumeration of school population (in Columbus), from six to twenty-one years of age, it has increased until it is 54 per cent. Similarly, that the number of persons six to twenty-one years of age in Columbus not attending any public or private school, has decreased from 33 per cent of the enumeration of school population in 1890 to 29.9 per cent.\(^2\)

**Dayton**

In 1931, John H. Patterson, the President of National Cash Register Company, and Edwin J. Brown, the Superintendent of Public Schools, worked out a plan for a co-operative high school which was to become the cornerstone of Dayton's vocational education program.

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\(^1\)R. O. Knight, *op. cit.*, p. 2.

It began with the enrollment of forty youths, all full-time apprentices paid by their employers for attending classes in mechanical drawing, tool designing and shop mathematics programs four hours a week.

Patterson and several other industrialists, including F. O. Clements of Dayton Research Laboratories, Harry J. Hunt of National Cash Register, W. J. Fogarty of Fogarty Manufacturing, Willard Barringer of the Dayton Herald and George Sollenberger of the Dayton Blast Works, formed an advisory committee to seek ways to bringing vocational instruction such as was offered their apprentices into the city's regular education program.93

When the Co-operative High School opened in 1914, the Continuation School, otherwise known as the Trade Extension School, moved into the same building. George Weimer was selected to head the unit, and Clare Sharkey and Harry Clingman were assigned to work with him.94

By 1915, with the assistance of eight participating industries, eighty-three students were being instructed in courses ranging from toolmaking, drafting, pattern making and printing to the machine trades and mechanical and electrical engineering. The shop course

93 "John H. Patterson Cooperative High School's First Fifty Years" (Dayton Vocational Teacher's Association, n.d.), p. 5.

94 Ibid., p. 7.
involved shifting the students from job to job so they could become familiar with a variety of machines and learn basic principles of machine operation.95

Akron

Among the earliest documented vocational schools in Akron were a sheet metal school, an automotive school and an auto electrical school which were established as part of the Akron Continuation School in 1920.96

In 1923, after a series of studies initiated by Philip P. Gott, Executive Secretary of the Akron Builders' Exchange, the Board of Education was requested to organize a course in bricklaying.

Two years later, Mr. Hanan, President of the Board, appointed a committee to study the city's vocational needs together with industrial representatives. By 1927, this group had recommended the establishment of a number of courses including carpentry, sheet metal, plumbing, electricity, painting and the "boy built home" sponsored jointly by the Board of Education and the Akron Builders' Exchange.97 That same year, Walter Kirn presented the following resolution to the board:

Be it resolved: That the Board of Education of the Akron City School District hereby authorize the Superintendent of Schools to

95Ibid., p. 5.
97Ibid., p. 11.
offer courses of study in Vocational Training to the pupils of this school district, to consist of Auto Mechanics, Machine Shop Practice, Printing Trades, Building Trades, including a trade school. Said courses to be prepared as soon as possible and the fact announced that they will be made a part of the school curriculum commencing Sept., 1927, or as soon thereafter as housing can be provided.

Mrs. M. Otis Hower, anxious to see the vocational education program succeed, donated six months of rent-free space on the stipulation that the new school be named in honor of her husband and classes for the thirty-five students began on schedule in 1927.

Printing and machine shop courses were still held in Central High School and the related subjects division was housed in the Old Perkins Building, but the pattern of the city's vocational education program had been established.

Canton

Records of Canton's early efforts in vocational education are relatively scarce, however, it is known that in the 1936-1937 year, the board of education proposed to offer courses in auto mechanics, electricity, machine tool and die practice, mechanical drawing, pattern making and foundry, and sheet metal work.

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98 Ibid., pp. 11-12.
99 Ibid., p. 13.
100 "Proposed Vocational Subject - 1936-1937" (mimeographed), p. 1.
In a speech before the State Vocational Association for Trades and Industries in 1947, G. F. Malick of Canton's McKinley High School indicated that shop courses offered at his school were presented on a probationary basis during ninth and tenth grades with more specific instruction following the next two years if the student made progress.

In 1939, the Timken School, built and equipped with funds from the Timken Roller Bearing endowment, was opened to foster the highest quality vocational education and Malick was made director of the vocational department.

**Increasing Public Responsibility and Public Participation in the Vocational Education Movement**

The brief histories presented in the preceding section illustrate how the character of the vocational programs changed as the industrial needs of the various cities changed and as America moved further into the Twentieth Century. During the very early years, the confusion that accompanied the founding of the various programs was often attributable to the philosophy of vocational education which placed the major responsibilities on the private organizations. Two men more than any others stand out in Ohio's history as champions for broadening the public's participation in and control of vocational education during these early years—William T. Magruder
of The Ohio State University and Herman Schneider of the University of Cincinnati.

Theory of Co-operative Education

When Herman Schneider began teaching engineering at Pennsylvania's Lehigh University in the late 1800's, the course he presented to his students consisted of strictly theory. In conversations with employers, he learned that they were dissatisfied because the young men they hired had no practical experience. To try to account for the success of some of the Lehigh graduates, Schneider discovered that many of them had to hold part-time jobs during their college careers or drop out and work for a term.

Realizing the value of practical experience, in 1899, Schneider proposed a program of concurrent theoretical and practical training that would make part-time employment in industry an integral part of the college's engineering program. While the Lehigh administration did not share his enthusiasm for such a radical departure from traditional instructional methods, their criticism was a major factor in shaping the workable plan for co-operative education which Schneider brought to the University of Cincinnati in 1903.

In order to gain support among the Cincinnati businessmen, Schneider presented lectures to the Society of Mechanical Engineers, the Cincinnati Metal Trades and
several other organizations. John Manley, the secretary of the Cincinnati Metal Trades organization became one of his chief supporters.

President Charles W. Dabney of the University was favorably impressed with a paper entitled "A Communication on Technical Education" which Schneider submitted to him shortly after he took office. In fact, this introduction to Schneider and his thinking so impressed Dabney that then and there he made the decision to elevate him to the deanship of the College of Engineering, which he did as soon as the post became available.

Basically, Schneider's theory was an extension of the type of apprenticeship training manufacturers had already offered their employees under the Fitchburg plan. He proposed that the employers work with the college to train young college men for the highest position within the firm. Years later, he summarized the problem this way:

...Prospective engineering practitioners were withdrawn from active life during their impressionable years, in order to prepare for active life. They had a fair amount of principles but lacked sadly in knowledge of the other elements of their profession. They had no tests of their abilities in their chosen fields...

Training in precept only leaves us all children in the work a day world; we learn to walk among men by stumbling and getting bumped...101

The educational necessity of the program was equally balanced by its economic practicality, especially in a city as trade-diversified as Cincinnati, as Schneider pointed out:

It is manifestly impossible to equip a school with all the material and apparatus necessary to teach the young men in the school all the trades that we have here in the city. The cooperative idea seems to be fairly well fixed in the minds of our school people and there are good chances of its adoption to meet the peculiar needs of this city.\textsuperscript{102}

Supporters also emphasized that the program offered students a chance to earn part of their tuition, thus providing educational opportunities for a broader segment of the population, and the same given space and number of teachers could handle twice as many students, since only half of those enrolled in the program would be using them at any given time.

In 1906, the Board of Directors had granted the authorization for the establishment of such a course in the Department of Chemical, Mechanical and Electrical Engineering.\textsuperscript{103} The six year course was offered to twenty-seven students during a traditional nine month school year, and theoretical and practical classes were

\textsuperscript{102}Letter, Herman Schneider to William T. Magruder, January 7, 1909. University of Cincinnati Archives.

held during alternate weeks.\textsuperscript{104}

In 1909, civil engineering was brought under the program. In 1912, upperclassmen were placed on two-week alternation periods, and the following year, the program, which now consisted of five eleven-month years, was organized on the two-week basis.\textsuperscript{105}

The program continued to grow and evolve to meet changing needs, and in 1935, Raymond Walters, the President of Cincinnati University, clearly summarized the role of cooperative education in a university:

...The cooperative system as devised by Dean Schneider and as put into practice by the Engineering and Commerce Faculty is in full accord with the ideal of a true university. Theory comes first, both as to emphasis, and as to time order. The cooperative student learns his theory in class; he obtains the demonstration of it in the laboratory—which is his alternating job in industry or business.\textsuperscript{106}

**Increasing Awareness of the Public's Responsibility for Vocational Education**

Well before 1900, people had recognized that if equal educational opportunities were to be guaranteed, federal aid would be necessary. In other words, the public would have to assume the responsibilities of providing vocational education. A number of organizations, including the National Educational Association, the American

\textsuperscript{104}Ibid., p. 27.
\textsuperscript{105}Ibid., p. 27.
\textsuperscript{106}Herman Schneider, op. cit., foreward.
Federation of Labor, the American Association for Labor Legislation, and the National Society for the Promotion of Industrial Education, joined with economists, sociologists and opponents of child labor on the local, state and national levels to make the public aware of their role in this field.  

William T. Magruder, professor of mechanical engineering at The Ohio State University from 1896 to 1930 and the President of The Ohio State Branch of the National Society for the Promotion of Industrial Education, was one of the most active participants in this campaign.

Part of his personal papers, dating back to 1906, reveal Magruder to be a person with considerable drive and personal conviction as to the merits of some type of preparatory work training courses in the public schools. As a dedicated educator at the university level, he, no doubt, must have witnessed and realized the total inadequacies of professional-level training for the masses. Also, in his position as an educator in a highly industrial field, we can assume that he was well aware of the transition that was in progress—a switching from an agrarian society to an industrial one.

In a speech before the Ohio Society of Mechanical,

Electrical and Steam Engineers in 1907, Magruder summarized the problem in these words:

The state provides us with professional schools and colleges...for the benefit of the favored few who have been blessed with brains. But when it comes to those technical, industrial, commercial, and utilitarian educations which are not professional, but strictly useful, which teach a man or a woman to make the most of their talents, how to earn the largest wages, and to be something more than merely a cog in the industrial machine, when it comes to those educations which are neither strictly cultural nor professional, the state relegates them to the public-spirited philanthropy of the citizens and to selfish motives, or lets their work go undone.108

While this consideration of the individual reaching his greatest potential was an evident need since most Ohio students dropped out of school after the fifth grade, the economic demands of the growing industrialization movement were, perhaps, the over-riding reason for extending the benefits of industrial education to the masses. Magruder pointed out the economic problem and means of solving it to the Ohio State Board of Commerce in Columbus in 1909:

...The great industrial problem of today is to maintain an adequate supply of active, intelligent and skilled American labor. This is one of the most important problems that confronts us today as a nation. If our public schools cannot supply the demand, shall we repeal the law forbidding the immigration of contract labor, and seek to enlarge our artisan and agricultural

populations from the ranks of industrial Europe? The problem of a better supply of intelligent and skilled labor and the problem of a more highly educated and better trained citizenship are both capable of solution by the proper instruction of the masses in industrial education.

...Wherever manufacturing is done, merchandise bought and sold, coals and ores mined, stones are quarried, fields are tilled, the lakes and rivers are fished for a living, transportation engaged in, meals cooked, houses kept, clothing made and the sick nursed, there will there be a demand for persons who have received an industrial education. The question is one that is not local, it is state-wide. It pertains to the fundamental practice of the state in educational matters...No local board of education can afford to study this subject solely for itself.109

In Ohio, the Tuttle Bill had just been passed, thus putting the subject of agricultural, industrial and vocational education and trades schools before all the boards of education in the state and giving them the power to establish and maintain manual training and commercial departments in connection with the public school system. This was a great step forward, but it was still a far cry from the kind of state-wide program which Magruder and his colleagues had envisioned. As soon as the bill was passed, plans were underway to create a Commission on Industrial Education at the state level to study the problem of vocational education.

In 1910, the minutes of the meeting of the Board of Directors of the Ohio Branch of the National Society for the Promotion of Industrial Education indicate that a motion to "take such steps as are necessary to add a bureau of agricultural and industrial education to the Department of Public Schools under the Commissioner of Common Schools" passed unanimously.\textsuperscript{110}

In 1909, Magruder predicted the type of action which Congress would take during the next decade when he said:

> If a question of this kind arose in the Congress of the United States and which involved all the states rather than only one state, Congress would try to answer the question for the entire country, and not require each state to use its own best efforts to solve the problem. It is a question involving a community of interests.\textsuperscript{111}

Mounting pressure within the various states and the efforts of men such as Magruder were a major factor resulting in the national movement for passage of the Smith-Hughes Act in 1917.

\textsuperscript{110}Minutes of Meeting of Board of Directors of the Ohio Branch of the National Society for the Promotion of Industrial Education. November 2, 1910.

\textsuperscript{111}William T. Magruder. "The Creation of a Commission on Industrial Education," \textit{op. cit.}
CHAPTER IV

STATE ADMINISTRATION OF TRADE AND INDUSTRIAL EDUCATION UNDER FEDERAL ACTS: 1914-1940

An Interim Period: 1914-1917

Between 1914 and 1917, the drive for vocational education in Ohio passed through a period of relatively quiet, though steady, development.

For years men such as Schneider and Magruder had been working through groups affiliated with the National Society for the Promotion of Industrial Education waging a vigorous propaganda campaign to make lawmakers, educators and the general public aware of the scope of their responsibility in the field of vocational education. (See Chapter III.)

At about this time, members of Congress, urged on by the National Society's lobbying body, began to recognize the national need for federally-financed vocational education. (See Chapter II.)

In February of 1917, this growing awareness and concern resulted in the passage of the Smith-Hughes Act which laid a firm foundation for a co-ordinated effort to encourage and support vocational education which lasted virtually unchanged for over fifty years.
Ohio's Acceptance of the Smith-Hughes Act

The Smith-Hughes Act, having been duly signed into law by President Wilson after a bitter Congressional fight, did not become binding on any state until the state's legislature formally accepted it.

On March 30, 1917, the Ohio House and Senate approved it and passed the Ohio Acceptance Act. A scant ten months had elapsed since vocational education had been made a matter of national priority.

The State Board for Vocational Education

Governor James M. Cox, in accordance with the provisions of the Smith-Hughes Act, appointed a State Board of Vocational Education. Dr. Randall J. Condon, Superintendent of Cincinnati Schools; Walter Edmund, Superintendent of Sandusky Schools; A. C. Eldredge, Assistant Superintendent of Cleveland Schools; Dean Alfred Vivian, Ohio State University College of Agriculture; S. J. McCune, Brilliant hardware dealer; Mrs. Kent W. Hughes, wife of a noted Lima judge; and State Superintendent of Schools Frank B. Pearson served on this first board with Pearson acting as ex officio secretary. The members were charged with studying the new law and the state's needs and, on the basis of

112Roger D. Roediger, A History of The Ohio Vocational Association (Columbus, Ohio: The Ohio Vocational Association, 1961), p. 6.
their findings, formulating a workable state plan for administration of the Smith-Hughes Act.

Their task was a formidable one. The plan, which was drawn up along federal guidelines with the assistance of the Director of Vocational Education from Washington, was completed late in 1917. On December 14, the Federal Board of Vocational Education approved the Ohio Plan, thereby formally bringing much of the state's vocational education program under the auspices of the national government in a program of co-operative federalism (i.e. joint federal, state and local responsibility).

The Nature of the State Plan

The Federal Board of Vocational Education viewed each state plan as a flexible, almost living, system which could and would grow to meet the individual needs of the job, the society, and the people it was to assist.\footnote{J. Chester Swanson, Development of Federal Legislation for Vocational Education, prepared for the Panel of Consultants on Vocational Education, U.S. Department of Health, Education, and Welfare (American Technical Society, 1962), p. 63.}

The Ohio Plan attempted to achieve this flexibility by allotting federal funds for only one fiscal year at a time. Since the allocation of funds for forthcoming years would be based on an evaluation of the past year's spending and the current assessment of needs, single year budgeting made review and re-evaluation an integral part of the state plan.
In approving the Ohio Plan, the Federal Board indicated it adequately fulfilled the purposes for which it was designed under the Smith-Hughes Act. It was:

A. a contract between state and federal authorities.

B. a representation of the State Board's policy and the official guide for its administrative and supervisory staff.

C. a means of supplying necessary information regarding vocational education programs and teacher training to local institutions.

D. an insurance of continuity through changing state administrations.

E. a legal basis on which state and federal field representatives could make administrative decision.

F. a systematic means by which all members of the professional staffs of the State Board could evaluate and justify their particular part of the state's program at regular intervals.114

State Supervisors of Vocational Education

Having drafted an acceptable plan, the members of the State Board turned to the task of appointing supervisors whose job would be to judge the applicant schools' eligibility for funds under the provisions of the state plan.

In a number of other states, the need for a state office for trade and industrial education had

114Ibid., pp. 67-68.
become apparent well before this time. In California, for instance, a State Commissioner of Vocational Education had been appointed as early as 1912 to co-ordinate various state programs in this area.

In Ohio, however, there was no state office and no state officer in charge of vocational education until the Board appointed Elbert E. Heusch as the first State Supervisor of Trade and Industrial Education under the provisions of the Smith-Hughes Act. W. F. Stewart and Maud Adams were named supervisors of agriculture and home economics respectively.

During the first years under this program, apparently only Heusch served on a full-time basis. Both Stewart and Maud Adams simultaneously held teacher-training positions in their respective areas at The Ohio State University.¹¹⁵

To receive federal funds, the local superintendent of schools filed a request to establish a vocational education program with the State Board. The state supervisors, in turn, visited the various schools to determine if they met minimum equipment, teacher qualification and other requirements outlined in the Ohio Plan. In cities such as Cincinnati and Toledo which had trade and industrial education programs dating back to 1906, the local superintendent merely requested

¹¹⁵Roger D. Roediger, op. cit., p. 7.
approval for reimbursement of funds.

During these formative years, the State Board met monthly to consider the local applications and the recommendations of the three area supervisors.

A Second Interim Period: 1918-1940

The period between 1918, when federal funds were first made available under the Smith-Hughes Act, and 1940 marked a second era in the development of Ohio's vocational education program, punctuated by the unaccustomed economic needs of war and a steady increase in federal, state and local appropriations for vocational education.

Industrial Education in World War I

One month after the adoption of the Smith-Hughes Act, the United States entered World War I, and vocational education took on the importance of a war emergency measure. In 1917, the Federal Board for Vocational Education sent out guidelines for the organization of classes to assist the U.S. Army in training its men.116

Since the public school programs were entering their final organizational stage, Ohio's trade and industrial schools had to bear much of the burden. Private

industry-sponsored vocational schools found it necessary to supply a larger share of the working force since the immigration of trained laborers was virtually halted by the declaration of war.

The State Board was called upon to administer various military training programs. At the public university level, for instance, members of the U. S. Signal Corps studied at The Ohio State University and used the school's trade and industrial education facilities. A similar example of state involvement in this field can be seen in the program of veteran's vocational education instituted at The Ohio State University. In 1921, Arthur Dean, the Assistant Director of the U.S. Veterans' Bureau Rehabilitation Division, made this assessment of Ohio State's contribution to wartime trade and industrial education in a letter to Dr. O. W. Thompson, then President of the University:

September 22, 1921
...I wish to express my personal appreciation of the valuable assistance that your institution has given in the re-training of disabled ex-service men, thereby enabling them to return to civil life as independent and self-supporting individuals.

...It will be the policy of the U.S. Veterans' Bureau to send trainees, so far as possible, to the regular standardized institutions of America, most of which have registration under State Boards of Education.

I trust that your institution and all others which have been cooperating and assisting in this work will be willing to continue until the government's program of rehabilitating the war disable is completed.
State Aid Under the Smith-Hughes Act

At the time the first Ohio plan went into effect, the total of all monies spent for vocational education in federally-subsidized schools was far from an impressive, or even an adequate, figure. In 1918, the total of all vocational education expenditures in these schools was only slightly more than $2.5 million. By 1921, four years after the Smith-Hughes Act, this figure had reached over $10.5 million.

In 1919-1920, trade and industrial education in Ohio was reimbursed the following sums: 1. Evening trade or industrial schools, thirty-three cities involved, $15,568.44. 2. Part-time trade or industrial schools, eighteen cities involved, $19,591.70. 3. All day trade or industrial schools, two cities involved, $1,969.57.

Between 1918 and 1932, the Federal Board for Vocational Education reported Ohio's expenditures in vocational trade and industrial education to total $806,537.11, the sixth highest figure in the entire nation. Of this amount, the federal government pro-

117 J. Chester Swanson, op. cit., p. 57.
118 Ibid.
vided a total of $157,996.40. Of the remaining figure, the state, over this fourteen year period, contributed only $87,834.90 and the local governments provided $560,705.81.\footnote{Ibid.}

Ohio's heavy reliance on local level subsidies to match the federal contributions (supported by a 1920 opinion of the Ohio Attorney General\footnote{Division of Vocational Education, State Department of Education. Ohio Legislation Applicable to Vocational Education with Attorney General's Opinions (Columbus, Ohio: Instructional Materials Laboratory, 1968), p. 8.}) is representative of the growing national trend toward increased local responsibility for vocational education. In 1922, the National Society for Vocational Education reported that local expenditures for vocational in all federally-supported schools had risen from a mere $1,201,542.38 in 1918 to $5,182,818.22 in 1921.\footnote{J. Chester Swanson, \textit{op. cit.}, p. 57.} In the opinion of the Society's members, this, together with the growing number of vocational schools and programs and increasing enrollments, was a significant testament to the success of the Smith-Hughes concept.

**The Ohio Vocational Association**

As the agricultural, home economics, and trade and industrial education programs became more organized, teachers began meeting to talk over problems common to
their respective fields.

Trade and industrial educators had realized benefits of group action as early as 1906 when Dr. William T. Magruder, chairman of Mechanical Engineering at The Ohio State University, helped to establish the Ohio Society for the Promotion of Industrial Education. (When the National Society for the Promotion of Industrial Education was founded in New York in late 1906, Magruder's group became a charter member.)

Magruder's early papers indicate that he worked to bring the advantages of vocational education to the attention of legislators, school boards, prominent businessmen and educational institutions, first as the Society's secretary and, in 1910, as its president. In fact, Magruder's persistence and effective leadership can be cited as a major factor in Ohio's success in this field.

On the national level, the Society, which became the Society for Vocational Education in 1917, conducted similar information campaigns which were instrumental in securing passage of the Smith-Hughes Act.

By this time, trade and industrial educators were fairly well-organized vertically, however, there was no horizontal organization within the vocational education areas. It was not until 1921 that they held a joint meeting during the annual conference of the Ohio
Education Association. Mr. Clare Sharkey, a leader in Dayton's trade and industrial education program, chaired the first meeting of the Ohio Vocational Association in Columbus the following year. In 1925, the American Vocational Association evolved from the Society for Vocational Education and the Ohio group became affiliated with it.

In its 1934 constitution, the Ohio Vocational Association clearly set forth its main purposes:

1. To promote vocational education in all forms and to afford opportunity to all interested persons to present and discuss problems having to do with the successful organization and the administration of this type of education.

2. To make available as far as possible the results of work accomplished and of experiences gained in vocational education and related fields both in this country and abroad.

3. To affiliate directly with the American Vocational Association and to co-operate with other agencies for promoting vocational education.

A listing of the Association's elected officers during its early years indicates how closely its work co-ordinated with that of the State Board. In 1923, the group elected Dean Alfred Vivian, a member of the first State Board, as president and Elbert L. Heusch, the State Supervisor of Vocational Trade and Industrial Education.

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124 Roger D. Roediger, op. cit., p. 7.
125 Ibid., pp. 10-11.
Education, as secretary. (Heusch held both positions until 1935, when he was replaced as the Association's secretary by Chester S. Hutchinson. He retained his state supervisor post until 1945.126) In 1934, W. F. Stewart, who had been replaced by Ray Fife as State Supervisor of Agriculture in 1921, was elected president, followed by Clare Sharkey in 1938 and Hutchinson in 1939 and again in 1940.127

Distributive education became a major vocational field when the George-Deen Act went into effect in 1937. (See following section.) In 1939, distributive education teachers affiliated themselves with the Ohio Association, and two years later, Marguerite Loos was appointed as the first State Supervisor of Distributive Education.

While the Ohio Association was directly involved in supporting proposed federal legislation during this post-Smith-Hughes era, it was not until the early 1940's that a standing legislative committee was established.128 During the 1950's, this organization became a major promoter of intensification of the state legislative program for vocational education.

126Ibid., p. 15.
The movement toward public responsibility for vocational education, which culminated in the passage of the Smith-Hughes Act, was far from pacified by the impressive growth of vocational education programs during its first decade. During the thirty year period immediately following the enactment of the Smith-Hughes Act, no fewer than fifty-three vocational education bills were presented to Congress. The way had been opened and the co-operative approach to the problems of vocational education had proven a successful one.

A number of acts were passed with an eye toward exploring the full potential of the Smith-Hughes concept of educational support and providing the citizens of every state with equal opportunities to obtain the type of education which could prepare them for a useful, productive and rewarding career.

The George-Reed Act

In the late 1920's, men and women concerned with the various aspects of vocational education began to feel there was inequity in the assistance distribution within the major vocational education areas.

129 J. Chester Swanson, op. cit., p. 78.
Those concerned with agriculture and home economics prevailed upon Senator George of Georgia to introduce a new bill to "provide further development of vocational education in the several states and territories." Representative Reed of New York, a state noted for its contributions to the vocational education movement, introduced a companion bill in the House.

As was so often the case with similar legislation during this period, the George-Reed bill aroused few objections, but its passage was delayed by disagreements on the exact wording to be used.

On February 5, 1929, President Coolidge affixed his signature to the bill, thereby making a total of $2,500,000 in new federal money available for state vocational education programs. The initial $500,000 appropriation was to be divided equally between agriculture and home economics programs. (No money was appropriated for trade and industrial education.) An additional $500,000 was guaranteed each year through 1934.

The George-Ellzey Act

When the George-Reed Act appropriations were exhausted in the midst of the depression, Congress passed the George-Ellzey Act.

\[\text{130 Ibid., p. 87.}\]

\[\text{131 Ibid., p. 73.}\]
Three million dollars was to be set aside each fiscal year until 1937. In contrast to the prior law, this act specified the allotted money was to be divided among the three vocational areas with home economics, agriculture, and trade and industrial education each receiving equal amounts. An additional $84,603 was appropriated so each state's minimum share in each of these fields would be $5,000, and $100,000 was set aside to cover the act's administrative expenses.

The George-Deen Act

Taking upon themselves the responsibility of insuring an uninterrupted continuation of federal support for vocational education, a special committee of the American Vocational Association presented a draft of what was to become the George-Deen Act to Congress in 1935.

Following the example of its predecessors, the Society contacted state leaders in vocational education and urged them to approach their respective Congressmen in regard to the importance of continuing the George-Ellzey program.

On June 8, 1936, an entire fiscal year before it was to become effective, Franklin Roosevelt signed the George-Deen Act.

Over a ten-year period, $12 million was to be appropriated and divided equally among the three fields.
Additionally, $1,200,000 was allotted for the support of distributive education; $1 million was earmarked for teacher-training program (see Chapter VII) and $350,000 for the U. S. Office of Education.

Unlike previous vocational education laws, the George-Deen Act was not administered on strictly a matching basis. During the first five years, each state was required to match fifty percent of the federal funds awarded to it. Each succeeding year, the state's matching percentage was increased by ten percent until strict one-hundred percent matching was achieved in the 1946-1947 fiscal year.

The George-Barden Act

(Although chronologically falling beyond the scope of this chapter, this act is presented here to give an overall view of the scope of this particular series of legislation.)

In 1946, again with the urging of the American Vocational Association, the George-Barden Act was introduced as an amendment to the George-Deen Act.

It provided for the specific distribution of federal funds within the three major fields—$10 million for agriculture and $8 million each for home economics and trade and industrial education. (This represented a one-hundred-fifty percent increase for agriculture and a one-hundred percent increase for home economics and
trade and industrial education over the George-Deen appropriations.\textsuperscript{132} $2.5$ million was allotted for distributive education and another $350,000 for the U. S. Office of Education.

By this time, trade and industrial education, which had been completely neglected under the George-Reed Act, had demonstrated its vital role in one war and was training soldiers and men to build guns, tanks, planes and scores of other things for a second one.

Declining Importance of the Federal Board

The Federal Board of Vocational Education had been in operation since the passage of the Smith-Hughes Act administering federal monies, assisting state and local boards, and even, together with the Secretary of War, training American troops in World War I.

As long as the Board was an effective administrative body, it had a basis for existence. However, in 1933, President Roosevelt reduced the board to merely an advisory committee by transferring its functions to the Department of the Interior. Later, its stature was further reduced when the functions were again transferred to the Commissioner of Education. What had once been a major instrument for providing effective federal support to vocational education was now nothing more than one of the myriad sub-departments of the Office of Education.

\footnote{\textsuperscript{132}Roger D. Roediger, \textit{op. cit.}, p. 24.}
In 1946, having outlived its usefulness even in this role, the Board was formally abolished during a reorganization of the federal government.

The Ohio State Plan for Trade and Industrial Education: 1937-1942

In 1927, the Federal Board for Vocational Education published a statement of policy which provided the states with a twelve-page outline for state plans for the five year period ending in 1932.

Throughout this era, the general outline of the plans remained fairly consistent, with the new acts being formally included as they were adopted.

The 1937 Ohio Plan for Vocational Education in Trade and Industries provides a typical example of Ohio's program and indicates the progressive nature of the system's development.

State Director of Vocational Education

Generally, the State Director of Vocational Education was responsible for administering the plan, however, except for a brief period from 1920 to 1921 when C. H. Brady filled the post, there was no such officer in Ohio's government until 1945. The absence of this officer was noted in the 1937 plan, and the State Director of Education, serving as the executive officer

\[133\]bid., p. 17.
of the board was made responsible for administration of the plan.\textsuperscript{134}

**Distribution of Funds**

Under the provisions of the previously described federal acts, all schools receiving federal monies must be under public control and provide classes below the college level aimed at fitting young people over fourteen years old for "useful employment."\textsuperscript{135}

In authorizing the specific distribution of federal funds, the state plan established the following percentages:

A. 25\% for evening trade-extension schools or classes (including short courses supplementing daily work designed to meet the needs of experienced workers in a particular trade or industrial occupation).

B. 60\% for part-time schools or classes (including employee training in industry, co-operative classes, extension classes and general education classes).

C. 15\% for all day vocational schools and classes.\textsuperscript{136}

Approximately 40\% of the total amount allotted for teacher training was used for improvement and supervision of trade and industrial education teachers. (See

\textsuperscript{134}The State Plan for Vocational Education, Reprint of the Trades and Industries Section Only (Columbus, Ohio: Department of Education, Division State Board for Vocational Education, December, 1940), p. 3.

\textsuperscript{135}Ibid., p. 4.

\textsuperscript{136}Ibid., p. 5.
In Ohio, the functions of a representative State Advisory Committee for Vocational Education were carried out by a number of groups such as the Joint Apprenticeship Commission for Plumbing and Heating which had been operating since 1925. Ten years later, a State Advisory Committee for Employee Training in Industry was organized, and both the State Supervisor of Trade and Industrial Education and a representative from labor were named members. Major industrial cities established similar commissions which played an active part in every phase of local trade and industrial education's development.

Prior to June 30, 1930, there was no specific qualifications for the State Supervisor of Trade and Industrial Education. By 1937, however, the state plan outlined specific criteria, indicating the growing importance of the supervisor's role. Preferable consideration was given to men between twenty-five and forty-five who had:

A. three years of approved industrial experience or four years of technical training and one year of practical experience in his trade.

B. two years of teaching experience under the State Plan.
three years of administrative or supervisory experience in the field of trade and industrial education, and

the equivalent of 540 clock hours of approved professional education courses.\textsuperscript{137}

By 1940, the State Supervisor, who had been merely an investigator and an advisor when the post was created in 1918, had a growing list of responsibilities including:

A. Organizing state apprenticeship committees.

B. Working with industrial groups to determine what type of education was needed.

C. Assisting in the establishing of schools and classes.

D. Studying conditions in the state, with a view to recommending the establishment of schools or classes.

E. Conferring with instructors, school officers, and members of boards of education.

F. Addressing committees, clubs, and conventions of instructors.

G. Furnishing articles for magazines and newspapers.

H. Preparing bulletins and other special literature.

I. Inspecting schools.

J. Supervising teacher improvement courses.

K. Preparing reports for the State Board.

L. Organizing teacher improvement programs.

M. Conducting professional improvement courses.

\textsuperscript{137}\textit{Ibid.}, p. 6.
N. Holding sectional meetings with apprentice committees.138

Approaching World War II

The State Plan, which had, as the first Federal Board for Vocational Education envisioned, grown to meet the state's needs, provided a sound and workable guideline for administration of Ohio's expanding trade and industrial education program by 1940.

Between 1939 and 1941, the total money awarded to Ohio under all the pertinent federal acts totalled $237,563.83 with state and local contributions reaching a total of $14,531,389.90.139 The number of trade and industrial teachers had grown nationally from 3,280 in 1918 to 22,208 in 1939, and enrollment in classes reached a peak of 714,739 in that year.140

When the need for war production training became evident in 1940, the public trade and industrial schools of Ohio were prepared to assume the burden they had been too unorganized to shoulder in 1917.

138Ibid., pp. 7-8.


CHAPTER V
WORLD WAR II AND POST-WAR DEVELOPMENTS

The demands of war production radically changed the nature of vocational education programs and soundly shook public confidence in previously applied methods. The needs of the individual were not of prime importance, instead, they were submerged to the demands of war materials' manufacturers.

Educators had emphasized the need for all-around vocational training over a fairly long period of time. Now there was an increasing demand for workers trained in a single skill or operation, and the urgency of the demand made it necessary to get the best possible results in the shortest possible time.

The War Production Acts - 1940-1945

To meet this new demand, Congress passed a series of ten public laws, collectively referred to as the War Production Training Program. Between 1940 and 1945, under the authority of these laws, vocational programs


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for war workers were established and the necessary equipment and facilities were secured.

1. P. L. 668. In 1940 President Roosevelt asked the Bureau of the Budget to secure from the Office of Education the estimated costs for a program of vocational education to train war production workers. Based on this information, on June 27, 1940, Congress passes P. L. 668 providing $15 million to be used for the establishment of pre-college vocational courses. The classes were to supplement employment in occupations necessary for national defense or to serve as pre-employment refresher courses for workers about to enter these fields.142

2. P. L. 812. In late 1940, Congress passed another law to increase the federal appropriations made under P. L. 668, thus broadening federal involvement in state vocational education programs. The main provisions included:

A. An additional $26 million to be used for courses established under P. L. 668.

B. $8 million for providing necessary equipment for such courses either through purchase or rental.

C. $9 million to establish short college level engineering courses.

D. $10 million to provide vocational education
courses to rural and non-rural youths who did not fit
into one of the other student categories.

E. $7.5 million to provide vocational education
courses to youths employed by the National Youth
Administration (NYA).  \(^{143}\)

3. P. L. 146. In July, 1941, specific Congress­
ional appropriations for wartime vocational education
virtually doubled reaching a total of $132,700,000.
Of this amount:

A. $52,400,000 was to cover the cost of supplemental,
pre-employment and refresher courses below college level
in occupations necessary to national defense.

B. $20 million was for the needed equipment.

C. $17.5 million was to be used for the estab­
lishment of college level short courses in engineering,
physics, chemistry and production supervision.

D. $15 million was for pre-college-out-of-school
instruction of rural and non-rural youths who didn't
qualify under one of the other categories.

E. $10 million was for the NYA's courses.  \(^{144}\)

4. P. L. 463. In February, 1942, an additional
$10 million was authorized to be made available for one
year to secure the necessary facilities and equipment

\(^{143}\)Ibid., pp. 55-56.

\(^{144}\)Ibid., pp. 56.
for courses established under earlier War Production Training Acts. 145

5. P. L. 528. This act was unique in this series of wartime legislation in that no new money was appropriated under its provisions. Instead, Public Law 528 stipulated the funds guaranteed for the establishment of pre-college courses in defense-related fields for the 1941-1942 fiscal year should be made available to private vocational schools. 146 Up to this time, federal money was granted only to educational institutions under public control.

6. P. L. 616. In June of 1942, another $9.5 million was earmarked for the cost of vocational courses of the type established under the first of the War Production Acts. 147

7. P. L. 647. Passed in mid-1942, this act represented largest single federal appropriation for war-related vocational education--$139 million--yet made for a single fiscal year. Of this:

A. $94 million was set aside for the cost of pre-college public and private institutions offering defense-related courses.

B. $30 million was appropriated for short college technical and scientific courses.

145Ibid., p. 56.
146Ibid., p. 56.
147Ibid., p. 56.
C. $14 million was to be used for the establishment of courses in production of farm commodities and the repair, operation and construction of farm machinery and equipment to assist farmers in reaching their production goals. These courses were offered to rural and non-rural youths who did not fit into one of the other programs.\textsuperscript{148}

8. \textit{P. L. 11}. On March 18, 1943, an additional $10 million was made available to cover the cost of less-than-college grade vocational courses during the fiscal year beginning July 1, 1943.\textsuperscript{149}

9. \textit{P. L. 135}. Under the provisions of this act, subject to the approval of the Chairman of the War Manpower Commission:

A. $90 million was made available for less-than-college grade courses considered supplementary to employment in occupations essential to the national defense and for the establishment of refresher and pre-employment courses in similar fields in private facilities and institutions.

B. $12.5 million was to be used for courses in food production and conservation, mechanics, farm-machinery repair and farm-labor training.\textsuperscript{150}

\begin{flushright}
\textsuperscript{148}Ibid., pp. 56-57. \\
\textsuperscript{149}Ibid., p. 57. \\
\textsuperscript{150}Ibid., p. 57.
\end{flushright}
Like P. L. 647, this provided general pre-employment mechanical training while at the same time assisting in the attainment of production goals for farm commodities.

10. P. L. 457. This act, also known as the Reconversion Act of 1944, authorized the dispersal of all property appropriate for educational purposes on a tax-free basis to the states, their political subdivisions and public and private non-profit institutions. It also created a Surplus Property Board "to aid in the reconversion from a war to a peace economy..."151

Ohio's War Production Training Program

Under the provisions of the War Training Program, Ohio's Vocational education system took on a more complex character. The Vocational Training for War Production Workers shared the facilities, personnel and supervision of the state's regular vocational education program, but it was administered separately.

Initial War Production Efforts. Ohio's first war production plan, approved on December 5, 1940, provided that Elbert L. Heusch, the State Supervisor of Trades and Industries, would have the added responsibility of serving as Director of Vocational Education for National Defense.152 One general supervisor, three field

151 J. Chester Swanson, op. cit., p. 89.
152 Eighty-seventh and Eighty-eighth Annual Report of the Director of Education to the Governor of the State of Ohio (Blenium July 1, 1939 June 30, 1941), Columbus, Ohio, 1941, p. 58.
supervisors, two stenographers, one accountant and four office assistants completed the staff.

Because of the insistent demand of the various Ohio industries, the early programs (i.e. until 1943) were pre-employment in nature, and all students had to register with the Ohio State Employment Service.153 The Employment Service, in turn, was responsible for determining the labor requirements of the various industries and keeping the schools informed of current needs so students could be trained for areas where they were most needed.

According to Lloyd B. Fidler, Special Assistant Supervisor of Educational Defense Training, between January 15 and May 9, 1940, a total of 276 classes were established at 130 centers in seventy-three counties of the state, and a total of 4,200 students were enrolled.154

Expanding the Program. As the program of war production training expanded, the State Board of Education recognized the need for a separate staff to direct its operations. They appointed a full-time Director of VE-ND who was authorized to appoint a staff which was to include supervisors of finance, operations, and equipment, and six part-time field supervisors.155

153_Ibid., p. 60.
154_Ibid., p. 59.
By 1942, the number of full-time supervisors was increased to five with the addition of the statistics and reports and instructional services division. 

Through close co-operation with similar units on the national and local levels, practices within each division were standardized wherever possible thus resulting in the compilation of a war production manual of operational procedures.

The State Board retained three major direct responsibilities for the program:

A. Preparation and submission of plans, reports, budgets and accounting.

B. Development of state plans for establishment and utilization of state and local advisory committees.

C. Making sure that the State Director secured the adequate facilities.

Working closely with local and state advisory committees to ensure the co-ordination of war training programs to meet the real need of both labor and industry, the Vocational Training for War Production Workers program, which trained 65% of all the workers in larger industrial cities, increased in importance during the war years. The figures from Columbus alone indicate

\(^{156}\)State Board for Vocational Education, State Department of Education, "Administration of the War Production Training Program", Columbus, Ohio. 1942. (Mimeo.)

that in 1942, the peak year for pre-employment and supplementary training, over 3,500 workers were enrolled in such classes and over $88,500 was spent in this field alone.

### TABLE 2

**TOTAL ENROLLMENT IN PRE-EMPLOYMENT AND SUPPLEMENTARY CLASSES FOR VE-ND AND TOTAL AMOUNT EXPENDED FOR SUCH CLASSES IN COLUMBUS, 1940-1944**

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Enrolled</th>
<th>Total Expenditures</th>
</tr>
</thead>
<tbody>
<tr>
<td>1940</td>
<td>132</td>
<td>$1,892.75</td>
</tr>
<tr>
<td>1941</td>
<td>1,077</td>
<td>22,111.82</td>
</tr>
<tr>
<td>1942</td>
<td>3,798</td>
<td>88,626.23</td>
</tr>
<tr>
<td>1943</td>
<td>2,248</td>
<td>43,918.85</td>
</tr>
<tr>
<td>1944</td>
<td>1,617</td>
<td>26,961.84</td>
</tr>
</tbody>
</table>

*Columbus Public Schools, War Production Training Classes, July 15, 1940 - December 31, 1944.*

**Meeting the Needs.** During the course of the war training period, Ohio's schools received a total of $12,981,389.56. 437,846 students were enrolled in the various war-related training programs established during the period. Of this total number, 133,580, the fifth largest number in the entire nation, were trained in eleven different major industrial areas at an average cost of $30 per trainee, $10 below the national average.

Perhaps one of the most fitting testimonies to the role the VE-ND program played in Ohio's overall vocational education system can be taken from the evaluations of the industrialists who employed the trained
students. For instance, a representative of the Columbus Bolt Workers said:

We find that those workers having attended definite training schools prior to their induction into defense jobs have an understanding of the work to be done, of the machines and of their capabilities, of the safety hazards involved, and through this training have a general understanding of what they might expect when they accept a job in a defense plant. With this background, these trainees adapt themselves readily to new surroundings, save considerable time in adjusting themselves to new jobs to be done, and are better satisfied with the work they are doing because they have had the opportunity to decide prior to their induction into industry whether or not they are going to like this kind of work.158

This realization of the importance of industrial training was only one of the benefits of the war program. Another was the establishment of advisory councils and committees, and as the state moved into the 1950's, the activities of the various vocational education groups increased, reflecting a new sense of responsibility.

The Growing Roles of Ohio's Vocational Organizations

The Ohio Vocational Association's Re-Organization and Re-Activation. In 1950, the Ohio Vocational Association (OVA) was re-organized to more effectively carry on its lobbying activities and adequately represent its derivative associations.

Joseph Strobel served as president in 1941, and the following year President John Leonard was assisted by R. J. Spalding who filled the newly-created office of vice-president. Election to the vice-presidency often proved a mere training ground for future presidents as in the case of Ralph A. Bender who was vice-president in 1945 and president the following year.159

George Brandon, who was elected secretary-treasurer in 1949, resigned his position in mid-1951 to make room for four new offices created by the adoption of the 1950 constitution—recording secretary, treasurer, executive secretary and membership secretary.160

Throughout its re-organization, the OVA never lost its close connections with the State Supervisor of Trades and Industries and with the Director of Vocational Education. Joseph Strobel retained his interest in the association well after he became the second State Director of Vocational Education in 1945 filling a position which had been vacant for twenty-four years.161 His successor, Ralph Howard, (1950-1960), had been active in the organization between 1938 and 1951 when he worked closely with OVA as State Supervisor of Vocational

160Ibid., p. 15.
161Ibid., p. 17.
Robert M. Reese, the State Supervisor of Vocational Trade and Industrial Education from 1945 to 1954, became the membership secretary of the OVA in 1959, and seven years later he gave up that position to serve as executive secretary, a position he still holds today.

On the state supervisory level, Reese was succeeded by Byrl R. Shoemaker (1954-1960), Earl Fowler (1960-1961) and Harry Davis (1961-) serving under State Directors of Vocational Education Howard and Byrl Shoemaker (1960-).

One of the Association's major activities during this period was in the field of vocational education legislation. One of their first forays into federal legislative activity was on behalf of the George-Barden Act which was passed in 1946.

Sometime in the early 1940's, a standing legislative committee was appointed, but it wasn't until 1947 that President John Fintz charged it with keeping the executive committee and the general membership informed on legislative matters and initiating necessary legislative activity.

Following this planning directive, the committee chairman, D. R. Purkey, began a program of contacting

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162 ibid., p. 17.
163 ibid., p. 24.
STATE SUPERVISORY STAFF
VOCATIONAL TRADE & INDUSTRIAL EDUCATION - 1947

Charles Felker Chester O. Mills Robert M. Reese F. Ray DeForest P.B. Anderson
N.W. N.E. State Supervisor S.W. S.E.

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OHIO STATE STAFF - TRADE & INDUSTRIAL EDUCATION - 1946

Robert M. Reese
State Supervisor

Harry Paine - Head T.E., Univ. of Cin.
Joseph Roenigh - T.E., Kent (Clev.)
P. R. Anderson - Dist. State Supv.
Charles Felker - Head T.E., Toledo Univ.
C. E. Stiner - T.E., Akron Univ.

C. B. Hurst - T.E., Toledo University
Ray DeForest - T.E., Univ. of Cincinnati
Dallas Downing - Head T.E., Akron Univ.
various Congressmen to urge adoption of area school legislation. In 1949, the members joined with the Association's Public Relations Committee and organized a program to funnel necessary information on vocational programs to state legislators, and in the following years, this became the OVA's major activity.

Professor Ralph J. Woodin, the OVA executive secretary, 1950-1965, outlined an intensification of this program in the wake of a 1951 drive to establish a vocational education committee in each of Ohio's congressional districts and counties. During its first year, the committee was highly ineffectual. Of sixty-five Ohio legislators from twenty-four counties who were polled, only twenty-one had ever been approached by a committee member.164

The so-called lay advisory committee organized at about this same time under the sponsorship of the OVA, seemed to enjoy greater success during its first year under the honorary chairmanship of OVA President C. R. Fridine. In 1952, its members contacted 75% of all Ohio's legislators to acquaint them with the problems and needs of vocational education. As a direct result of their efforts, the 1952-1953 Ohio budget contained $700,000 for vocational education.165

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Unlike the legislative planning committee, the lay committees were made up of representatives of the industrial groups who negotiated the contracts and assisted in carrying out the legislation. These included such groups as the Ohio Retail Merchants, the Farm Bureau, The Grange and the AFL-CIO.

Between 1951 and 1960, these county, congressional district, lay advisory and legislative planning committees were, in large measure, responsible for gaining strong state support for vocational education from a core legislative group which included such notable men as Charles J. Acrney, Oakley C. Collins, David M. Ferguson, Fred Harter, Frank W. King, Tom V. Moorehead, Charles A. Mosher, Kenneth F. Berry, J. Frank McClure, James J. McGetrick, Frank R. Polorny, Ethel G. Swanbeck, Arthur H. Milleson, A. H. Milner, Roger Cloud, Elton Kile, G. D. Tablack, Robert L. Johnson, Jesse Yoder, Kenneth L. Oyster and Ralph E. Fisher.

The OVA's various legislative activities were supported by a number of other state and local organizations. For instance, the group's close association with the Ohio Educational Association was a great help in establishing contacts in the legislature. The Delta Chapter of Iota Lambda Sigma, a vocational education

\[166\textit{Ibid.}, \text{p. 31.}\]
\[167\textit{Ibid.}, \text{p. 31.}\]
fraternity at Kent, recognizing the importance of the committee's activities, awarded the OVA $100 to help finance its legislative work.

Iota Lambda Sigma. Iota Lambda Sigma, a typical example of the many vocational education professional organizations that were beginning to gain importance, was founded at Penn State University in 1930 to promote the cause of vocational education by the recognition of professional training, to maintain a fraternal bond between actual and prospective technical supervisory and directoral personnel, and to give special recognition to high scholarship.

On February 13, 1931, Russell J. Greeley, Head of Industrial Education at the University of Akron, Charles P. Scott and S. G. Conner of the Penn State organization installed thirteen neophyte members in the Delta Chapter at the University of Akron. Greeley served as the first Faculty Advisor under Chapter President H. H. Hummel. In 1950, when industrial education was dropped at Akron, the chapter, with over one hundred members, was formally transferred to Kent State University.

It wasn't until 1946 that Dr. Harry W. Paine, the Director of Vocational Teacher Employment Service

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for Southwest Ohio, presented the Grand Chapter meeting in St. Louis with a petition to establish the Omicron Chapter at the University of Cincinnati. 169 Twenty-five men were accepted and Dr. Joseph Strobel of the Delta Chapter was charged with delivering the charter and formally installing the chapter officers. Paul Schafer was elected President; Norman Henderson, Vice-President; George W. Winter, Secretary-Treasurer; Frank De Forrest, Historian and Harry Paine, Faculty Advisor. 170

In 1949, a record number of thirty-nine initiates were added bringing the roster to a total of 128 in the Omicron Chapter with Claude V. Couter, Superintendent of Cincinnati Schools and Carter V. Good, Dean of the University of Cincinnati's Teacher's College as honorary members.

In 1966, Donald L. Karr, a graduate student and a technical and industrial teacher educator, helped to charter the Alpha Gamma Chapter at The Ohio State University. The chapter and its fifteen charter members were formally installed on March 2, 1967 with the Omicron Chapter of Cincinnati and the Delta Chapter officiating.

Several Ohioans were active in the fraternity's national organization well before this time. In

169 Ibid., p. 156.
170 Ibid., p. 156.
fact, a number of state vocational education leaders including Dennis Price (1942-1943), Joseph Strobel (1948-1949), Aaron Adams (1957-1958), and Clyde Stiner (1962-1963) served terms as Grand Chapter Presidents.

Vocational Industrial Clubs of America. In 1952, with the encouragement of labor and management leaders and state vocational education officials, the Vocational Industrial Clubs of Ohio was founded.

As early as 1949, Robert Reese, State Supervisor Trade and Industry as president of the National Association of State Supervisors Trade and Industrial Education, appointed a subcommittee to study the desirability of establishing trade and industrial youth clubs in order to encourage initiative and recognize leadership in the students. It is therefore not strange that Reese, together with State Supervisor, Byrl Shoemaker; Ohio State University - Teacher Educator, George Brandon and District Supervisor, Phillip Anderson, should be appointed an ex officio member of the VIC-Ohio organizing committee. The regular members included Kenneth Herbert, Eric Williams, Elmer Baden, William Kelly, D. A. Morris and Paul Sherrick.

171 "Instructor Guide E-5, Sponsoring a Vocational Industrial Club" (Columbus, Ohio: Trade and Industrial Education, Division of Vocational Education, 1969), p. v.


173 "Instructor Guide E-5", op. cit., p. iii.
Third Annual
TRADE AND INDUSTRIAL WORK SHOP

August 1-13, 1949
Held at Ohio State University
Columbus, Ohio

C. STEINMETZ
Director of Training
Owens-Corning Fiberglas Co.
Newark

P. ANDERSON
District Supervisor
Lancaster

W. K. BARNHILL
Supervisor
Youngstown

W. BERNDT
Supervisor
Van Wert

T. DIETSCH
Supervisor
Hamilton

J. DOUGHMAN
Consultant
Instructional Materials O. S. U.

W. DUNTON
Supervisor
Plains

L. EFFLELY
Coordinator
Sylvania

J. KING
Supervisor
Dover and New Philadelphia

E. KINTLER
Related Instructor
Machine Shop
Norwood

M. LERNER
Supervisor
Ashland

J. MARQUIS
Supervisor
Findlay

C. PIERSON
Supervisor
Middletown

A. PLANT
Head Instructor
Zanesville

P. BITCHIE
Assistant Principal
Parker Vocational High School
Dayton

E. BOWE
Principal
Parker Vocational High School
Dayton

B. SHOEMAKER
District Supervisor
Findlay

L. B. VOORHEES
Director Pupil Personnel
Euclid

E. WILLIAMS
Supervisor
Marion

J. YONOVITZ
Supervisor
Portsmouth
Third Annual
TRADE AND INDUSTRIAL WORK SHOP

August 1-13, 1949
Held at Ohio State University
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DR. J. R. STROEBEL
Director of Vocational Education

ROBERT M. REESE
Supervisor of Trades and Industry

LAWRENCE BOROSAGE
Assistant Supervisor of Trades and Industry

DR. E. BOWMAN
Chief, Local Procedures
Bureau of Unemployment
Columbus

G. L. BRANDON
Public Service Training Consultant O. S. U.

H. CAMERON
Supervisor, Salem

W. CHAMBERS
Supervisor, Lima

R. DE FOREST
District Supervisor, Cincinnati

O. GWINN
Supervisor, Ironton

K. J. HERBERT
Supervisor, Barberton

C. HIGH
Job Training Instructor
Rural Electrification O. S. U.

W. KELLEY
Coordinator, Lancaster

J. MATIA
Head Dept. of Automobiles
Cleveland Trade School

C. MEISTER
Supervisor, Ashtabula

D. A. MORRIS
Supervisor, Elyria

V. H. OBERLANDER
Supervisor, Mansfield

F. D. SAINTE
Supervisor, Alliance

C. SCHAEFER
Coordinator, Sandusky

H. SEAMAN
Supervisor, Springfield

L. SELBY
Supervisor, Norwood
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A. PLANT
Bend Instructor
Zanesville

E. RITCHIE
Assistant Principal
Parker Vocational High School
Dayton

E. ROWE
Supervisor
Van Wert

E. WILLIAMS
Supervisor
Marion

J. YONOVITZ
Supervisor
Portsmouth

I. G. VONDERKLEES
Principal
Parker Vocational High School
Dayton
On February 22, 1952, sponsors and at least one student representative from each of seventeen different local Ohio vocational clubs met at The Ohio State University to charter the Vocational Industrial Club of Ohio.

While the local sponsors and school administrators were responsible for local club organization, the state-wide organization was directed by the State Supervisor of Trade and Industrial Education, a State Sponsor and the State Club Officers and Advisory Committee. Club membership was open to any student enrolled in full-time trade and industrial programs in Ohio under the funding of the federal vocational education acts.174

Under the leadership of Reese as State Club Advisor and Shoemaker as the State Sponsor, the aims and purposes of the Club were set out. These included:

1. To unite in a common bond students enrolled in trade and industrial programs in the various public schools of Ohio.

2. To provide opportunities for the development of leadership in civic, social and industrial pursuits among members.

3. To foster high ideals and appreciation for the dignity of work and employment in business and industry.

174 Ralph C. Neal, op. cit., p. 22.
4. To create among student bodies, faculty members, patrons of the school and persons in business and industry, a deep interest and esteem for Vocational Trade and Industrial Education.

5. To promote high standards of workmanship and scholarship.

6. To offer opportunities for and to stimulate interest in education and wholesome recreational activities.

7. To understand and encourage the practice of conservation of time, materials and money.\footnote{\textit{ibid.}, p. 23.}

In 1966, the Ohio group, together with similar organizations in other states, became formally associated in the Vocational Industrial Clubs of America (VICA). The national organization, like its Ohio forerunner, has as its goal furthering the personal development of students through "student-initiated civic, educational, professional and social activities supervised by his trade and industrial education teacher and administered by public school officials."\footnote{Ohio Association, \textit{Vocational Industrial Club of America, Official Handbook} (Columbus, Ohio, 1968), p. 1.}

Like the early apprenticeship programs, the VICA leadership conferences, awards, contests and leadership development publications are designed to "foster respect for the dignity of work, promote high standards in trade ethics, workmanship, scholarship and..."
safety; and develop patriotism by practicing democracy."  

The *Advance*, Ohio's bi-monthly VICA publication, is typical of others in the various states. While its chief function is to inform members of the state association's activities, it also serves as a vehicle for local club recognition and the creation of inter-club interest and co-operation.

These three organizations (i.e. O.V.A., I.L.S. and V.I.C.A.) and several other independent state and local groups working with them, not only generated interest in trade and industrial education, but also played a significant role in lobbying for a number of state and federal vocational bills during the period.

**Federal Legislation 1950-1969**

By 1956, there were one hundred and forty trade and industrial vocational education programs operating in Ohio. While this reflects an increase in the total number of programs established during previous years, a Vocational Staff Research Committee of the Division of Vocational Education revealed that the programs were concentrated in urban areas thus making the meeting of technical training needs highly dependent

\[\text{177Ibid., p. 1.}\]

\[\text{178Vocational Staff Research Committee for the Division of Vocational Education. *Meeting Ohio's Needs for Vocational Education* (Columbus, Ohio: State Department of Education, 1957), pp. 11-12.}\]
In the late 1950's and early 1960's, a series of federal laws covering everything from nurses' training to area re-development, manpower training and economic opportunity were passed. This continuation of the trend toward increased federal involvement which had steadily increased since the 1930's, helped to make the benefits of trade and industrial training available to a broader cross-section of the American people.

**Title III of the George Barden Act.** The OVA and several other state groups were among the first champions of area vocational school systems in the late 1940's. Nearly a decade later, in 1958, Title III of the George Barden Act was overwhelmingly passed in the House (212-95) and Senate (66-15).

Otherwise known as the National Defense Education Act, this was the broadest and largest educational act that had been passed in history. Over $1 billion was to be distributed on all levels of education so "that every young person, from the day he first enters school, should have an opportunity to develop his gifts to the fullest." This would be achieved through nine major programs.

---

1. Loans to students in institutions of higher education.

2. Financial assistance for strengthening science, mathematics and modern language instruction.


4. Guidance, counseling and testing; identification and encouragement of able students through state programs and counseling and guidance training institutes.

5. Language development through centers for research and studies and language institutes.

6. Research and experiment in more effective utilization of television, radio, motion pictures and related media for educational purposes.

7. Area vocational education programs.


9. Improvement of statistical services in state educational agencies.\(^{182}\)

A number of requirements were placed on the recipient states. The legislature, as in the case of the Smith-Hughes Act, had to approve state participation in the program. While the state was not required to prepare a preliminary overall plan, the U. S. Commissioner of Education had to approve outlines for the use of federal funds under the various titles, and after the first year, a strict matching of federal funds was enforced.\(^{183}\) It should be pointed out that the available money was not always utilized—especially

\(^{182}\text{Ibid.}, \ p. \ 1.\)

\(^{183}\text{Ibid.}, \ p. \ 23.\)
In regard to Title VIII. Table 3 summarizes Ohio's funds under this program for fiscal year ending June 30, 1959. (See page 136.)

While the NDEA was generally well-accepted, one section, Title VIII, became a source of minor controversy during the early years of its administration. This section stated in part:

That funds appropriated under Section 301 of this title be used exclusively for training of individuals designed to fit them for useful employment as highly skilled technicians in recognized occupations requiring scientific knowledge as determined by the State board for such State in fields necessary for the national defense. 184

Some labor representatives opposed it because they interpreted it to mean that workers would continue to be trained in single-skills as they were during World War II, thus not being properly prepared to become competent journeymen. Some private institutions opposed it because they feared the competition of the publicly supported program, and even some educators felt that this role was one vocational education was neither equipped nor prepared to handle adequately. 185

As these groups began to assist in the administration of the NDEA through advisory committees and other cooperative agencies, they managed to overcome their fears.

184J. Chester Swanson, op. cit., p. 97.
185Ibid., p. 97.
<table>
<thead>
<tr>
<th>Title</th>
<th>Total Federal Funds</th>
<th>Ohio's Appropriation or Allotment</th>
<th>Payment to State</th>
</tr>
</thead>
<tbody>
<tr>
<td>II</td>
<td>30,882,663</td>
<td>1,420,211</td>
<td>1,420,211</td>
</tr>
<tr>
<td>III</td>
<td>Auth. 70 mill.</td>
<td>Auth. 2,740,446</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Appr. 56 mill.</td>
<td>Actual allot. 2,192,356</td>
<td>2,192,356</td>
</tr>
<tr>
<td>IV</td>
<td>5.3 mill.</td>
<td>(state appropriations not identified)</td>
<td></td>
</tr>
<tr>
<td>V</td>
<td>Auth. 15 mill.</td>
<td>Auth. 778,664</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Appr. 7,400,000</td>
<td>Allotted 383,003</td>
<td>348,921</td>
</tr>
<tr>
<td>VI</td>
<td>Auth. 8 mill.</td>
<td>(state appropriations not identified)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Appr. 3,416,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VII</td>
<td>Auth. 3 mill.</td>
<td>over 4 year period</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Appr. 1.6 mill.</td>
<td>156,540</td>
<td>156,540</td>
</tr>
<tr>
<td>VIII</td>
<td>Auth. 15 mill.</td>
<td>160,043.00</td>
<td>80,555.00</td>
</tr>
<tr>
<td></td>
<td>Appr. 3,750,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>Auth. 2,750,000</td>
<td>12,215.00</td>
<td>12,215.00</td>
</tr>
</tbody>
</table>

NOTE: To qualify for Titles III and VIII State must have submitted a state plan.

to varying degrees, thus helping to insure the eventual success of the technical-training program.

**Area Re-Development Act.** In Spring of 1961, Congress took official notice of the growing problem of under- and un-employment in economically distressed areas and passed the Area Re-Development Act. The program, which was administered through the Secretary of Labor and the Department of Health, Education and Welfare, provided $4,500,000 annually for four years to be distributed to the state vocational educational agencies if possible, or to such public or private educational institutions as were contracted by HEW, to provide vocational training and re-training for under- and un-employed workers.\(^{186}\)

The Secretary of Labor was responsible for determining what training was to be given and to whom, and he also was charged with placing the trained workers upon completion of the program.

**Ohio Worker Training Act.** On the state level, Ohio took positive action to deal with rising rates of both employment and unemployment in 1961 with the passage of the Ohio Worker Training Act which is still functioning today.

\(^{186}\text{Ibid., p. 99.}\)
The direct outgrowth of a state-wide study, this act established the Ohio Worker Training Committee and made it responsible for training and retraining programs for the unemployed and the under-employed.\(^{187}\)

The emphasis was on local action and initiative. Each locality formed a worker training committee drawing representatives from the major segments of the economy. These groups, in turn, reviewed public school surveys of courses and facilities available and statistics from the Ohio State Employment Service to determine what skills were needed and which should be taught. The resulting recommendations, together with evidence that all sources of funding had been tried, were sent to the Ohio Worker Training Committee for consideration and possible action.\(^{188}\)

This committee included the Executive Director, Charles R. Curtin of the Ohio Bureau of Unemployment Compensation; two consultants, John F. Kostyo of Ohio State Apprenticeship Council and Byrl R. Shoemaker of the Ohio Division of Vocational Education; and ten members. The members were Chairman Willard P. Dudley, the Administrator of the Ohio Bureau of Unemployment

\(^{187}\)Ohio Worker Training Committee. New Skills for Tomorrow! (Columbus, Ohio: Columbus Blank Book Company, 1966), p. 3.

\(^{188}\)Ibid., p. 7.
Compensation; State Senator John Bowen; State Superintendent of Public Instruction Martin Essex; industrialist Theodore Haas of Cleveland; State Senator Calvin C. Johnson; Columbus Attorneys Walter J. Mackey and Warren J. Smith; State Representatives Anthony J. Russo and Margaret Dennison; and William O. Walker, the Director of the State Department of Industrial Relations.  

Manpower Development and Training Act. Under the Manpower Development and Training Act, passed in 1962, the Secretary of Labor became the census-taker of the shifting employment needs and resources. Based on his report, the Department of Health, Education and Welfare established training programs for those whose skills had to be up-graded and the un-employed in order that they might find employment in a field where their skills were marketable.

Trainees were chosen and referred to the Department of Health, Education and Welfare by the Secretary of Labor. If the state vocational education agencies and public schools could not provide the prescribed training, HEW was once more authorized to issue contracts to private educational institutions.

During the first two years, the federal government bore the total cost of the program. In the third

189Ibid., insert.
and final year, the states were required to secure matching funds. In addition to paying all costs associated with the establishment of the necessary courses, during the first two years, the federal government also paid the trainees, who were, at best, under-employed, a subsidy for up to fifty-two weeks during which they were completing their training.\textsuperscript{190}

\textbf{The Economic Opportunity Act.} In an effort to develop the potential of the less fortunate in the society, thereby utilizing the human and financial resources of the country and combating poverty, a series of special programs were instituted under the provisions of the Economic Opportunity Act in 1964. These included the jobs corps, the working-training program, the work-study program, adult basic education programs, a program to assist migrant and seasonally employed agricultural employees and work-experience programs.\textsuperscript{191}

\textbf{Construction of Vocational Education Facilities.} Three basic federal laws, the Higher Education Facilities Act of 1963, the Higher Education Act of 1965 and the Appalachian Regional Act of 1965, provided for the construction of vocational education facilities. The first two acts dealt with the construction of undergraduate, junior college and technical institute facilities. The

\textsuperscript{190}\textit{Ibid.}, p. 100.

\textsuperscript{191}\textit{Ibid.}, pp. 113-114.
latter referred to bringing necessary vocational training facilities to the people in the economically depressed areas of Appalachia which included a large section of eastern and south-eastern Ohio.

Vocational Education Act of 1963. Essentially, the Vocational Education Act was an extension of the Smith-Hughes Act, the George Barden Act the NDEA, and the facilities acts mentioned above designed to:

A. Extend present programs and develop new programs of vocational education.

B. Encourage research and experimentation.

C. Provide work-study programs to enable youth to continue vocational education.192

The yearly appropriation, beginning at $64 million and increasing to a maximum of $225 million in 1967, was distributed to the participating states on the basis of a formula dependent on population rating and the per capita income, with ten percent reserved for grants to the state boards and institutions.193

Once the state had submitted a state plan, the federal funds (which were strictly matched after 1965) could be used for the establishment of non-baccalaureate vocational education courses, teacher education, and construction of vocational education facilities.


193 Ibid., pp. 136-138; J. Chester Swanson, op. cit., p. 108.
having learned the advantages of co-ordination under the War Production Training Acts, the federal government also stipulated that each state plan must contain a co-operative agreement between the state employment agency and the state vocational education administrators for information exchange regarding labor's needs and resources.

In 1965, a special authorization of $30 million was approved under this act for a work-study program. This was increased to $50 million in 1966 and reduced to $35 million a year in 1967 and 1968. The money was distributed to the states dependent on the proportion of youths fifteen to twenty years old who were full-time students. After 1965, the states had to match twenty-five percent of this special allotment, and the total received by any student was not to exceed $45 per month.194

Vocational Education Amendments of 1968. The Vocational Education Act of 1963 also provided for the appointment of a national advisory council to study the vocational education program and make recommendations concerning its administration and possible necessary legislative changes.

In 1968, the twelve member council, under the chairmanship of Martin W. Essex, Ohio's Superintendent

194 Ibid.
of Public Instruction, completed its general report. Of the twenty-three recommendations, three eventually became the basis for the Vocational Education Amendments of 1968. These included:

A. Making funds and permanent authority available to develop and operate new and expanded vocational educational programs and services specifically designed for persons who have academic, social, economic or other handicaps.

B. Providing permanent authority for work-study and work experience programs in secondary schools and those at the post secondary levels related to vocational and technical education.

C. Making funds and permanent authority available for the Commissioner to make grants to State boards of vocational education and, with the approval of the State board, to colleges and universities, and/or to public educational agencies to construct facilities and operate residential vocational schools.195

A total of $395 million was appropriated for fiscal year 1968-1969, to be distributed to the various states on the basis of youth population formulas. The funds were made available through grants issued by the U.S. Commissioner of Education, and the money could be used by eight direct categories of vocational education expenditures:

A. Vocational education programs for high school students, including such programs as are designed to prepare them for advanced or highly skilled post secondary vocational and technical education.

B. Vocational education for persons who have completed or left high school and who are available for study in preparation for entering the labor market.

C. Vocational education for those who have already entered the labor market and need additional training or re-training, excluding those who came under the provisions of the Manpower Training, Area Re-Development and Trade Expansion Acts.

D. Vocational education for the physically, academically and socio-economically handicapped.

E. Construction of area vocational education school facilities.

F. Vocational guidance and counseling designed to aid persons in the selection of, and preparation for, employment in all vocational areas.

G. Provision of vocational training through arrangements with private vocational institutions where such private institutions can make a significant contribution to attaining the objectives of the state plan and can provide substantially equivalent training at a lesser cost, or can provide equipment or service not available in public institutions.

H. Ancillary services and activities to assure quality in all vocational education programs (i.e. teacher training and supervision, program evaluation, special demonstration and experimental programs, development of instructional materials and improved state and local vocational education programs and services in light of information regard-
ing current and projected manpower needs and job opportunities.\textsuperscript{196}

By 1969, the federal government had moved a long way from the Morrill Act of the 1800's. It had, in effect, accepted and expanded its responsibility for a program of vocational education which was designed to strengthen the country both materially and economically.

CHAPTER VI
TRADE AND INDUSTRIAL TEACHER EDUCATION

In order to supply trained teachers to meet the demands of the steadily increasing number of trade and industrial education courses, two things had to be done: 1) money had to be secured to establish college level professional education classes, and 2) standards had to be established for certification of the teachers.

Early Trade and Industrial Teacher-Training in Ohio

In the early 1900's, the U.S. Office of Education made a series of recommendations based on an evaluation of the first Douglas Commission's report. They concluded:

...The vocational schools (should be) planned to train prospective artisans, craftsmen and homemakers for specific vocational callings (just) as the normal schools (were) planned to train prospective teachers.197

Once the programs were established, vocational education was faced with a new problem—where would the necessary number of qualified teachers be found? Since

197J. Chester Swanson, op. cit., p. 20.
the emphasis to date had been mainly literary, wouldn't the teachers, even those trained in the normal schools, be ill-equipped to provide high quality, or even adequate, vocational training?

The Honorable Chester R. Davis, a member of the House Committee on Expenditures in the State Department, summarized the problem in a letter to Dr. William T. Magruder:

January 28, 1909

"It is manifest that the State normal schools are not giving as broad training to those they are preparing to teach as will be required when industrial subjects are added to our secondary and lower schools generally.

For instance, Ohio is establishing a large number of consolidated rural schools. These schools for the present are manned for the larger part with teachers from secondary and collegiate schools which have only the traditional subjects in hand.

In 1907, Davis' perception of the vocational teacher-training situation led him to spear-head the House fight for passage of the Nelson Amendment. This act granted each agricultural college $25,000 annually to be used for training teachers in agriculture, mechanic art and home economics courses in the lower schools.

Two years later, Davis introduced a bill to supplement and broaden the Nelson Amendment. Unfortunately, many fellow Representatives did not share his conception of the urgent need. The Davis Bill,
which for the first time described mechanic art, agriculture and home economics courses as "vocational," died in the House Agriculture Committee. 198

Teacher-Training Requirements of the Smith-Hughes Act

It wasn't until 1917 that Congress again took a significant step forward in providing assistance to vocational teacher-training programs.

Under the provisions of the Smith-Hughes Act, the federal government provided $3.1 million in teacher-training funds between 1918 and 1922. This money, and an additional $1 million each succeeding year, was distributed to the states on a population basis.

In order to receive the minimum $10,000 a year under the federal program, certain basic requirements written into the Smith-Hughes Act had to be met:

A. The State Board had to provide a plan to instruct the prospective teachers through publicly controlled classes.

B. The training could be offered only to people who had or were then in the process of acquiring vocational experience or contact in the line of work they were preparing to teach.

C. The State Board had to draw up minimum requirements defining "adequate vocational experience," and

198Ibid., p. 75.
Ohio's Certification Requirements

Ohio's first state plan to incorporate a program of teacher-training was approved in 1920. This plan stated:

The Ohio State Board of Education will train teachers for trades and industries through staffs of teachers attached to approved installations in the large cities of the state.\[199\]

Further, 256 clock hours of vocational education courses were required for a man with "sufficient vocational experience" before he could teach his trade.

For shop teachers, who had to have two years of experience beyond apprenticeship, these courses included such things as trade English, trade mathematics, theory of teaching trades, trade practice teaching, trade drawing, trade science, theory and administration of vocational education, and trade analysis and opportunities for observation.\[200\] Each course met for one hour each week for thirty-two weeks.

Related subjects teachers (i.e. math, science or drawing) had to be graduates of engineering colleges or have at least two years of technical school experience.


\[200\] Ibid., p. 67.
In both cases, an additional year of actual trade experience was also required. If the prospective teacher was a high school graduate with three years of trade experience, he could become a related subjects teacher only upon the recommendation of the director of teacher training and consideration by the State Board. They were also required to complete 256 hours of professional courses as outlined by the State Board and shop experience as necessary.

The instructors of the teacher training courses themselves were members of the regular teacher-training staffs of the various approved training centers. (See the following section.)

By 1937, the State Plan outlined certification requirements which reflected the growth of the teacher-training movement during these pre-war years.

The Board declared that after June 30, 1930, any man being considered for a teacher-improvement instructor position should "show evidence of good character and have personal characteristics which fit him as a leader of groups of men." While the 25-to 45-year-old applicant did not have to be a graduate of a

201Ibid., p. 68.

202The State Plan for Vocational Education, Reprint of the Trades and Industries Section Only (Columbus, Ohio: Department of Education, Division State Board for Vocational Education, December 10, 1940), p. 38.
recognized college, he was required to have at least 540 clock hours of professional education courses. He was also expected to have at least three years of experience in his trade as well as two years of trade and industrial teaching experience and three years of work in either a supervisory or administrative role in trade and industrial education. (It should be noted that the qualifications for these teacher educators are virtually identical to those for State Supervisor of Trade and Industrial Education discussed in Chapter IV.)

Shop instructors, in addition to meeting the age and character standards mentioned above, were required to:

A. have four years of apprenticeship training and three years of approved journeyman experience in the trade he would teach, and

B. have completed at least two years of high school or its equivalent in a recognized institution.\textsuperscript{203}

If the shop teacher had at least one year's experience in the manipulative side of the trade and had graduated from an accredited high school or its equivalent, he was also qualified as a related subjects instructor.\textsuperscript{204}

While both the shop and the related subject teachers were directly concerned with fitting youths

\textsuperscript{203}ibid., p. 43.

\textsuperscript{204}ibid., p. 44.
for useful work, the part-time general continuation instructors had a somewhat broader task. Through civic, social, cultural, economic and health courses, they were to "contribute to the general vocational intelligence and guidance of the student," thereby providing a basis for more complete understanding of their duties and responsibilities as future citizens.205

To enter this field, a teacher had to be between the ages of 25 and 45 and show evidence of good personal character. Professionally, his experience had to be of a social vocational nature and he had to be a high school graduate with at least two years of college experience.206

Under the provisions of the 1942 State Plan for Vocational Training for War Production, one year temporary vocational certificates were issued by the state, and local level teachers were appointed by their respective boards of education "subject to the standards prescribed in the State Plan and subject to the review and approval of the State Director of Vocational Training for War Production Workers."207

In order to be certified, the applicant had to

205Ibid., p. 49.
206Ibid., p. 49.
207State Board for Vocational Education. State Plan for Vocational Training for War Production Workers. Columbus, Ohio. 1942.
show proof of recent and actual industrial experience, be acceptable to the local advisory committee, be able to train people for new jobs and believe in the war production program's aims.²⁰⁸

The relaxation of professional education requirements during this period represents a recognition of the fact that single skill production workers could best be taught by instructors who were recruited directly from war production jobs. It also made it possible for local administrators to ease the critical shortage of teachers through a variety of methods. For instance, in Cleveland, the shortage of instructors for the aircraft program reached a point where the most outstanding trainees of the early war production programs were given intensive short courses in teacher-training methods and assigned as assistant instructors.²⁰⁹

By the 1950's, the Division of Vocational Trade and Industrial Education of the State Board of Education had evolved a more definite and more detailed program leading to the permanent certification of trade and industrial teachers.

By 1968 we find that basically, all prospective trade and industrial teachers had to attend a one-week pre-service workshop during the summer just prior to the

²⁰⁸Ibid.
beginning of the school year in which they were to begin teaching. That school year, in addition to three more like it, finds the new trade and industrial teacher involved in in-service training consisting of critical observation, supervision and progressive academics designed to broaden his teaching expertise. For this he receives 200 clock hours of credit which is equivalent to approximately sixteen quarter hours of college credit if he makes application for same at the teacher education center from which he receives his training. During these first four years he is issued temporary teaching certificates which indicate to his institution that he is making satisfactory progress toward attaining professional status. (See Table 4.)

Those people with college degrees in unrelated areas may be expected to follow in the same steps as those who do not have a degree, the exception being college grads with teacher training certificates in other areas—their training is limited to two years.

After teaching for twenty-four months on the provisional certificate and completing nine semester hours of trade and industrial courses and nine semester hours of general college courses, the Board issues an eight year professional certificate.

The permanent certificate is issued after the applicant has completed forty months of teaching on the professional certificate and received a college degree.
TABLE 4

STEPS IN TRADE AND INDUSTRIAL EDUCATION CERTIFICATION PROCEDURES

Regulations covering ALL teachers new to trade and industrial education.

a. All new trade and industrial teachers must attend the pre-service workshop.
b. All new trade and industrial teachers will receive a minimum of two temporary certificates.
c. The district teacher trainer must approve ALL work taken toward T. & I. certification.

<table>
<thead>
<tr>
<th>PREPARATION FOR TRADE AND INDUSTRIAL TEACHING</th>
<th>TEMPORARY CERTIFICATION</th>
<th>FOUR YEAR PROVISIONAL</th>
<th>EIGHT YEAR PROFESSIONAL Issued upon completion of the following:</th>
<th>PERMANENT CERTIFICATE Issued upon completion of the following:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>50 clock hrs. of in-service work per year</td>
<td>Issued upon completion of the following:</td>
<td>Teaching Experience on Provisonal Certificate</td>
<td>College Credit</td>
</tr>
<tr>
<td>1. No college credit</td>
<td>(years)</td>
<td>(clock hrs.)</td>
<td>(months) (semester hrs.) (college hrs.)</td>
<td>(months)</td>
</tr>
<tr>
<td>2. College training but no degree</td>
<td>4</td>
<td>200</td>
<td>24 9 9 90</td>
<td>College degree</td>
</tr>
<tr>
<td>3. B. S. or A. B. degree</td>
<td>2</td>
<td>100</td>
<td>24 9 9 40</td>
<td>College degree</td>
</tr>
<tr>
<td>4. M. A., M. S., or M. Ed. degree</td>
<td>2</td>
<td>100</td>
<td>24 9 9 90</td>
<td>College degree</td>
</tr>
</tbody>
</table>

NOTES:

* Any secondary teaching certificate may be converted to a like Trade and Industrial Education certificate upon the completion of the first two years of in-service teacher education.
* Special schools not included as a part of the teacher's original preparation for trade and industrial teaching may be evaluated by the district teacher trainer as applying toward a part of the requirement of 18 semester hours of college credit for the Professional Certificate.
**E.P.D.A.**

The developments on the state and local level which gradually led to this program of permanent industrial and trade teacher certification can be seen in the evolution of the college-level teacher-training programs from 1917 to 1969.

**Reports of Trade and Industrial Teacher-Training**

The success of the various teacher-training programs being established at the four major centers can be partially summarized in the growing numbers of qualified instructors who were made available through them.

Between 1918 and the early 1940's, the number of in-school and adult trade and industrial instructors in Ohio steadily increased as the following table indicates.

**TABLE 5**

<table>
<thead>
<tr>
<th>Year</th>
<th>In-School</th>
<th>Adult</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1918</td>
<td>30</td>
<td>60</td>
<td>90</td>
</tr>
<tr>
<td>1920</td>
<td>35</td>
<td>290</td>
<td>325</td>
</tr>
<tr>
<td>1925</td>
<td>170</td>
<td>325</td>
<td>495</td>
</tr>
<tr>
<td>1930</td>
<td>330</td>
<td>425</td>
<td>755</td>
</tr>
<tr>
<td>1935</td>
<td>370</td>
<td>550</td>
<td>930</td>
</tr>
<tr>
<td>1940</td>
<td>625</td>
<td>1025</td>
<td>1650</td>
</tr>
<tr>
<td>1945</td>
<td>600</td>
<td>350</td>
<td>950</td>
</tr>
<tr>
<td>1949</td>
<td>525</td>
<td>650</td>
<td>1170</td>
</tr>
<tr>
<td>1959-60</td>
<td>334</td>
<td>1100</td>
<td>1434</td>
</tr>
</tbody>
</table>

*Ohio Trade and Industrial Service, Program Analysis Chart #2, Columbus, 1958.*
The supply of trade and industrial teachers in Ohio in large measure reflects the national demands of war and peace-time production. In 1940, the total number of teachers nearly doubled as the pressures of war preparedness and the effects of the first War Production Acts were felt. In 1945, there was a sharp drop, especially in the number of adult course instructors.

The nationwide transition back to a peace-time economy brought with it a reduction in the demand for production workers which seems to have reached its zenith between July of 1943 and June of 1944. With fewer people needing to be trained, there was a corresponding decrease in the number of instructors required. Therefore, in response to the provisions of the 1944 Reconversion Act, nearly 700 fewer trade and industrial teachers were active in Ohio than had been in 1940.

In 1949, the number of in-school teachers decreased slightly, but the addition of approximately 300 adult education instructors accounted for a significant increase in the total number of active trade and industrial teachers. This seems to indicate the successful post-war readjustment of Ohio's trade and industrial education program. It also signals the beginning of a decreasing emphasis on in-school training as opposed to adult education which become even more marked as Ohio enters the 1960's. (In the 1959-1960 fiscal year, a
full 38.4% of all funds for teacher-training were expended for adult education.

According to figures compiled by Dr. Robert M. Reese of The Ohio State University, the total number of trade and industrial teachers, including supervisory personnel, steadily increased.

**TABLE 6**

**TOTAL NUMBER TRADE AND INDUSTRIAL TEACHERS INCLUDING SUPERVISORY PERSONNEL 1950-1968**

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1951</td>
<td>925</td>
</tr>
<tr>
<td>1952</td>
<td>1124</td>
</tr>
<tr>
<td>1953</td>
<td>1132</td>
</tr>
<tr>
<td>1956</td>
<td>1402</td>
</tr>
<tr>
<td>1957</td>
<td>1587</td>
</tr>
<tr>
<td>1958</td>
<td>1597</td>
</tr>
<tr>
<td>1963</td>
<td>1852</td>
</tr>
<tr>
<td>1964</td>
<td>2012</td>
</tr>
<tr>
<td>1965</td>
<td>1467</td>
</tr>
<tr>
<td>1968</td>
<td>2267</td>
</tr>
</tbody>
</table>


During this same period, the Trade and Industrial Service of the State Board of Education’s Division of Vocational Education reported rising allocations of funds for the state teacher-training program.
TABLE 7

TOTAL ALLOCATIONS (STATE & LOCAL MATCHING)
FOR TRADE & INDUSTRIAL TEACHER-TRAINING
AND SUPERVISION IN OHIO 1953-1968*

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1953-54</td>
<td>109,760.12</td>
</tr>
<tr>
<td>1954-55</td>
<td>110,209.21</td>
</tr>
<tr>
<td>1955-56</td>
<td>122,868.13</td>
</tr>
<tr>
<td>1956-57</td>
<td>123,194.81</td>
</tr>
<tr>
<td>1957-58 (estimate)</td>
<td>145,503.21</td>
</tr>
<tr>
<td>1964-65</td>
<td>243,942.00</td>
</tr>
<tr>
<td>1967-68</td>
<td>232,275.00</td>
</tr>
</tbody>
</table>


While the number of teachers in trade and industrial programs increased steadily, Reese's figures indicate the number of teacher trainees grew somewhat more sporadically and the number of teachers enrolled in formal teacher-training courses seemed to fluctuate.

TABLE 8

TOTAL NUMBER OF TEACHER TRAINERS AND TEACHERS
ENROLLED IN ORGANIZED TEACHER-TRAINING
COURSES AT MAJOR TRAINING CENTERS

<table>
<thead>
<tr>
<th>Year</th>
<th>Teacher-Trainers</th>
<th>Number of Enrolled</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>14</td>
<td>444</td>
</tr>
<tr>
<td>1951</td>
<td>13</td>
<td>581</td>
</tr>
<tr>
<td>1952</td>
<td>11</td>
<td>584</td>
</tr>
<tr>
<td>1953</td>
<td>14</td>
<td>524</td>
</tr>
<tr>
<td>1956</td>
<td>22</td>
<td>449</td>
</tr>
<tr>
<td>1957</td>
<td>15</td>
<td>337</td>
</tr>
<tr>
<td>1958</td>
<td>17</td>
<td>518</td>
</tr>
<tr>
<td>1968-69</td>
<td>26</td>
<td>863</td>
</tr>
</tbody>
</table>
Eleven of these are employed by the State Board. (i.e. University of Toledo, Kent State University, University of Cincinnati, The Ohio State University.)

*Drs. Reese and Karr of The Ohio State University do not function as teacher trainers on a full time basis, thereby accounting for the "½" figure.

In summarizing the work of the State Boards in 1960, the U.S. Office of Education reported not only a marked shortage of teacher-trainers, but also a shift in the states' emphasis in their programs to train such people.

A shortage exists of teacher-trainers in trade and industrial education. Because of the various responsibilities that must be assumed by those assigned teacher training responsibilities, their effective manpower, in terms of time spent in training trade and industrial teachers, is frequently limited. As a result, efforts exerted in the teacher training services are devoted mostly to the preparation of full-time teachers. For the most part, the training of part-time teachers for occupational extension classes and apprentice-related instruction programs is minimal.210

As trade and industrial education programs expanded in the early 1960's, new teacher-training problems arose. Earlier a basic in-service training system had been established based on a regular program of visitation to the individual local communities and teachers.

210 Digest of Annual Reports for 1960, p. 47.
By 1964, the Trade and Industrial Education Service was faced with the dilemma of providing what had proven to be effective individual in-service training to teachers and still serving the additional teachers required by the rapidly expanding state trade and industrial program without increasing their personnel.\textsuperscript{211}

To solve this problem, the state teacher education staff began to conduct group seminars as part of a pre-service training program for prospective teachers. In 1964 alone, forty-five full-time and ninety-four part-time teachers benefited from this program. The experience gained in these early pre-service and in-service programs led, in 1969, to a pilot accelerated teacher education program which came about through the 1968 Amendments under the more sophisticated Educational Professional Development Act. Under its provisions, the prospective teachers are involved in a four to six week pre-service seminar course followed by two years of intensified critical observation, supervision and training. This intensive teacher-training program is worth 200 clock hours of credit toward the attainment of a provisional vocational education certificate. (See preceding sections.) The participants also receive $75 per week during the

\textsuperscript{211}\textit{Annual Descriptive Report, Section V - Trade and Industrial Education. State of Ohio, Year Ending June 30, 1964}, p. 8. (Mimeo.)
summer pre-service session, which includes travel money for one round trip from their home to the teacher-training center.

Today, Ohio's teacher-training program is one of the soundest and most successful in the nation. Its graduates go on to provide outstanding trade and industrial education for the hundreds of men and women who enter America's technical job market each year.
CHAPTER VII
ESTABLISHMENT AND DEVELOPMENT OF TEACHER TRAINING CENTERS

Establishing teacher education centers in Ohio was a fairly easy matter for many of the colleges and universities were already involved in various types of industrial training. However, problems became apparent when an attempt was made to formally bring about some semblance of organization and administration. In this chapter we will take into consideration the historical development of the four teacher training centers of The Ohio State University, Cincinnati University, Toledo University and Kent State University including Akron University.

Since many of The Ohio State University's course offerings and services are state-wide in scope, detailed study of their development and organization can be combined with the historical background of the other four centers to provide a comprehensive picture of teacher-training throughout the state.

The Ohio State University, a land grant institution established in 1870 on the old Neil farm near Columbus was chosen as the first vocational teacher
education center in the state. Aside from the fact that it was the state's largest institution, we must also take into consideration its proximity to the capital city, in addition to the fact that two of three appointed state supervisors were already functioning as OSU faculty members.

We can assume that for the first year or so E. L. Heusch, the first state supervisor of trade and industrial education, was a combination administrator and teacher educator for the whole state. It is not until 1921 that Professor D. J. McDonald arrived on the scene as head of commercial and vocational education aided by Assistant Professor Sylvia Sicha and Miss Ramsdell. Professor McDonald and Miss Sicha were not new to the field of vocational education since both had been functioning in vocational programs as faculty members at University of Cincinnati since 1917. Since the Cincinnati programs were not yet being funded, Heusch decided to bring McDonald and Sicha to The Ohio State University campus in order to benefit from their experience in the initiation of course offerings. From 1921 to the middle of 1925, we can assume that the University was now receiving federal monies for their vocational programs. Vocational teacher training programs, in addition to the established in-plant industrial teacher-training programs, were initiated. The industrial in-plant teacher or supervisor training programs were not
new to the University since there is evidence that mechanical engineering had been involved in this type of education prior to 1914.

It is recorded that The Ohio State University was cut off for a number of years from federal vocational funds for some infraction of the funding law by the people responsible for administering the program.

The 1925-1926 catalog lists a Professor Frederick Horridge and William H. Stone at the helm of the Vocational Education Department. From 1926 to 1929 would seem to be vocational education's "darkest hour" on The Ohio State University campus because all courses completely vanish from the school's catalog. If vocational courses are listed, they are only offered during the summer months with visiting professors doing the teaching.

In the final analysis we find that this non-productive period was not brought about through the lack of interest or national apathy, but rather by reassessment and reorganization as the following annual reports indicate:

1927-28 Annual Report

Industrial Arts, Vocational, and Commercial Education are organically related. They go together. Neither is complete without the others.

The history of Commercial and Vocational Education on this campus is not altogether a happy one. The field of Commercial Education represents a large and important area of public school service. A statistical investigation made by Mr. Runkle several years ago
shows that one-third of the courses that are offered in the Ohio high schools are courses in Commercial Education. This represents, perhaps, a larger if not more important fraction of teaching in the secondary schools than any other one cognate group of subjects. In recommending a program for the development of commercial teachers, it is clearly evident that a large area and not a limited, restricted area is to be served. A curriculum for the training of commercial teachers has been approved and has been announced in the offerings of the College. No provisions, however, have been made for carrying the curriculum into effect.

The State Department has, from time to time called attention to the State's responsibility in providing properly trained teachers for commercial courses. Thus far, the public schools have been dependent upon private business colleges whose interest in teacher training is a side issue. This condition is comparable to an outgrown condition which previously prevailed in the preparation of students for law and medicine. The State Department cannot raise the standards of preparation of commercial teachers when State teacher-training agencies fail to provide for such training.

With a minimum of expenditure our program for the training of commercial teachers would be made effective, since such program naturally and normally belongs to the Department of Industrial Arts. The organization of a new department would be unnecessary. In view of the cognate relationships of the three lines of work referred to, in view of the existence of the Department of Industrial Arts, and in view of the scattered condition of both Vocational and Commercial Education, it would seem appropriate that unification should be brought about in this entire area of service.

1928-29 Annual Report

No report on general progress of practical phases of teacher preparation accomplished or hoped-for, may be complete without stress upon the desirability for clarifying this whole situation by replacing the two departments with one Department of Practical Arts and Vocational Education. What appear to be salient considera-
tions in this matter have been rather fully stated in budget memorandum, and referred to also in the section devoted to improvement of instruction hereafter.

However, the gravity of professional issues at stake is so great the re-emphasis is here undoubtedly may be more than justified. As shown fully in budget memorandum, a minimum of vocational industrial offerings is possible even without added staff; although the University surely cannot afford to disregard more comprehensive facilities for vocational education, including commercial. Especially graduate facilities and fundamentals of guidance in all teacher preparation appear imperative.

Industrial Arts Education, as now conceived, and Vocational Education are comparative newcomers in the public-school program. In the past teachers and others in the personnel of these phases of education have been drawn largely from industry—hence have been craftsmen rather than educators; in fact, not a few have been entirely without formal professional preparation, and altogether too many have continued so. With these phases of education firmly established in the public-school program, the need for professionalization is very great, in the way of preparation of new teachers, in the upgrading of those already employed, and in research. While the first two needs mentioned are being provided in a limited way from various centers throughout the state, the public schools have come to look to the University for leadership too generally to make an exception in the case of vocational teacher preparation.

In research, the demand for continuation of graduate facilities here is even more insistent; in fact, this is the only institution in the state with facilities equal to the needs of creditable service of this type. It may be said with fairness to all concerned that, if vocational offerings on the graduate levels should be dropped by the University, the state would be effective leadership in vocational research. And the case is, if anything, even stronger for commercial education, since outside of the University the schools have only the private business colleges to look to for professional preparation of teachers, and no place within the state to look for supervisors and directors.
The 1929-30 school year would seem to be the year that marks the end of disorganization and confusion within the ranks of trade and industrial education. (Although later, we will note that this is not to be the case.)

Hope at this point is manifest in the fact that the newly formed department of Practical Arts and Vocational Education is now in the hands of some very capable gentlemen, namely, Professor Stone, Associate Professor Warner, and Assistant Professor Smith. Previously, Smith and Warner had been listed as part of the faculty under Industrial Education (Manual Arts).

This new attempt to create some kind of an educational concept that was somewhat occupationally oriented was brought to light in view of the major and minor offerings in Commercial Education, Industrial Arts and Vocational Education.

The fall catalog of the 1930 school year lists over fifty course offerings within the realm of Practical Arts and Vocational Education—progress at last, or so it would seem.

**Trials and Tribulations**

The Ohio State University was to undergo some rather unique experiences in courses, personnel and administrative processes. The University's catalog
listings of vocational courses is somewhat dubious in nature. For an example, in 1916-17, a four-year manual training degree is offered with only five courses offered in the subject matter.

  #111 Teaching Manual Training
  #112 Materials, Methods and Equipment
  #117-18 Construction Design
  #121-22 Hand Work for Supervisors
  #123 Special Problems in Manual Training

The 1920-21 student catalog combines industrial education with manual training. Lab courses can be taken in the shops of industrial engineering or mechanical engineer (pattern shops, foundries, machine shop, etc.).

A two-hour course in vocational education is listed in the curriculum under School Administration. A description of the course is not given.

In the school year of 1921-22, we see a new combination come to light in the form of a "Vocational and Commercial Education" title for the following courses:

  #601 Organization of Vocational Education
  #602 Problems in Part Time Education
  #603 Problems and Principles of Vocational Education
  #604 Fundamentals of Vocational Teaching
Juvenile Employment and Vocational Guidance

Curricula for Commercial Courses

Problems in Commercial Courses

In the 1922-23 school year, in a move to the College of Education, this area is given a new title—"Industrial Education (Manual Arts) and Shop Work."

No course work is listed, but #608, "Administration of Vocational Education," is again listed under School Administration curriculum. Course description: "3 credit hours, 3 lectures a week, assigned readings, investigation and reports, open to seniors and graduates. Note: Course will not be offered next year."

Teacher education for distributive education was projected, but abandoned because of no enrollment.

The 1923-24 catalog lists absolutely nothing in the way of vocationally designed courses.

Course #627 now appears under the School Administration curriculum as "Administration of Vocational Education," yet vocational education is for the first time listed as a department of instruction.

Eighteen courses are listed in this 1924-25 catalog in this new department's offerings. Same for 1925-26.

The 1926-28 catalogs list only summer offerings.

In 1928-29 we see twenty courses being offered,
yet instructors are not listed which would lead one to believe that if enough people wanted a class, an instructor would be found to teach it.

Thirteen courses were offered during the summer months by visiting instructors.

The 1929-30 catalog notes yet another change of title to that of "Practical Arts and Vocational Education."

Twenty-five courses are offered in commercial education, industrial arts and vocational education.

Extrication

Drs. Smith and Stone are noted to have filled in the time between 1931 to 1949 with a mature leadership that seemed to have a steadying effect upon the total vocational program.

In the years 1930-32, course offerings number 50-52 each year.

School year 1932-33 catalog now lists all courses under the College of Education under a major heading of "Practical Arts and Vocational Education"--parts of the previous offerings are now offered as partial listings under industrial education, commercial education, guidance and practical arts and vocational education. (Industrial arts offerings to all intent and purposes are now listed under industrial engineering.)
In 1933-35, basically the same pattern of course listings existed.

In the 1939-40 catalog is noted that the term "Industrial Arts Education" is now being used instead of "Practical Arts and Vocational Education."

Commercial education also has a separate listing.

Course #641 - "The History of Vocational Education" - is the only course listed that retains the vocational terminology. All others have been integrated or absorbed under new classification.

The 1944-45 school year notes another change in the catalog because the title is now "Vocational Trades and Industries"—a curriculum designed for certification purposes. Course listings:

#575  Job and Trade Analysis in Trade and Industry
#576  Organization of Instructional Material in Trade and Industries
#577  Methods of Teaching Trades and Industries
#578  Vocational Tests and Measurements in Trade and Industries
#579  Shop Management in Trade and Industries
#580  The Conference Method of Teaching in Trade and Industries

Dr. Joseph Strobel's tenure between, 1949 and 1951, in addition to the employment of Dr. George Brandon as a consultant on public service training,
increased the stature of vocational education at The Ohio State University. The trend was toward more and more teacher education for occupations within industry. Dr. Brandon served in this capacity for six years, contributing greatly to an organizational training format that is still being utilized to some extent in the public service field of education.

In 1949-50, all of the above courses were listed, but a note stated that they were not being offered this year.

Organizational Refinement

Dr. Robert M. Reese, former state supervisor of vocational trade and industrial education, was employed in 1954 as the first Director of Trade and Industrial Services at The Ohio State University. In 1968, he was made department chairman of Vocational-Technical Education—a position he still holds. His leadership, organization and management expertise have literally put The Ohio State University and the State of Ohio on the map in regard to vocational education on a national level. As an example of some of his leadership roles, he has served for the past five years as the Executive Director of the Ohio Vocational Association (O.V.A.) in addition to serving a term as the "national membership secretary" of the American Vocational Association (A.V.A.).
As head teacher of Trade and Industrial Education at O.S.U., he has been of service on many committees, both as a panel member and consultant, at the local, state and federal levels. He has been instrumental in the refinement of the pre-service and in-service teacher education training manuals for vocationally competent teachers in general fields.

For school year 1954-55, vocational courses are now listed under Trade and Industrial Education. Basically, the offerings are the same as 1944-45 with the addition of:

#695 Problems in Teaching and Supervising Trade and Industrial Education for Out-of-School Youths

#717 Survey of Vocational Education

Between 1960-1969 a switch is denoted from the former catalogs to the college bulletin. Trade and Industrial Education is still the main heading, but all course work is integrated into the total curriculum listed under the College of Education.

As we look back to the make-up of the original state plans for teacher education and make a comparison of its general categories in regard to present offerings, we can appreciate the flexibility of the specific guidelines.
Early Training Requirements

256 hours of class work were necessary to meet the State Board original requirements. They were as follows:

- Trade English: 32 hours
- Trade Mathematics: 32 hours
- Trade Analysis and Theory of Teaching: 48 hours
- Trade Practice Teaching: 64 hours
- Trade Drawing: 32 hours
- Trade Science: 32 hours
- Theory and Administration of Vocational Education: 16 hours

256 hours

A rather straight-laced program compared to what is presently being made available for the vocational teacher in trade and industrial education.

Clock Hours

A. Introduction to Vocational Trade and Industrial Teaching
   - Pre-service Workshop, Summer (1-4 weeks in length)
   - Eighteen Week in-service training (regular school year) 50

B. Organization of a Local Vocational Trade and Industrial Education Program 35

C. Teaching Methods and Techniques in Trade and Industrial Education
   - Questioning Techniques
   - Methods of Group Instruction
   - Methods of Individual Instruction
   - Organizing and Conducting Effective Demonstrations
Principles of Learning
Individualized Instruction in the Related Classroom
Conference Techniques in Teaching
Techniques of Developing Trade Skill
Use of Laboratory Procedures in Teaching Trade Technology
Correlating Shop and Trade Technology Instruction
Selection and Use of Teaching Aids
Use of Counseling Techniques

D. Selection and Organization of Subject Matter in Trade and Industrial Education
   Instruction Sheet Writing
   Trade and Occupational Analysis
   Course Outline Writing
   Course of Study Construction
   Preparing and Using Lesson Plans
   Effective Teaching of Safety
   Developing and Constructing Teaching Aids
   Collecting and Classifying Instructional Materials

E. Shop and Laboratory Organization and Management
   Organizing and Operating Tool or Storage Rooms
   Organizing and Using Shop Personnel Systems
   Developing Appropriate Student Conduct
   Organizing and Controlling Student Groups
   Sponsoring a Vocational Industrial Club
   Care and Maintenance of Equipment

F. Evaluating Techniques and Practices in Trade and Industrial Teaching
   Methods of Evaluating and Recording Student's Progress
   Developing and Using Objective Tests
   Relation of Standardized Tests to the Vocational Program
   Individual Differences
G. Educational and Industrial Coordination
   Instructor's Responsibility for Coordination
   Coordination in Vocational Education 35

H. Shop and Laboratory Design and Layout
   Shop Design and Layout
   Trade Technology Design and Layout 30

I. Coordination and Supervision
   Conferences or Workshops of One to Three Weeks in Length
   Understanding and Using the Ohio Plan for Trade and Industrial Education 50-100

J. History and Philosophy of Vocational Trade and Industrial Education 30

K. Organization and Administration of Trade and Industrial Education 30

L. Administration of Vocational Education 30

M. Practice Teaching 30

N. Industrial Relations and Personnel Problems 30

O. Determining Trade and Industrial Needs 30

P. Techniques of Improving Trade Skills and Technology 30

Q. Conference Leadership 30

R. Supervision of Trade and Industrial Education 30

S. Research—Minor Problems in Trade and Industrial Education

Pre-service and in-service teacher education, over a period of 2-4 years, amounts to 200 clock hours of specific work equivalent to 16 quarter hours of university credit.
Since 1954 Dr. Robert M. Reese has served as O.S.U.'s Head Teacher Educator. During his administration, the following people have served in the trade and industrial services:

Dr. Calvin Cotrell (1955-60) Trade and Industrial Teacher Educator

Mr. Robert Carter (1961-62) Trade and Industrial Teacher Educator

Mr. Frank Oliverio (1962-64) Trade and Industrial Teacher Educator

At present, local secondary vocational teachers are being serviced by three full-time and one half-time teacher educators at The Ohio State University. They are:

Mr. James Provost (1963-present) Trade and Industrial Teacher Educator

Dr. Donald Karr (1964-present) Trade and Industrial Teacher Educator

Mr. Russell Riley (1968-present) Trade and Industrial Teacher Educator

Mr. Richard Johnston (1969-70) Trade and Industrial Teacher Educator

Drs. Reese and Karr are on a half-time basis in teacher education. The rest of their time is divided between graduate student programs and administration.

Currently both Masters and Ph.D. degrees can be obtained in vocational education by taking some of the following courses in addition to courses from the various colleges on campus:
Individual Studies in Trade, Industrial and Technical Education (1-4 quarter credit hours)

Trade and Industrial Education for Out-of-School Youth and Adults (3 quarter credit hours)

Survey of Vocational Education (3 quarter credit hours)

Seminar in Trade and Industrial Vocational Education (2-5 quarter credit hours)

Advanced Studies in Education (3 quarter credit hours)

Group Studies in Education (2 or 5 quarter credit hours)

Research in Education (Dissertation Registration)

Special Facts on Services and Activities

1. Non-credit and credit in-service education.
   The non-credit and credit in-service education within the trade and industrial education services at Ohio State is one of the largest within the state. The total state program is one of the largest in the country.

2. Institutes.
   From five to seven institutes, short courses, workshops and other similar meetings are held annually under the sponsorship of the Vocational Trade and Industrial Education Services at Ohio State. The enrollment in these
institutes ranges from 20 to more than 300. A few of the institutes held annually in recent years are: Law Enforcement Institute, Rural Electric Cooperative Managers Institute, Ohio State Fire School, Ohio Plumbing Inspectors Seminar, Experience Teachers Institutes in a variety of subject areas, Pre-service Workshops for first year cooperative program coordinators and Pre-Service Workshops for Occupational Teachers.

The following histories are of services that are currently functioning under the jurisdiction of trade and industrial education.

History of Law Enforcement Training

Law Enforcement Training for the State of Ohio began in 1939 under the sponsorship of the State Department of Education. This was a result of the George-Deen Act of 1936, amendment to the Smith-Hughes Act of 1917, whereby monies are provided for public service occupation training.

The training was implemented from Toledo University and Cincinnati University for a period of three years. The two men responsible for the training were Inspector

E. J. Irwin and Captain C. L. Hennessy who terminated their employment to enter service in the Armed Forces during World War II. Their leaving also resulted in the termination of the training program which ceased to exist for a period of twenty years. In the interim period, a file of inquiry letters concerning Law Enforcement Training had built up in the office of the Supervisor of Trade and Industrial Education Services. Dr. Byrl R. Shoemaker, then Supervisor, took a look at the file and decided to call an advisory committee meeting of Law Enforcement people on May 16, 1960.

The first item on the agenda was to determine the need for Law Enforcement Training in Ohio. The committee agreed unanimously that there was a need for state leadership in Law Enforcement Training. Training for law enforcement officers was on a "hit or miss" basis in the majority of departments.

Another outcome of this meeting was the recommendation to form a state Law Enforcement Advisory Committee from the parent law enforcement associations, namely, The Buckeye State Sheriff's Association and The Ohio Association of Chiefs of Police. This was accomplished by October of 1960. The function of the committee is to advise and counsel in the development and implementation of training. The original committee were as follows:
On October 13, 1960, the Committee met to plan for providing an organized program of Law Enforcement Training in Ohio.

It was determined by the committee that every police and sheriff's department should receive the application forms for employment in the two positions. Criteria for evaluation of applicants were established, and November 21, 1960, was the date set for oral interviews.

On November 21, 1960, seventeen applicants appeared for oral interviews. Robert S. Takacs, Ashtabula County Sheriff's Department, was selected as the specialist. The committee felt that a consultant should be selected at a later date from a larger group of applicants. Dr. Shoemaker then explained to the committee and Mr. Takacs that the two positions are classified as special services, and that a cooperative arrangement existed with The Ohio State University, College of Education, for employing and housing the personnel. Furthermore,
that the facilities of the University were available for
development of the program.

Mr. Takacs was appointed February 1, 1961. He
was relegated to researching the prior materials devel-
oped and visitations of existing police academies in
Ohio. This was done in order to develop a systematic
and logical approach, with necessary guidelines, to the
type of program needed by Law Enforcement. All prior
materials developed were scrutinized carefully and only
those pertinent to present Law Enforcement procedure
were kept. A synopsis of academy operation and curric­
ulum was developed for presentation to the committee.

A committee meeting was called on August 29, 1961.
Mr. Takacs presented his observations and evaluation of
Law Enforcement Training as he had observed it in Ohio.
The committee then recommended that a curriculum commit­
tee be formed to assist Mr. Takacs in the development of
content. The committee consisted of Dr. Robert M. Reese,
Director, Trade and Industrial Education, The Ohio State
University; Chief George Scholer; Mrs. M. Ross; William
Berndt, Consultant, Instructional Materials Laboratory,
The Ohio State University; and Chief H. S. Weaver. It
was also decided by the committee that the content be
published in manual form so that each officer would have
a copy from which to work. They felt that this would
provide for uniformity of training throughout the state.
A question was raised during the meeting as to how the
training would be implemented inasmuch as the load would be too great for two people. Dr. Reese then explained that in Vocational Education we have a system of instructor training. This same system would apply to Law Enforcement Training. The police chiefs and sheriffs would select from their personnel, those persons they felt most qualified to become instructors. Mr. Takacs would then train them in the vocational method of teaching over an eighty clock hour period. Subsequent instructor institutes since 1962 have provided Law Enforcement with 278 trained instructors to carry out the program. During this same meeting a title was selected for the training, namely, "The Ohio Law Enforcement Officer's Training Program." So that proper credit would be noted, the committee decided that the following format be used: The Ohio Law Enforcement Officer's Training Program, State Department of Education, Vocational Trade and Industrial Education Services, in cooperation with The Ohio State University. The Buckeye State Sheriffs' Association and the Ohio Association of Chiefs of Police.

On December 4, 1961, Sgt. Frank Winkler, San Jose Police Department, California, was hired as a consultant in the program. Mr. Winkler and Mr. Takacs then began the development of the curriculum and its content. When the lesson units were completed, they were submitted to the curriculum committee for their evaluation. Finally,
in April of 1963, the manuals went to press. In 1963, Mr. Winkler resigned to take a position in his home state of California. Mr. Takacs was promoted to the Consultant position. On February 3, 1964, Harry L. Smith, Chief of Police, Ashland, Ohio, was hired as the specialist.

The initial basic course consisted of forty clock hours of training in basic Law Enforcement procedures such as: Orientation, Acquiring and Maintaining a Uniform, Daytime-Nighttime Patrolling on Foot, Daytime-Nighttime Patrolling in a Patrol Vehicle, Handling Misdemeanors Witnessed by an Officer, Handling Felonies, Handling Misdemeanors not Witnessed by an Officer, Handling Traffic Violations, Handling Traffic Accidents, Arresting, Testifying in Court, Dealing with Civil Complaints, Handling Fire Scenes, Handling Disaster Scenes, and Handling Traffic Congestion. While the initial basic course was being conducted all over the state, Mr. Takacs and Mr. Smith prepared the second phase of basic training. This was tested and 24 clock hours assigned. The basic course then became a 64 hour training program.

On June 6, 1965, Governor James A. Rhodes signed into law the Peace Officer Training Act, which requires a minimum of 120 hours of training. Mr. Smith and Mr. Takacs wrote additional lesson units which now comprise 130 hours of training in basic Law Enforcement. Each of
the lesson units is actually a procedure to be used by officers in the handling of the particular situation. Each technique or skill advocated incorporates personal safety factors for the officer and public. Included are the methods which lead to the most effective disposition of a situation to the satisfaction of the Law Enforcement Agency and the public.

Since 1961, a total program has been developed to provide training at every level or position within a Law Enforcement Agency. The basic course has graduated well over 8,000 officers since 1963. There has been provided each year since 1961, a three-day administrative institute during May. Each year a concentrated and intensive program is developed for the chiefs, sheriffs, and/or their command personnel to apprise them of new methods, new ideas, or improving on old methods. The graduates of this phase of training number over 600. The number of instructors trained is 278. These men and women are the backbone of Law Enforcement Training in the State of Ohio. A recent innovation combining Law Enforcement and our public schools is the establishment of a two-year post high school associate degree program. This is accomplished at our technical institutes. It is a direct result of concern by Law Enforcement agencies to upgrade themselves and seek assistance from public education. The first program began at Penta County Technical
Institute in September, 1968, after three years of development by Law Enforcement and educational personnel. There are approximately six more technical institutes in various stages of development leading to implementation of a similar program.

After nine years, most of the law enforcement building blocks are laid and shape of training programs can be discerned. The program leading to training provided from the day a man is hired to the day he retires commensurate to his level or position is a realization. Mr. Takacs states: "There shall emerge, as a result of The Ohio Law Enforcement Officer's Training Program and the concern of many people, a new profession, recognized and accorded the support of the people."

State of Ohio Fire Service Training Program\textsuperscript{213}

Fire Service training is made available to all firemen in the State of Ohio through the adult extension program of the Trade and Industrial Education Services of the Vocational Division of the State Department of Education. This program was inaugurated in 1939 and was intended to serve the fire departments of the State of Ohio which at that time numbered a few more than 500.

Since Fire Service Training on a general basis was relatively new at this time, a program had to be developed adhering to the following objectives: (1) to determine local, county, regional and state needs and to implement a program to adequately meet these needs on a continuing basis, (2) to improve the competencies and skills of local fire personnel in the specialized fields of the Fire Service.

A State Fire Service Advisory Committee was organized and the members represented all branches of the Fire Service which included the following organizations: Association of Ohio Professional Fire Fighters, State Fire Marshal's Office, International Association of Fire Fighters, Ohio Fire Chiefs Association, International Association of Fire Chiefs, The Ohio Inspection Bureau, and the Ohio Firemen's Association.

The first course offered consisted of 30 hours of basic fire training. In the initial years of the program, approximately 800 to 1000 firemen were provided the training each year in their local communities.

In 1946, full-time coordinators were employed cooperatively by the Vocational Division of the State Department of Education and The Ohio State University, University of Cincinnati, and Kent State University. Each coordinator was assigned a section of the state and was responsible for developing instructors, developing
text materials, and promoting and coordinating fire service training courses in his area.

The instruction presently being offered is a 36-hour basic course. The instructional materials consist of three separate publications—the Fire Service Training Text, Learner's Workbook, and an Instructor's Manual—all published by the Trade and Industrial Education Services, The Ohio State University.

In addition to the basic and advanced courses, one- and two-day regional schools are held in all sections of the state throughout the year. Finally, an Annual Ohio State Fire School is held on campus of The Ohio State University each year. This State School was first held in 1930 and was possibly the first school of this type in the nation. The school was discontinued during the years of World War II but was later renewed. This year, the twenty-fourth consecutive school will be held on campus and will offer nine courses in administration, fire prevention and inspection, victim care and rescue operations, apparatus maintenance, operational instruction, and fire-fighting techniques. The school is planned to offer instruction in specialized and newly developed practices as a supplement, but not to duplicate, the instruction provided at either the regional or departmental levels.

The school is sponsored by the Trade and Indus-
trial Vocational Education Services of the State Department of Education and the Academic Faculty of Vocational Technical Education at The Ohio State University, in cooperation with the Office of the State Fire Marshal.

The 1969 school was held from September 8 through September 12. The enrollment is limited to 393 participants and the teaching staff numbers more than eighty persons from the insurance industry, legal, medical, engineering and educational professions as well as municipal administrators and fire service personnel from all sections of the state.

The school is directed by Robert M. Reese, Professor of Education and Chairman of the Academic Faculty for Vocational-Technical Education of The Ohio State University. The Assistant Director is W. Joseph Heinzen, Fire Service Training Coordinator of the Vocational staff.

During the twenty-three year period from 1939 to 1962, 64,800 paid and volunteer fire fighters attended 2,061 classes in the State of Ohio. From 1962 to 1969, approximately 98,000 firemen attended 2,845 classes.

At the present time, there are approximately 250 part-time certified fire service training instructors in the State of Ohio. The firemen are required to renew their basic and advanced training every three years and the text materials are continually being upgraded to
meet the present-day needs. The training manuals are quite popular outside of the State of Ohio; in fact, many state vocational departments have adopted the Ohio manual as a basis for their fire training instruction. Many large cities such as Chicago and Pittsburgh have adopted the Ohio manual as a supplement to their own materials and as a resource for their promotion examinations.

The two coordinators at The Ohio State University have been responsible for servicing the Southeast and Northwest sections of the state arranging approximately half of the total programs which involves 1200 fire departments in the State of Ohio. In addition, a monthly training letter, "The Buckeye Training Table", is made available for inclusion in the State Fire Marshal's Newsletter.

The Rural Electrification Training Program

The Rural Electrification Administration was organized in 1939. It soon became increasingly apparent that the need for trained personnel was a "must." Through the efforts of the administrator and the cooperation of the U.S. Office of Education, a training program was set up as a Vocational Education Service.

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Funds were allotted from the Smith-Hughes and George-Barden Acts, since the program involved rural people. These funds were to be matched by state funds for instructor salaries. An advisory committee was to be appointed by each state. This committee was composed of a representative group of all the rural electric systems within the state. The local cooperative groups were responsible for providing the funds to cover the cost of equipment, visual aids and instructor travel.

The Trade and Industrial Education Service, under the State Department of Vocational Education, was then responsible for the staffing and operation of the program in cooperation with the advisory committee. It was then that The Ohio State University's Department of Agriculture became involved in the program to provide office space on campus, to be used as headquarters for the Rural Electric Job Training Instructor. The chairman of the Agriculture Engineering Department became an advisor.

After interviewing several candidates for the position of instructor, Mr. L. A. Ehmsen was accepted for the post. During the year he held the post, he started the training programs for twenty-two rural electric systems. In 1941, Mr. Dean Horsewood took over the office and the number of systems in operation increased to twenty-eight.

World War II interrupted the progress of the
program because Mr. Horsewood as called into military service, leaving the program without an instructor until Mr. Chester A. High accepted the position late in 1942. However, Mr. High had only a few months at The Ohio State University before being called to fill the vacancy in the manager's office at the Morrow Rural Electric Cooperative in Mt. Gilead, Ohio, after their manager was also called into the military.

The program was resumed after the end of the war in 1945, under the direction of Mr. High. Because there had been no construction during the war, the need for a large expansion program was immediately apparent. The first step was the hiring of an additional instructor, followed by the addition of the first Municipal Electric System in 1947.

The advantages of the training program were brought home by the fact that the program was expanding throughout the United States. By 1950, 37 states had initiated similar programs for their rural electric systems. This was further expanded by the development of on-the-job training programs by individual cooperatives.

There were many opportunities for advancement in the program with trained personnel to fill the positions. Mr. Owen D. Manning, who had been the instructor at O.S.U., was replaced by Mr. Wayland F. Hamilton, to
work with Mr. High. Through the efforts of these two men, and a national committee, a series of four training manuals were developed. The "Electric Lineman Training Manuals" were compiled in the Instructional Materials Laboratory at The Ohio State University and are now being used nationally in training employees by cooperatives, municipals and power companies.

Six more municipal electric systems were added to the program between 1955 to 1964, largely through the efforts of Mr. High and Mr. Hamilton. Mr. High retired after twenty-two years of service, having become nationally known for his work in expanding and improving job training programs. Both Mr. High and Mr. Hamilton have served as chairman of the National Association of Job Training Instructors Conference, which has met each year since 1943. Mr. High was replaced by Mr. Mark Hawkins, who was an expert in watt-hour metering. This was a most helpful contribution to the program. During his three years with the program, it was expanded to include two more municipal electric systems.

The electrification training program is now being expanded to include instruction in the use of video-recorder tape, which should add to the efficiency and effectiveness of the program. At the present time, there is a shortage of trained qualified personnel. For this reason, training programs for vocational high school
students are being considered.

During the years of great changes in the electric utility industry, the job training instructors have been able to make a significant contribution. However, the training of new personnel to these ever-changing methods and equipment is a continuous problem.

Trade and Industrial Instructional Materials Laboratory, Ohio State University, College of Education and Trade and Industrial Education

Early in 1946, the Ohio Trade and Industrial Education Instructional Materials Laboratory was founded by Robert M. Reese, who was State Supervisor of Trade and Industrial Education at that time.

In these early days, he pointed out the difficulties in obtaining instructional material or any adequate guide or outline for the beginning teacher. As a result, the curriculum development effort was duplicated among many teachers working in similar occupational areas. It was realized that the curriculum materials must be organized in some way to be at all effectual.

Dr. Reese felt that this need for development of unified curriculum material was further emphasized

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during visits throughout the state where the programs offered were reimbursed by the state. The attitude of the schools which had developed their own program was that they were not willing to share their material or make it available to other schools.

To initiate a program of instructional materials development for Ohio, Mr. John Doughman was appointed as Coordinator for the state with his office at the University of Akron, one of the universities participating in trade and industrial teacher education. However, the laboratory was transferred to The Ohio State University the next year, in July of 1947.

Mr. Doughman's first task was to analyze the Instructional Materials already under way throughout the state. He developed and made available to all schools, analyses of source material, including trade analyses, course outlines and actual job or assignment sheets.

The analysis emphasized the fact that the teacher training program was helpful in the field of trade analysis, since most teachers had a fairly complete analysis available. However, it was also learned that even when teachers had fairly adequate course outlines available, they very often did not follow them. The most important finding was that teachers were short of individual instructional sheets to be used in the teaching process.
Shortly after Mr. Doughman came to The Ohio State University, the Curriculum Library was organized, which would be instrumental in producing materials as well as housing a state-wide library of occupational resource materials. The first of these were instruction plans for the trades of bricklaying and carpentry.

Resources were meager in these formative years, with very little equipment available. The reproduction of materials were difficult, but through the dedicated efforts of a selected group of Cleveland teachers who worked during the summer and part-time during the school year, the first instructional materials were prepared. Then, too, instructors were employed during the summer to refine the materials on which they were working. These materials were then reproduced and distributed by the Trade and Industrial Education Laboratory. In the summer of 1947, the Laboratory, which was located at The Ohio State University, was producing a meaningful quantity of material, most of which was prepared by individual writers who were local teachers.

In July of 1950, the local Trade and Industrial Supervisors' Workshop was held at The Ohio State University. At this meeting, a state-wide Instructional Materials Advisory Committee was elected. On the committee were seven local supervisors and directors and one teacher educator in trade and industrial education. The
aims of the program of development of instructional materials, duties and responsibilities of the person in charge of the program were detailed in the Ohio Plan for Professional Services. The aims of the plan are set forth in the following objectives:

1. To keep abreast of the need for the development or revision of instructional materials not available from existing sources.

2. To produce instructional aids that are needed for use in trade and industrial education programs and new instructional materials from commercial and educational sources.

3. To evaluate existing instructional materials in the trade and industrial education field.

4. To assist programs in local communities to obtain needed instructional aids.

The Ohio Instructional Materials Laboratory operates within the Trade and Industrial Education Services established in the Department of Education at The Ohio State University. Administratively, the laboratory functions as a part of the University by virtue of a contract with the State Department of Education's Division of Vocational Education.

The Director of Trade and Industrial Education Services at the University represents both agencies in the operation of the laboratory. The State Supervisor of Trade and Industrial Education, however, retains, by cooperative agreement, final authorization for the use
of the rotary funds resulting from the sale of materials. This is probably due to the fact that this rotary was originally established within the State Department of Education, rather than at the University. The Consultant of Instructional Materials Development is the responsible operating head of the laboratory and its functions.

Membership of Ohio's statewide Trade and Industrial Education Instructional Materials Advisory Committee is composed of six local trade and education supervisors, one representative from labor and one representative from industrial management, one teacher educator, and the executive secretary of the Ohio Apprenticeship Council.

Mr. Carl J. Schaefer directed this very important operation of curriculum development from 1950 to 1954. In 1954, Merle Strong came on the scene and managed to put added emphasis on this service through facility reorganization and management. The function of the Materials Lab was greatly expanded under his direction. Dr. Strong left to take a similar position with the federal government in vocational education.

William Berndt was retained from 1958 to 1963 where it is noted that the need for the vocational instructional materials is increasing rapidly on a nationwide basis.
Since 1963, the Laboratory has been under the direction of W. F. Stover, and is located at 1885 Neil Avenue (Townshend Hall), The Ohio State University, Columbus, Ohio. Since 1963, yearly distribution of publications has increased from 68,000 to over 85,000. The annual sales volume has gone from $85,000 to over $180,000 during the same period. Recent publications published include a three-manual series on Basic Electronics, Guidelines for ten trade areas, Instructor Guides, and Occupational Work Experience Manuals. Some currently in process are Printing Manuals for Learners together with Instructors Guide, a School Bus Driver Training Manual, and an advanced course for Electronics and Apprenticeship Manuals for Asbestos Workers.

Pupil Transportation Training Program\textsuperscript{216}

As early as 1869, laws were enacted which governed the transportation of children to school. Quincy, Massachusetts, was the first city to provide transportation facilities for students in 1874.

Kingsville Township, Ashtabula County, and other small districts decided to transport their students to a village school rather than build a new school building,

\textsuperscript{216}James Provost and Robert Whisman, "Pupil Transportation Training Program" (unpublished history, The Ohio State University, 1969).
when it was proposed that some of the school districts be consolidated. This was the initial pupil transportation program in Ohio, in 1892.

In order to legalize this procedure, a bill was introduced into the General Assembly of Ohio, and became law in April, 1894. The first state-wide law providing for pupil transportation was enacted by the General Assembly four years later.

There have been many significant changes in the Ohio pupil transportation program. The first school "buses" were horse-drawn vehicles which were sometimes owned by the school board, but most often were privately owned vehicles which were rented by the board, together with a team of horses.

Through the years, from these horse-drawn carts to the most modern school buses, there has been a constant increase in the number of students who benefit from this school transportation program. The development of the automobile and the building of hard-surfaced roads are the factors which have contributed most significantly to the rapid growth of this service. The expansion of the transportation area of the Ohio school districts has been due to many factors, including implementation of the Fair Bus Bill, the reorganization of school districts, the great move to suburbs, the manufacturing of larger buses, and the building of better
roads. Considering all this, the school bus driver's and the school's responsibilities have increased tremendously.

According to historical data concerning school bus driver training, the first such program was undertaken at The Ohio State University in May of 1949. That summer George Thomas, a teacher at the Max Hayes School in Cleveland, traveled to all four teacher-training centers giving preventive maintenance instruction to bus drivers. A conference conducted by Dr. Robert Reese and his aide, George Brandon, of The Ohio State University, Trade and Industrial Education Services, brought out a number of important facts.

Discussion at the conference centered around vehicle maintenance, rules of the road, and driver training. The conference participants were selected from personnel who had a keen interest as well as experience in school transportation. The committee included school administrators, safety engineers, driver education consultants and law enforcement officers.

The program did not go beyond the discussion phase until January, 1963, with no record of additional conferences. At that time, Trade and Industrial Services, together with The Ohio State University and the State Department of Education, established the job classification of School Bus Driver Training Consultant. The State Department of Education had this to say:
A few short years ago pupil transportation was a small auxiliary service to be tacked on the school budget and easily administered by spending a few hours with some of the drivers. Today the cost of transportation is a major item in the school budget and administrators spend many hours struggling with the problems that accompany this growth.

School district reorganization and consolidation plus the migration of masses of people to the suburbs have created problems of larger rural school attendance areas. To the bus driver, this means more students to transport, more daily miles to travel, and more daily time to devote to the transportation program. It is imperative that a person should not be employed to do this work unless some training in the skills and knowledge of driving a school bus has been acquired. The bus driver is responsible for a most precious cargo.

With the above-mentioned thoughts in mind, James Provost was hired by the State Department of Education in February of 1963 as transportation consultant under the Division of Vocational Education. Mr. Provost was well qualified because of his experience in bus driving, driver education, bus fleet supervision, and school administration.

A study of programs in other states was undertaken and an advisory committee was activated. Material and literature were reviewed, and an outline was developed. This outline was a composite of units that the
committee thought should be included in Ohio's manual of instruction.

Mr. Provost completed the final pre-publication copy of the manual, which was then used in two pilot programs to test the instruction time involved and the value of the material. The pilot program was held in a large city school, then in a rural school to determine the practicality of the program for all types of schools. From this testing, necessary revisions were made in the manual, which went to press late in 1963. An instructor's guide was also developed to assist instructors in the sequence of instruction and in timing the instruction units. Both units were edited and reproduced by January 1, 1964, and the first official classes began shortly thereafter. This was the beginning of Ohio's practical program in school bus driver training.

In addition to Mr. Provost, people who have occupied the position of Consultant, School Bus Driver Education are Charles Dysert, October 1965 to February, 1966; John Magaw, May, 1966, to June, 1967; and Robert Whisman, November, 1967 to the present time.

Significant changes in program includes the following:

1. 1967 - Major revision of basic manual and changing from fifteen to eighteen hours of instruction.
2. 1969 - The School Bus Driver Education program has been expanded to include a thirty-six hour pre-driver education program for people with no experience driving large vehicles. A new manual has been completed for an advanced program for drivers who have completed the basic course.

**Emergency and Rescue Squad Training**

The importance of adequate training for emergency squad personnel, in rescue procedures and victim care beyond basic first aid, has been obvious for some time. International as well as national medical and rescue associations have expressed a dire need for a solution to this training problem.

The Ohio Trade and Industrial Education Service, Division of Vocational Education of the State Department of Education, has taken an active part in the training of fire department personnel since 1939. Through the training and utilization of part-time instructors, the Trade and Industrial Education Service has been able to make Fire Service Training available to all fire departments in the state. This training has given assistance to paid departments, and has been of particular help to volunteer departments. In 1958, a similar program was

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developed for training emergency squad personnel in victim care and rescue procedures.

In 1959, the Ohio Trade and Industrial Education Service published an Emergency Rescue Squad Manual as a part of its training program. This comprehensive text was a pioneer in its field. A survey of literature had failed to disclose adequate materials for a complete training program. The materials available were fragmentary; each omitted vital phases of emergency and rescue squad work. The Emergency Rescue Squad Manual therefore filled a critical need. It has been widely distributed and has been reprinted every year since its publication.

The preparation of the first Emergency Rescue Squad Manual was a cooperative effort involving many persons concerned with this area of training. The State Fire Service Advisory Committee for Trade and Industrial Education has given their support and leadership toward providing for an adequate training program in the area of emergency and rescue work and the developing of appropriate training material.

Members of this committee and the organizations they represented were: C. E. Blanchard, Toledo, Ohio Fire Chiefs' Association; E. P. Brush, Jr., Columbus, State Fire Marshal; E. B. Haggerty, Cincinnati, Association of Ohio Fire Fighters; W. E. Kingzett, Cleveland, Ohio State

As a first step in providing for materials in this field of training, an outline was developed by the trade and industrial education personnel including: C. J. Getz, Fire Training Coordinator, Kent State University; H. A. Ohlrich, Fire Training Coordinator, University of Cincinnati; C. J. Schaefer, Assistant State Supervisor; Azor D. Sheffield, Fire Training Coordinator, University of Toledo; Elmer W. Weis, Fire Training Coordinator, The Ohio State University; Merle E. Strong, Consultant, Instructional Materials Laboratory, The Ohio State University.

A copy of the outline was sent to a number of persons in Ohio and to persons in several other states involved in emergency and rescue work for their reactions. The comments received were helpful in improving the written outline.

The Trade and Industrial Education staff of State Fire Service Training Coordinators including C. J. Getz, H. A. Ohlrich, Glenn Rehfuss and Elmer W. Weis, along with Jack Liberator, R.N. who was the first Emergency
Rescue Squad Training Coordinator for Trade and Industrial Education, were responsible for compiling the information in the first manual. In doing so, they had cooperation from many fire department personnel throughout the state who have shared their experiences and have given constructive criticism.

A medical advisory committee assisted on the chapters dealing with victim care in order to provide the latest recommendations for care by squadmen. The committee consisted of the following: John G. Boutselis, M.D., Obstetrician; G. Joseph Hatfield, M.D., Internal Medicine; Walter M. Haynes, M.D., General Surgery and Chest Surgery; J. J. Jacoby, M.D., Chief, Department of Anesthesiology, The Ohio State University Hospital; Robert R. Kessler, M.D., Orthopedic Surgery; Charles R. McClave, M.D., Pediatrician; Jack Teterick, M.D., General Surgery and Chest Surgery; William W. Wiltberger, M.D., General Surgeon.

With the completion of all text material, a forty-hour course of instruction was developed which covered the full range of emergency and rescue situations that would confront the emergency squadmen of that period. A group of experienced, qualified emergency squadmen were selected from throughout the state to receive instructor training that prepared them to teach this program at the local level. The training was enthusi-
astically received by the squadmen of Ohio. The program received national recognition immediately.

In 1964, new medical findings about closed chest heart compression, manual and mechanical resuscitation, first aid for laryngectomy victims, and other phases of emergency care were introduced into Ohio's training program, along with the most recent rescue procedures and techniques. A major revision of the original text was initiated at this time by Mr. Jack Liberator. Prior to the completion of the proposed major revision, Mr. Liberator resigned as the State Coordinator for Emergency and Rescue Squad Training. This indeed was a great loss to Ohio, for the names Liberator and Emergency Squad were now synonymous.

In March of 1965, Mr. Rocco V. Morando was hired to succeed Mr. Liberator as the State Consultant for Emergency and Rescue Squad Training. Mr. Morando had served with the Yorkville Fire Department as Emergency Squad Captain, having organized that department's first emergency squad. He was among the group of original instructors and worked diligently in teaching the majority of emergency and rescue squads of Eastern Ohio.

Mr. Morando completed the revision of the original text and entitled the new text, "Emergency Victim Care and Rescue." He also developed an instructor's manual to assist the instructor in the field and to insure
uniformity in the teaching of this most important program. A revision and updating of the courses taught was completed affording training, not only to fire departments, but also to private ambulance companies, funeral directors and morticians, rescue units within industry, police departments and nurses.

Ohio's Emergency and Rescue Squad Training continued to receive national recognition. In 1967, a survey was conducted by the National Research Council-National Academy of Sciences, Division of Medical Sciences, of all available training material in this field. As a result of this survey, Ohio's program was selected as one of the most comprehensive in the nation. Many requests have been received from cities and states for guidance and assistance in the development of similar programs. The Ohio State University's Trade and Industrial Instructional Materials Laboratory has extended copyright waivers to several states so that they may reproduce our text material in part.

As the State Consultant for Emergency and Rescue Squad Training, Mr. Morando has represented the Division of Vocational Education as an invited member of the National Academy of Sciences-National Research Council's "Task Force" to establish guidelines for the training of ambulance attendants, fire and police emergency squads and others involved in the response to the scene of accident or serious illness.
He has also served as a consultant to the Federal Department of Transportation, to assist in the development of guidelines to aid the fifty states in the implementation of the Federal Highway Safety Act-Emergency Medical Services.

Currently Mr. Morando is serving as a member and secretary of the NAS-NRC Subcommittee to study and assist in the development of the emergency ambulance service throughout the nation, and to provide the medical requirements for the ambulance vehicle and equipment.

The fact that Mr. Morando has been called upon to serve at the national level is proof of the excellence of the program.

Trade and Industrial Education Achievement Test Program

The Achievement Test Program is operated cooperatively through The Ohio State University and the State Department of Education, Vocational Division, Trade and Industrial Education Service.

In the summer of 1958, at the Local Supervisor's Workshop, held at Indian Lake, the supervisors made demands for instruments to measure success in a trade area. Mr. William Berndt, Consultant, Instructional

218George C. Kosbab, "Trade and Industrial Education Achievement Test Program" (unpublished history, The Ohio State University, 1969).
Materials Development, and Mr. William Dunton, Supervisor, Trade and Industrial Education, Warren, Ohio, were assigned the task of developing the Ohio Machine Trades Achievement Test. They organized a committee, and with the help of University personnel, prepared a test that was administered to 508 machine trades seniors in Ohio. They followed with a revision based upon an item analysis and the test was then ready for continual use.

In the fall of 1960, and while the Ohio Automotive Mechanics Achievement Test was being developed, Mr. W. F. Stover became the first Consultant, Testing and Research to work under the direction of William Berndt. While in this role, Mr. Stover worked with committees in developing the Automotive Mechanics, Basic Electricity, Basic Electronics, Mechanical Drafting, Printing and Sheet Metal Achievement Tests.

Mr. William Berndt left the Instructional Materials Laboratory in the fall of 1963 to join the U. S. Office of Education staff as a curriculum specialist. Mr. W. F. Stover then became the Director of the Instructional Materials Laboratory and Mr. George C. Kosbab became the Consultant, Testing and Research, in 1964.

While in this capacity, Mr. Kosbab developed achievement tests in Cosmetology, Welding, and Auto Body. In 1964, a study of "Factors Contributing to Student Achievement" and "A Five State Statistical Analysis"
was completed. A national grant was received in 1965-66 to do a validity and reliability study of the Printing Achievement Test.

The trade tests have been used in over thirty states and numerous schools. State norms have been developed for Ohio, Kentucky, Indiana, Illinois, West Virginia, Massachusetts, and Utah. National norms for printing and sheet metal have also been published.

In 1969, the tests were administered to 13,661 high school juniors and seniors enrolled in Vocational Trade and Industrial Education programs—a total of 177 schools in eleven states. Current plans call for developing two new tests in Carpentry and Dental Assisting, plus revising the Auto Mechanics Test. The anticipated participation for March, 1970, is 20,000 high school juniors and seniors.

This program is a most unique and an extremely effective tool for program and instructional improvement. The "Achievement Test Program" has the following eight goals:

1. to help determine if the objectives of instruction have been achieved.
2. to provide a basis for reviewing the curriculum and improving instruction.
3. to provide motivation for students and teachers.
4. to identify facility and equipment deficiencies.
5. to assist in the process of supervision.
6. to help identify strengths and weaknesses of the instructor.
7. to help identify strengths and weaknesses of the student.
8. to help evaluate reference material.

Ohio's Trade and Industrial Education Achievement Test Program does offer a most effective tool for leaders in vocational education. This is evidence by its wide acceptance and adoption by schools and states throughout the nation. Teacher educators and school administrators found the test results to be most beneficial as they provide for program improvement, development and expansion.

Hospital Housekeeping Training Program

The Ohio State Hospital Housekeeping Training Program was established in 1959 by the Ohio Hospital Association through its Hospital Housekeeping Committee and the Trade and Industrial Vocational Educational Service of the State Department of Education.

It was found, after a survey, that in 1959 there were about 6,000 housekeeping personnel in 208 hospitals. These people were of every age and educational background.

219"Trade and Industrial Materials Laboratory" publication, The Ohio State University, 1959.
Since it was learned that only a few hospitals had been successful with an in-service training program and since housekeepers who had been properly trained would contribute to safer medical care for the patients, the need for a program to train a large group of employees through planned instruction was desperately needed.

The program was developed for all types and sizes of hospitals, with special attention being given to the needs of the smaller establishments.

Once the financial arrangements were worked out, Miss Alice Wayland of Dayton was selected to be responsible for the training program and was appointed by The Ohio State University as instructor trainer for the Hospital Housekeeping Training Program. The first phase was the preparation of a "Hospital Housekeeping Instructor's Guide" which was written in very simple language and was well illustrated. This was to be used as a textbook for supervisors. The Vocational Trade and Industrial Education Services of the State Department of Education and the Ohio Hospital Association assumed the responsibility of initiating the program.

Under the supervision of Dr. Robert M. Reese, Director of Trade and Industrial Vocational Education Services at The Ohio State University, Miss Wayland started an intensive training course. Promotional letters were dispatched to all hospitals and many nursing homes explaining the plan. The letters included an application form
for workshop participation, for which a twenty-five dollar fee was charged. Supervisors were given practical instructional techniques to use in their local institutions in teaching housekeeping personnel. They were taught how to analyze their individual needs and to organize, or reorganize, their own teaching program. The teacher-trainer followed up each workshop with a personal visit to the participating institutions in order to be of further assistance in working out individual problems. This was again followed up with a visit after approximately six weeks.

The teacher-trainer reported each month on the progress of the program both to the State Supervisor of Trade and Industrial Education and to the Ohio Hospital Association. The workshop courses were organized from proven programs of teaching people to instruct others and were practical, down-to-earth courses. Executive housekeepers, housekeeping floor supervisors, group leaders, etc., benefited from these workshops.

After the second follow-up visit, if satisfactory progress had been made in the application of training, the supervisor was awarded a certificate.

The project was designed to be a basis for a continuing program which is urgently needed for housekeeping personnel in order to provide better over-all care for hospital patients.
The personnel in agricultural education had long recognized the need for a national center for advanced study and research in agricultural education and took steps, in 1959, to formally recommend this to the national government. Committees were appointed to study the matter in detail and to draft a proposal for the establishment of a unified National Center for Advanced Study and Research. After much study and refinement, the proposal was submitted to twenty-two land grant institutions who had indicated an interest in having such a center located on their campus. After more detailed applications were solicited, five universities applied for the site.

The realization of the need for developing off-farm training programs for agricultural industry prompted several conferences to form a national coordinated research and development effort in this area.

As the National Center for Advanced Study and Research in Agricultural Education pursued its goals, it became apparent that key problems were not confined to the field of agricultural education but were common

to most vocational service areas as well. From this recognized need evolved the plans to develop a proposal for establishing a National Center for Research and Leadership Development in Vocational and Technical Education. The original draft of the proposal submitted by The Ohio State University was compiled by Robert E. Taylor, Ralph E. Bender, William B. Logan, Inez Ray Wells, Ruth T. Lehman, and Robert M. Reese. Proposals were submitted to the U. S. Commissioner of Education, which were accepted in 1964, and the Vocational Education Center was given a $610,130, 18-month planning grant beginning March 1, 1965.

**Organization of The Center.** The Center for Vocational and Technical Education is organized as an independent unit on the campus and operates directly under the office of the Vice President for Academic Affairs and Provost of the University. The Center is comprehensive and is multidisciplinary in its approach and interinstitutional in its program.

**The Major Objectives of The Center.**

1. To provide continuing reappraisal of the role and function of vocational and technical education in our democratic society;

2. To stimulate and strengthen state, regional and national programs of applied research and development directed toward the solution of pressing problems in vocational and technical education;
3. To encourage the development of research to improve vocational and technical education in institutions of higher education and other appropriate settings;

4. To conduct research studies directed toward the development of new knowledge and new applications of existing knowledge in vocational and technical education;

5. To upgrade vocational education leadership (state supervisors, teacher educators, research specialists, and others) through an advanced study and in-service education program;

6. To provide a national information retrieval, storage, and dissemination system for vocational and technical education linked with the Educational Resources Information Center located in the U. S. Office of Education;

7. To provide educational opportunities for individuals contemplating foreign assignments and for leaders from other countries responsible for leadership in vocational and technical education.

The major objectives of The Center have been translated into six major program areas:

State Leadership, Vocational Curriculum, Vocational Teacher Education, Occupationally Disadvantaged, Vocational Development and Adjustment, and the Change Process in Vocational and Technical Education. Each program area embraces several specific research and development training projects.

Staff. At present, the professional staff of The Center include twenty-six full-time staff members. These senior staff members are supported by thirty-seven half-time research associates who are pursuing the
doctorate in various areas of vocational and technical education, education, and the behavioral sciences.

University of Akron

Buchtel College, which later became The University of Akron, was established on May 3, 1870, by the Universalist religious order. The Universalists' desire to educate their own resulted in keeping the College a private and denominational institution until 1913. From 1870 until 1913, it struggled along, concerned mainly with cultural and traditional ideals, while other comparable institutions were beginning to include vocational programs in their curriculums in order to meet the demands of industry.

Throughout this early period, the college never really reached a plateau of solvency. Every national or regional depression or panic was reflected in hard times for Buchtel College; so, in 1913, it decided it could no longer function as a private educational institution if it ever hoped to survive; it was then turned over to the city of Akron and became the Municipal University of Akron. This change allowed the school to tap new resources and, at the same time, injected a new vitality into an institution that was on the verge of collapsing in stodginess and isolation.

To trace the early beginnings of vocational trade and industrial education as it evolved from the
course offerings of the University, we find that it is similar to the pattern found at The Ohio State University in that, to a degree, it stems primarily from the initiation of engineering courses.

In 1914, a college of engineering was established along the same lines as that of the University of Cincinnati's co-operative program with Fred C. Ayer and C. E. Dean as instructors. Ayer, an associate of Schneider's at Cincinnati, was brought in to set up the co-operative program.

It is interesting to note that prior to 1914 the only industrial-oriented course offered was in mechanical drawing. This fact is hard to believe when one takes into consideration Akron's high degree of industrialization.

The 1915-16 catalog lists some provisions for shop work in conjunction with engineering courses.

In 1917-18, mechanical, civil, electrical engineering, together with business training, manufacturing and production methods were offered on a co-operative basis.

The Annual Catalog of 1918-19 gives the first indication of vocational subjects, however, it gives no clue as to who taught the courses. It would seem that the University was now teaching high school vocational subjects:

- Manual Arts, 1 to 3 Units
- Domestic Science, 1 to 3 Units
- Commercial Subjects, 1 to 3 Units
- Agriculture, 1 Unit
The place of vocational subjects in the high school curriculum is at present so indefinite as not to warrant the statement of specific requirements in these subjects for admission to college. Graduates of Akron high schools in the manual training, home economics, or commercial course, are admitted to the freshman class without conditions if they offer 15 units of work with grades of 70% or above. Graduates of other first grade high schools in similar courses will be admitted on the same terms provided they fulfill the specific requirements for admission to that school of the University which they wish to enter.

The Teachers College announcement in the 1921 catalog first mentioned the Smith-Hughes Law and its implications for tradesmen wishing to enter the field of teaching. It stated that, with the introduction of shop subjects into the public schools, there was a demand for a new type of teacher—one who knew his trade and who also had a knowledge of teaching methods. The catalog further indicated that men with both of these qualifications were hard to find, and, if the demand was to be met, some method must be found to transform skilled mechanics into teachers.

The greatest needs of that time were for: skilled carpenters, cabinet makers, mechanical draftsmen, printers, pattern makers, sheet metal workers, electricians, automobile repairmen, machinists, painters, bricklayers and plumbers, who are able to teach their crafts. Additionally, there was a growing demand for teachers of related subjects such as shop drawing, shop mathematics,
blueprint reading and shop science. (With few exceptions, there is still a shortage of teachers in many of these trade areas.)

Teacher training courses for the prospective craft teacher were offered on an extension basis in the Teachers College under an arrangement with both the state and federal governments.

Potential shop or related subjects teachers had to meet strict qualifications.

Applicants should have had five years of trade experience in addition to their apprenticeship training. They should also have a grammar school education or its equivalent. Men with high school education are especially desired. For Teachers of Related Subjects.

(a) Applicants should have had two years of training beyond the high school and some experience in trade or industry which will enable them to make practical applications of the subjects which they are teaching.

(b) High School education with not less than three years of successful trade experience.

(c) High School teaching experience with one year of trade experience.

(d) Successful experience in teaching manual training with at least one year of practical trade experience.

In addition to these requirements, the tradesman had to complete the 256 hours of professional education courses described in The Ohio State University history, before he could receive a trade teaching diploma from the State Board of Education.
By the early 1920's it appears that the University had embarked on two closely related endeavors: a) teacher education for the tradesman, and b) the actual teaching of vocational trade area subjects.

The 1924 Annual Catalog indicated that in addition to offering courses for high school students, courses were also offered for seventh and eighth graders. A total of sixteen courses were offered in such subjects as:

2. Woodworking.
3. Metal working.
5. Mechanical drawing.
6. Psychology of shop subjects.
7. Printing.
8. Administration of Vocational Education.
9. Electrical shop.
10. Field projects.

Administration of Vocational Education seems to be more in line with a college course, however, the catalog does not make any differentiation.

The 1925-26 Teachers College announcements listed trade and industrial teacher-training courses under Industrial and Vocational Education with a Mr. Waterhouse and a Mr. Jellison as the instructors. However, the
course offerings are basically the same as those listed above.

Mr. Jellison was listed as an instructor in vocational education. There is some confusion as to whether he was full time teacher with the University or with the public school system.

In 1927-28 the Teachers College offered a four-year vocational course leading to a Bachelor of Education degree.

In addition to the twenty-eight hours listed, which, by present day standards may be considered a curriculum in industrial arts, the student had to have eight months of trade experience in his major subject. The area of trade experience had to be approved by the Dean of the School. At the end of the freshman year, the student selected his major and worked in this trade the remaining three summers of matriculation.

The 1928 Teachers College Bulletin listed Industrial and Vocational Education, but we find that the state's teacher training courses for tradesmen are now mixed with other courses which are of questionable vocational intent:

#1-2 Woodworking - for seventh grade, eighth grade and high school students (9 hours per week)

#9-10 Metal working - (9 hours per week)

#17-18 Printing - (9 hours per week)

#21 Electric Shop - (12 hours per week) Given in the electric shop of the public schools.
Courses 1 through 22 (excluding 18-19) seem to be a combination of high school and college course work based on the 3-4 credit hours listed after each course.

Courses #23-30 appear to be strictly for the tradesman with Course; #18-19 seem to be nebulous in nature inasmuch as it is also listed as part of the art curriculum.

Mr. Greenly, Mr. Jellison, Mr. Newman and Mr. Hummel taught these courses. However, Mr. Greenly was the only person listed as a full-time University staff member at this time.

Skipping to 1935, we find all vocational course work was limited to that which was prescribed by the Ohio State Department of Vocational Education. All courses such as mechanical drawing, electricity, metal
working, etc. were now found in the Industrial Arts Department. Mr. Greenly was still listed as a full-time faculty member teaching essentially the same courses which were listed in 1928 expanded to include topical material refinement.

The 1946-47 Annual Catalog found vocational education listed under the College of Education with a full-time staff consisting of Associate Professor Dallos Downing, Assistant Professor Clyde Stiner, and Mr. Earl Dent. They were responsible for the following courses:

- #100 Introduction to Vocational Education
- #201 Trade and Job Analysis
- #202 Organizational of Instructional Material
- #203 Methods of teaching Occupational Subjects
- #204 Vocational Tests and Measurements
- #205 Shop Management
- #206 Conference Method of Teaching
- --- Forman Conference Leadership (no college credit)
- #207 Educational & Vocational Guidance
- #208 History and Philosophy of Vocational Education
- #209 Organization and Administration of Vocational Education
- #210 Psychology Applied to Occupational Teaching
- #211 Industrial Relations
- #212 Developing Content for shop related subjects
In 1947 and 1948, Downing and Stiner functioned as trade and industrial teacher educators while Dent took care of the Conference Leadership responsibilities. John Doughman also started a small materials laboratory at the University which was later transferred to The Ohio State University where it was, in turn, developed into one of the finest in the nation. (See The Ohio State University History.)

The 1947-48 catalog was the last in which vocational education courses were listed. In addition to the above courses, six hours of engineering drawing and twenty-four hours in a major field were required to obtain a Bachelor of Science in Education and a Smith-Hughes certificate.

In 1948 all Trade and Industrial Education courses were moved to Kent State University about fifteen miles east of the City of Akron.

The following excerpt from the 1947-48 Annual Report of the Dean of the College of Education to the President indicates the importance of this distance.

The cooperation which has existed since 1927 between the State Board of Education and the University of Akron has been terminated. The University of Akron felt that inasmuch as the Department of Vocational Education was interested in serving the entire section of north-eastern Ohio, it might more properly be associated with Kent State University. Consequently, the activities of this department were taken over by Kent State University beginning July 1, 1948.
It would appear that in the midst of the post-war era of tremendous educational growth, the administration of the University of Akron chose only to serve the needs of its own urban community. It would also seem that it chose to willingly relinquish the responsibilities connected with serving the trade and industrial educational needs of Northeastern Ohio to the then relatively small Kent State University located in suburbia. In an interview with Robert M. Reese, then the Trade and Industry State Supervisor, some important causitive facts that led to this transfer were brought out.

When Reese arrived on the scene, he tried to rectify two shortcomings that were, to him, glaringly apparent: 1) the inconsistent partiality shown some of the heads of trade and industrial teacher education at the various institutions which had resulted in double and triple salaries for some, while others serving in comparable positions were held to the minimum; 2) the drain of vocational funds to these municipal institutions that demanded one hundred percent reimbursement for all of their trade and industrial programs, which became difficult to justify economically in view of the fact that there was a chance that a move to the state universities could cut costs in half.

Additionally, Reese was aware of the common municipal institutions' practice of charging two and three times the tuition to students residing outside
their city limits. For vocational instructors, who in many cases traveled great distances to these institutions in order to complete their certification requirements, this created a financial hardship which in some instances resulted in their resignation.

To remedy the problem of exhorbitant salaries for the chosen few, Reese set in motion a plan of equalization that resulted in one or two resignations. He solved the problem of one hundred percent reimbursement to the three municipal institutions at Cincinnati, Toledo and Akron by first contacting the state institutions in these same areas to determine if they were willing to assume teacher education responsibility on a 50-50 basis; second, he very adroitly let the municipal institutions know that the State Department of Vocational Education would only be reimbursing fifty percent of their trade and industrial program costs. If they did not agree, he had the following state institutions ready to step into the breach: Miami University at Oxford for the University of Cincinnati, Bowling Green State University for Toledo University and Kent State University for Akron University. Both Cincinnati and Toledo Universities agreed to shoulder fifty percent of the total cost for trade and industrial teacher-education programs under their jurisdiction.

At Akron University, on the other hand, the
administrators were not satisfied with the amount of money they were receiving under the full reimbursement policy, therefore they would not even consider any reduction in funds for their programs. Akron University, therefore, chose to give up being a trade and industrial teacher-education institution, perhaps thinking this action would force the State Department of Vocational Education to meet their full reimbursement demands. This conjecture proved to be their undoing. Reese merely switched all vocational trade and industrial services to Kent State University where they have continued to experience growth unequalled by any other institution in the state.

Kent State University

In addition to the transfer of trade and industrial teacher education services to Kent State University other changes were made in regards to personnel. Dallos Downing, who has Head Teacher Educator at Akron University, joined the psychology department at Kent State. Charles B. Hurst, who had functioned as a teacher educator at Toledo University, assumed the same role at Kent State. Clyde E. Stiner made the move, however Earl Dent drops from sight as does the whole industrial leadership program until 1955.

The catalog of 1949-50 indicates that a bachelors degree in trade and industrial education could be obtained provided the student's trade background was sufficient
to meet the state certification requirements.

The regular listing of trade and industrial education state certification courses was quite extensive in scope:

T & I 101-A-B-C Introduction to Vocational trade and Industrial teaching - 3 sections

T & I 102 Teaching part time classes in industrial education

T & I 201, A-B-C Teaching methods and techniques in trade and industrial education - 3 sections

T & I 202 Shop laboratory organization and management

T & I 203 Evaluating techniques and practices in trade and industrial teaching

T & I 204, A-B-C Selection and Organization of subject matter in trade and industrial education - 3 sections

T & I 205 Techniques of improving trade skills and technology

T & I 301 Trade experience: technology

T & I 302 Trade experience: manipulative

T & I 303 Organization of a local trade and industrial education program

T & I 401 Determining trade and industrial education needs

T & I 402 History and philosophy of vocational education

T & I 403 Organization and administration of trade and industrial education

T & I 404 Supervision of trade and industrial education

T & I 405 Administration vocational education

T & I 406 Supervised apprentice teaching
It would seem, from the preceding list of courses with their various sections, that trade and industrial education had gained in popularity in moving to another institution.

The 1953-54 General Catalog and announcements again lists the courses leading to a trade and industrial degree along with basically the same trade and industrial course listings necessary for state certification.

Skipping to 1963 we note very little change in course offerings over this period with the exception of course #419 - "Organizing and operating a diversified cooperative training program", being added to the list of trade and industrial courses being offered.
The 1965-67 catalog drops all trade and industrial courses and indicates that they are now listed under the division of Trade and Industry. These courses are now combined in a trade and industrial degree program that was previously listed separately. The 1969-71 catalog changes somewhat and now lists a degree program in Vocational Trade and Industrial Education and separately lists under a vocational education many of the courses that were previously mentioned under trade and industrial education. Additionally, courses in manpower training, business education and distributive education are also listed under the same heading.

As one can readily see, tremendous growth is reflected in the courses that were being offered at Kent State University.

Evidence of further growth is apparent in the trends in trade and industrial personnel. In 1948 Charles B. Hurst along with Clyde Stiner set up the new trade and industrial programs. Hurst left in 1951 and Stiner took over as head teacher educator, a position he held until 1964.

When Hurst left John Peterson replaced him and served until 1956.

1956 is the beginning of a personnel expansion cycle that has continued until the present.
1956-63  Gordon McMahon - Trade and Industrial Teacher Educator

1956-66  Paul Sherck - Trade and Industrial Teacher Educator

1959-69  Lawrence W. Smith - Trade and Industrial Teacher Educator (based at Cleveland office)

1963-Present  Don Hogan - Trade and Industrial Teacher Educator (from 1955-63 was involved in industrial leadership)

1964-Present  Dr. Charles Nichols replaced Mr. Stiner as head teacher educator

1964-69  Robert Andreyka - Trade and Industrial Teacher Educator

1965-Present  John Ward - Trade and Industrial Teacher Educator

1966-Present  Russell Gardner - Trade and Industrial Teacher Educator

1966-Present  Pete Angelo - Trade and Industrial Teacher Educator

1967-Present  Ray Jacobs - formerly in manpower training; now Trade and Industrial Teacher Educator

1968-70  Tom Hyde - Trade and Industrial Teacher Educator - presently functioning as a supervisor in the State Department of Vocational Education

1968-Present  Carl Gorman - Trade and Industrial Teacher Educator presently serving as a coordinator of the Educational Professional Development Act (E.P.D.A.) as it applies to the teacher training of the tradesman involved in vocational secondary education.

1969-Present  Ted Fait

1969-Present  William Sutton

1969-Present  James Heller

1969-Present  Don Lenhart
Additionally, Charles Getz has served as the fire service coordinator for the Northeast area since 1957. In 1963, when Don Hogan moved to the trade and industrial teacher education service, Hillary Henges was his replacement and served in the leadership area until 1970.

John Ryan, also functioned as a part of the faculty in leadership training while employed (in 1956) by the Cleveland City Schools until his death in 1970.

Keeping up with the tremendous industrial growth of four of the larger cities in Ohio is quite an undertaking. Under the able leadership of Dr. Charles Nichols, Kent State University has more than met the challenge.

The University of Cincinnati

Although the University of Cincinnati was established as early as 1870 by the Ohio General Assembly, the academic department was known as the McMicken College of Liberal Arts.

In its first circular of courses in 1875-76, the McMicken College of Liberal Arts indicated it offered three degrees in the following areas:

1. The Classical Course - B.A. Degree
2. Civil Engineering Course - B.S. Degree
3. Scientific Course - C.E. Degree

(We note that two of these degree programs are not considered to be "liberal arts" according to present standards.) The McMicken College was organized in 1874.
when three professors and two instructors were appointed to serve as faculty members in a building on Franklin Street.

Some thirty years later the University was still functioning primarily as a liberal arts institution, although the enrollment in engineering classes totaled ninety-seven as compared with four hundred thirty-one in liberal arts. 221

The University's curriculum was disseminated through its affiliation with local institutions for teaching art and music and with professional colleges of law and medicine. The technical divisions originated when instruction in civil engineering was offered by two mathematic professors. 222

According to the 1904–05 University of Cincinnati catalog, the Technical School of the University of Cincinnati was founded in 1886 to supply Cincinnati's need for a manual training school. For several years it was located in the north wing of the Music Hall, and in 1901 it was officially transferred to the University where a permanent technical school building was erected in Burnet Woods.


222 Ibid., p. 61.
The school gives a three years' manual training high school course. The work is based upon the requirements for admission to the leading universities. The manual training side of the students' education consists of three years of drawing and three years of shop work. The drawing includes free-hand, mechanical and architectural drawing, and is so presented as to give the student an idea of the actual work of a draftsman. The three years of shop work are divided equally among the woodshop, forging and machine shop.

Admission

Candidates for admission to the first-year class should be fourteen years of age, and must, in general, be prepared for entrance to the high school.

Transcripts from any acceptable school will be admitted without examination, upon presenting a certificate, signed by the Principal of the school, certifying that the applicant has completed all the work required for admission to the high school.

Here again it would seem that a higher education institution was involved in teaching secondary education courses.

In another section of the same catalog, the name of Herman Schneider appears for the first time as a professor in civil engineering.

Dr. Schneider was a firm believer in the important vocational concept that work must be performed under the exact conditions and surroundings found in industry. His experiments with his students who worked in industry on a cooperative basis were considered revolutionary in educational circles.

223 University of Cincinnati catalog 1904-05, pp.87-88.
He was a man of strong convictions, as evidenced in the Magruder papers, who firmly believed that: "theory can be learned in school; an understanding of man and his mechanisms can be learned only where they operate."

Schneider's ideas on this matter are still being utilized in many educational fields and most assuredly in vocational cooperative education programs at the secondary level.

Between 1904 and 1920-21 little or no mention was made of the technical institute in the university catalogs. However, vocational education is mentioned for the first time during the 1920-21 year with no listing of faculty members.

In the 1921-22 catalog, vocational education was listed under the college for teachers heading. The following persons were designated as the instructors:

David James McDonald - Professor of Vocational Education

L. A. Flagler - Asst. Professor of Vocational Education

Silvia Sicha - Asst. Professor of Vocational Education

Clare G. Sharkey - Sub-Director of Vocational Education

A catalog note indicates that the staff devoted its' energies exclusively toward preparing teachers of vocational subjects in six areas:
A. Vocational teachers in service
B. Teachers of shop subjects
C. Teachers of academic subjects related to the trades
D. Teacher of retail subjects
E. Teacher of foremanship classes
F. Instructor foreman

At this point, confusion looms as to the status of Professors McDonald and Sicha, because these same people are listed as faculty members in vocational education at The Ohio State University.

The mystery of their actual location can be explained between 1922 and 1927 because vocational education was dropped from all course listings in the University of Cincinnati catalogs.

Of the four teachers listed in the 1921-22 catalog, the last man, Clare G. Sharkey, is to become well-known in vocational education throughout the State. (See Chapter IV.)

Under extension courses listed in the 1927-28 catalog vocational education subjects returned:

(1st Semester)

#185 Vocational psychology and Vocational guidance
   Mr. Yeuell

#1 History and Philosophy of Vocational Education
   Ralph L. Jacobs

#3 Occupational Adjustment
   Ralph L. Jacobs
In the 1932–33 school year vocational education was listed under the Teachers College with Ralph L. Jacobs as advisor. Here again, a familiar pattern is noted in that the University offered a degree in vocational education. A diploma was offered to those who only completed sixty hours of the vocational subjects and could meet the state certification requirements.

The picture remained somewhat the same until 1942–43 when Harry W. Paine was listed as the advisor for students in the field of trade and industrial vocational education. The catalog for that year noted the fact that:

The Department of Vocational Education of the Teachers College has been designated by the State Board for Vocational Education, Division of Trades and Industries, to carry on Vocational Teacher Improvement Courses for State Certification Credit in Southwestern Ohio. Employed vocational teachers and tradesmen preparing to enter the vocational teaching field are eligible for enrollment in these courses during the first and second semester. During the summer sessions, the vocational classes are also open to school administrators and any others interested in the vocational education movement.224

224 University of Cincinnati, 1942–43 Catalog, p. 40.
In 1952-54 the catalog listed only two persons—Mr. Dennis H. Price and Mr. Chelsea Bailey as being responsible for the University's thirty vocational courses.

For the year 1959-60, vocational trade and industrial education was still listed under the teachers college, only the name has changed.

The 1966-67 catalog, the number of course offerings was reduced to a total of twelve, and they were very similar to, if not the same as, those listed at the Kent State University.

Course offerings in vocational education for the 1969-70 school year now number twenty. Most courses are the same as those offered at other institutions the only difference being in that a practical arts education course, which is purported to bring together practical arts, vocational education, including industrial arts and trades and industries for classroom specialists and administrators is offered.

Problems apparently arose in training the personnel responsible for the trade and industrial services at the University of Cincinnati, inasmuch as the catalogs did not list names, and when they did, titles and other specifics were not discernible.

Ralph L. Jacobs is said to have been the first trade and industrial teacher educator at the University, however when he was designated as such is not clear—his tenure lasted from 1927 to 1942.
In 1942, Harry Paine, who transferred from Toledo University, functioned as head teacher educator, a post he held for the next ten years. Serving with him during this time were the following people:

- **Chelsia Bailey** - Leadership
- **Elmer Weiss (1943-63)** - Fire Service (was originally hired on a part time basis - later was transferred to O.S.U. where he continued to serve in a full time capacity until his retirement)
- **Harry Ohlrich (1943-69)** - Fire Service
- **Manning** - Fire Service
- **Walter Lauder (1939-48)** - Fire Service
- **Charles McManus (1939-48)** - Fire Service

Since 1952, Dr. Dennis H. Price has served as the institution's Head Teacher Educator. During his administration, the following people have served in the trade and industrial services:

- **Ray DeForest (1943-56)** - Trade and Industrial Teacher Educator
- **Gordon McMahon (1953-56)** - Trade and Industrial Teacher Educator
- **Charles Nichols (1956-64)** - Trade and Industrial Teacher Educator

(Dr. Nichols is presently Head Teacher Educator at Kent State University.)

- **James Snyder (1950's)** - Trade and Industrial Teacher Educator
- **Richard Outcalt (1964- )** - Trade and Industrial Teacher Educator
Robert Sundin (1965- ) - Trade and Industrial Teacher Educator

Donald Garrison (1967- ) - Trade and Industrial Teacher Educator

Frank Reynolds (1969- ) - Manpower Trade and Industrial Teacher Educator

In 1963, Dr. Wm. Stewart replaced Dr. Arran Adams in the area of industrial leadership, and, in 1970, Willis Peterson replaced Harry Ohlrich in fire service.

**Toledo State University**

Since the early beginnings of the University have been discussed in a previous chapter, and since all other teacher education institutions have had their early beginnings outlined; it seems appropriate here to point out that the Toledo University is the only institution to be initiated for the prime purpose of meeting the industrial needs of the community.

Between 1915-19 vocational trade and industrial education was hidden in the evening industrial division classes:

The purpose of these classes is to give men employed during the day an opportunity to get instruction that will benefit them in their trade.

It is the purpose of the College of Industrial Science to develop extension classes for any industry in which there is a legitimate demand for instruction.
Classes meet from 7:00 to 9:00 P.M. beginning September 12th or about October 1st, continuing for one year or for 20 weeks. The following courses are offered: Mathematics for Machinists, Mathematics for Electrical Workers, Blue Print Reading, the Use of Drawing Instruments, Elementary Mechanics, the Fundamentals of Electricity, Bench Work, Lathe Work, Milling Machine Work, Shop Theory, Gears and Gearing, Elementary Machine Design, Reinforced Concrete, Form Design, the Use of the Slide Rule, and the Use of the Carpenters' Square.225

The 1922 Evening University catalog presented it a little differently:

The Industrial Division of the University has been organized to afford those who have not had an opportunity to continue their work through high school a chance to continue their education along industrial lines. While the courses of study described later do not represent a complete educational program, still they present opportunities whereby employees may broaden their knowledge of their chosen branch of work or may prepare for entry into newer and higher branches.226

Up until 1927-28 there was no mention of vocational education courses in either the day or evening school catalogs. Six courses were listed, but not instructor was indicated:

#231 Occupational Analysis

#234 History and Philosophy of Vocational Education

#236 Educational and Vocational Guidance

#241 Organization and Administration of Vocational Education

225University of Toledo, Catalog and Announcements. March, 1917-18, p. 84.

226Evening University, Industrial Certificate Courses, (Toledo, Ohio: The University of the City of Toledo).
The 1929-30 catalog listed a Professor Harry Paine in vocational education and noted some course changes:

- Shop Management
- Philosophy of General Continuation School
- Organization of Industrial Material
- Developing content of shop and related courses
- Determination of teaching content in the general continuation schools

It would appear that from 1931 to approximately 1935 Professor Paine, in addition to teaching trade and industrial courses on campus, was also listed as teaching extension courses in nearby cities such as Findlay, Fremont, and Galion.

In general, all trade and industrial certification courses were listed and the University was also offering a degree in vocational education very much similar to the other teacher education institutions previously mentioned. The 1942-43 bulletin of the University of Toledo mentioned vocational education in conjunction with training for defense workers under the War Production Board, Training Within Industry Division, with H. L. Allen listed as the area coordinator and assistant professor of vocational education.

The 1944-45 bulletin only listed four courses, with Assistant Professor Kinker and Associate Professor
Felker as instructors. The vocational department was then under the jurisdiction of the College of Education.

According to the 1949 bulletin, fourteen courses in vocational education—mostly in the trade certification area—were offered with Associate Professors Kinker and Felker serving as instructors.

Between 1953 to 1969, there was little change in the course offerings except some condensation and refinement and continued expansion to total approximately twenty-seven course offerings.

In an attempt to trace the institution's personnel in the trade and industrial service areas, the following teacher educators can be listed:

1929-1943 Dr. Harry Paine
1942-1965 Charles A. Felker
1944-1949 Robert Kinker
1946-1948 Charles B. Hurst
1964- Eric Williams
1965- Paul Muntz
1966- Don Scott
1968- Harry Tolles
1969- Roy Miller
1969- Henry Pucilowski

The Industrial Leadership Consultant Services were handled by Paine and Felker along with their regular teacher education duties during the World War II era.
In 1956 Paul Muntz was retained and he functioned in this role until 1965 when he assumed new duties in the trade and industrial teacher education service. Allen Cloykendale replaced Muntz, however he left in 1969. The following persons have worked in the fire service area over the years; R. L. Smith, Asa Shefield and Glen Rehfess, their dates of tenure cannot be found. Mr. Frank Potts, who was originally at The Ohio State University, now serves the area as a Fire Service Coordinator.

We have, in the foregoing pages attempted to trace some of the early beginnings of the designated trade and industrial teacher education schools as they have struggled in some cases, to emerge from barely being tolerated to a position of academic importance on all campuses.

The growth trend is apparent in all four of the trade and industrial teacher education institutions and, according to Mr. Harry Davis, Assistant State Director for Trade and Industrial Education, they will continue to grow at a rapid rate for the next five years.

Mr. Davis' role is to administer to the needs of the teacher education institutions and the areas under their jurisdiction through administrative and supervisio

...
Toledo University - Northwest portion
Kent State University - Northeast portion
The Ohio State University - Center and Southeast portion
University of Cincinnati - Southwest and South portion
(See Appendix B.)

Davis has, in order to help in the administration and supervision of the entire state, retained Ralph Neal, former Southeast and Southwest area trade and industrial supervisor, as his assistant. To further meet needs of industry and schools alike, he has again reapportioned the state into four different areas of supervision and has retained the following four people not only as supervisors but also to help solve problems in any capacity and at any level as they may develop.

Jack Volkmer - Northwest area
Don Bewley - Northeast area
Robert Wright - Southwest area
Tom Hyde - Southeast area
(See Appendix C.)

Together with statewide ancillary personnel Charles Dygert, Supervisor of Apprenticeship and Youth Activities and James E. Bartholomew and Elizabeth Gurney, Supervisors of Health Education, these men have helped to translate Ohio's theoretical vocational education program into a workable reality.
CHAPTER VIII
GROWTH OF TRADE AND INDUSTRIAL EDUCATION
IN OHIO IN RECENT YEARS

Ohio's reputation as a leader in the field of vocational education was bolstered by the actions of a number of individuals and organizations throughout its history. Men such as Schneider, Magruder, Reese and Shoemaker, working with the National Society for the Promotion of Industrial Education subsequently the Ohio Vocational Association, the Vocational Industrial Clubs of America and similar groups, helped to forge new directions in vocational education on the state as well as on the national level.

Their actions were not isolated, nor were they random; rather, they were systematic attempts to meet the needs of a rapidly changing industrial society during a period of over sixty years. The result is Ohio's modern vocational education program which yearly provides instruction for over 80,000 students in over one hundred trade and industrial areas ranging from air conditioning to practical nursing and police work.

250
Throughout Ohio's varied experience in trade and industrial education, two themes are constantly present: a) growth in absolute figures, and b) increasing responsiveness to changing industrial trends and needs.

Changing Needs and Programs

While the federal government began to take significant, though somewhat cautious, steps to provide vocational education with the passage of the Morrill Act, it wasn't until the Smith-Hughes Act was passed in 1917 that trade and industrial education development received a federal boost.

In a detailed report to the Superintendent of Public Instruction in 1925, Trade and Industrial Supervisor E. L. Heusch summed up the progress that had been made. At that time, trade and industrial training centered on: a) the metal trades, b) the building trades, c) the pulp and paper industry and d) the ceramics industry. To be sure, the vocational schools offered other courses, but Heusch singled out only these four as major areas of concentration.

By 1935, vocational education supporters had begun a practice of systematic research and surveying.

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to determine how vocational education could be made more responsive to the needs of Ohio's citizens and to the needs of industry. These early studies set the pattern for a major function within Ohio's modern vocational education program.

According to State Department of Education figures, between July and December of 1947, twenty different major trade and industrial offerings were being offered in unit day trade, part-time co-operative, part-time trade extension and evening trade extension schools. 228

As the American economy continued to diversify and industry became more technically-oriented, not only did enrollments in trade and industrial education programs continue to rise, but the number of programs also increased, encompassing new and developing fields within the various trades and industries. (See Table 9 on page 253-254.)

During the twenty-two year period, the number of different types of trade and industrial programs doubled. In 1947, they included such fields as air-craft, automotive, bricklaying, carpentry, commercial art, cosmetology, iron and steel manufacturing, and plumbing. Twenty years later, these traditional occupational courses were supplemented by such programs as air conditioning, radio and television, dry cleaning, and stationary engineering occupations.

228 State Department of Education. "Enrollments by Trades for Period July 1, to December 31, 1947" (Division of Vocational Education, Trades & Industries, Columbus, Ohio, dated January 15, 1948), mimeo.
TABLE 9

NUMBER OF STUDENTS ENROLLED IN IN-SCHOOL AND ADULT TRADE AND INDUSTRIAL VOCATIONAL EDUCATION IN OHIO PLUS NUMBER OF PROGRAMS BEING OFFERED 1919-1969

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Offerings*</th>
<th>In-School Course Enrollment</th>
<th>Adult Course Enrollment</th>
<th>Total Enrollment**</th>
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<td>1,400</td>
<td>4,400</td>
<td></td>
<td>5,800</td>
</tr>
<tr>
<td>1920</td>
<td>700</td>
<td>7,400</td>
<td></td>
<td>8,100</td>
</tr>
<tr>
<td>1921</td>
<td>1,200</td>
<td>10,000</td>
<td></td>
<td>11,200</td>
</tr>
<tr>
<td>1922</td>
<td>2,200</td>
<td>8,200</td>
<td></td>
<td>10,400</td>
</tr>
<tr>
<td>1923</td>
<td>4,500</td>
<td>8,500</td>
<td></td>
<td>13,000</td>
</tr>
<tr>
<td>1924</td>
<td>5,400</td>
<td>8,400</td>
<td></td>
<td>13,800</td>
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<tr>
<td>1925</td>
<td>9,400</td>
<td>8,600</td>
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<td>1926</td>
<td>8,500</td>
<td>8,700</td>
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<td>17,200</td>
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<tr>
<td>1946</td>
<td>6,100</td>
<td>12,500</td>
<td></td>
<td>18,600</td>
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Source: Ohio Trade and Industrial Education Service Program Analysis Chart 1. (Approximations from line representation.)
### TABLE 9—Continued

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<thead>
<tr>
<th>Year</th>
<th>Offerings*</th>
<th>In-School Enrollment</th>
<th>Adult Course Enrollment</th>
<th>Total Enrollment**</th>
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<td>19,138</td>
<td>25,505</td>
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<td>1948-49</td>
<td>58</td>
<td>5,733</td>
<td>24,355</td>
<td>29,988</td>
</tr>
<tr>
<td>1949-50</td>
<td>53</td>
<td>7,007</td>
<td>22,024</td>
<td>29,031</td>
</tr>
<tr>
<td>1950-51</td>
<td>53</td>
<td>6,227</td>
<td>18,607</td>
<td>25,717</td>
</tr>
<tr>
<td>1951-52</td>
<td>50</td>
<td>5,323</td>
<td>16,049</td>
<td>21,372</td>
</tr>
<tr>
<td>1952-53</td>
<td>56</td>
<td>4,732</td>
<td>25,986</td>
<td>30,718</td>
</tr>
<tr>
<td>1953-54</td>
<td>51</td>
<td>4,806</td>
<td>24,628</td>
<td>29,434</td>
</tr>
<tr>
<td>1954-55</td>
<td>52</td>
<td>4,813</td>
<td>25,717</td>
<td>30,530</td>
</tr>
<tr>
<td>1955-56</td>
<td>53</td>
<td>5,076</td>
<td>32,256</td>
<td>37,377</td>
</tr>
<tr>
<td>1956-57</td>
<td>52</td>
<td>4,879</td>
<td>35,769</td>
<td>40,648</td>
</tr>
<tr>
<td>1957-58</td>
<td>58</td>
<td>5,239</td>
<td>33,647</td>
<td>38,886</td>
</tr>
<tr>
<td>1958-59</td>
<td>67</td>
<td>4,308</td>
<td>33,628</td>
<td>38,936</td>
</tr>
<tr>
<td>1959-60</td>
<td>67</td>
<td>5,463</td>
<td>39,876</td>
<td>45,343</td>
</tr>
<tr>
<td>1960-61</td>
<td>72</td>
<td>5,699</td>
<td>41,534</td>
<td>47,233</td>
</tr>
<tr>
<td>1961-62</td>
<td>79</td>
<td>5,888</td>
<td>45,484</td>
<td>51,372</td>
</tr>
<tr>
<td>1962-63</td>
<td>83</td>
<td>6,266</td>
<td>44,543</td>
<td>50,809</td>
</tr>
<tr>
<td>1963-64</td>
<td>94</td>
<td>7,721</td>
<td>56,038</td>
<td>63,759</td>
</tr>
<tr>
<td>1964-65</td>
<td>145</td>
<td>3,347</td>
<td>58,228</td>
<td>61,575</td>
</tr>
<tr>
<td>1965-66</td>
<td>143</td>
<td>11,250</td>
<td>61,842</td>
<td>73,092</td>
</tr>
<tr>
<td>1966-67</td>
<td>97</td>
<td>13,920</td>
<td>64,221</td>
<td>78,141</td>
</tr>
<tr>
<td>1967-68</td>
<td>106</td>
<td>17,829</td>
<td>69,422</td>
<td>87,251</td>
</tr>
<tr>
<td>1968-69</td>
<td>104</td>
<td>16,750</td>
<td>67,909</td>
<td>84,659</td>
</tr>
</tbody>
</table>

*Number of offerings not available for 1918-1947

**Any discrepancy between the total enrollments and the sum of in-school and adult enrollments may be explained by typographical or printing errors in the source material.

Source: State Department of Education. "Enrollment Summary by Trades" (Division of Vocational Education, Trade and Industrial Service, Columbus, Ohio), mimeo.

The increased specificity within the various trade and industrial fields reflects not only a response to the continued industrialization and growing diversity within the American economy, but also a corresponding demand for better skilled workers to compete in the increasingly technologically-oriented economic sector.
Enrollment Statistics and Types of Classes

Enrollment figures for all programs administered by the State Division of Trade and Industrial Education document the growth of the program during the past two decades. (See Table 10.)

The 90,344 students enrolled in trade and industrial education programs in 1968-1969 represents a 72% increase over the 1947 figure. While the overall number of students increased, the importance of the various types of classes (as measured by enrollment figures in the following table) changed during this same period.

TABLE 10
ENROLLMENT BY TYPES OF TRADE AND INDUSTRIAL COURSES 1918-1968

<table>
<thead>
<tr>
<th>Year</th>
<th>Full-time</th>
<th>Part-time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>day classes</td>
<td>evening</td>
</tr>
<tr>
<td>1918</td>
<td>840</td>
<td>4,291</td>
</tr>
<tr>
<td>1919</td>
<td>379</td>
<td>6,632</td>
</tr>
<tr>
<td>1920</td>
<td>137</td>
<td>6,343</td>
</tr>
<tr>
<td>1921</td>
<td>166</td>
<td>8,866</td>
</tr>
<tr>
<td>1927</td>
<td>1,215</td>
<td>6,373</td>
</tr>
<tr>
<td>1932</td>
<td>3,601</td>
<td>7,749</td>
</tr>
</tbody>
</table>

Note: Changes in subheadings in full-time and part-time categories represent source format variations.
### TABLE 10—Continued

<table>
<thead>
<tr>
<th>Year</th>
<th>Full-time</th>
<th>Part-time (adult &amp; post-secondary)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unit Day</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Trade</td>
<td>Cooperative</td>
</tr>
<tr>
<td>1947-48</td>
<td>4,457</td>
<td>1,366</td>
</tr>
<tr>
<td>1948-49</td>
<td>4,629</td>
<td>1,102</td>
</tr>
<tr>
<td>1949-50</td>
<td>5,769</td>
<td>1,238</td>
</tr>
<tr>
<td>1950-51</td>
<td>4,987</td>
<td>1,240</td>
</tr>
<tr>
<td>1951-52</td>
<td>3,848</td>
<td>1,475</td>
</tr>
<tr>
<td>1952-53</td>
<td>3,735</td>
<td>997</td>
</tr>
<tr>
<td>1953-54</td>
<td>3,734</td>
<td>1,027</td>
</tr>
<tr>
<td>1954-55</td>
<td>3,673</td>
<td>1,140</td>
</tr>
<tr>
<td>1955-56</td>
<td>3,833</td>
<td>1,243</td>
</tr>
<tr>
<td>1956-57</td>
<td>3,608</td>
<td>1,271</td>
</tr>
<tr>
<td>1957-58</td>
<td>3,000</td>
<td>1,240</td>
</tr>
<tr>
<td>1958-59</td>
<td>4,215</td>
<td>1,093</td>
</tr>
<tr>
<td>1959-60</td>
<td>4,440</td>
<td>1,023</td>
</tr>
<tr>
<td>1960-61</td>
<td>4,693</td>
<td>1,006</td>
</tr>
<tr>
<td>1961-62</td>
<td>4,748</td>
<td>1,140</td>
</tr>
<tr>
<td>1962-63</td>
<td>5,089</td>
<td>1,177</td>
</tr>
<tr>
<td>1963-64</td>
<td>6,034</td>
<td>1,687</td>
</tr>
<tr>
<td>1964-65</td>
<td>5,427</td>
<td>1,920</td>
</tr>
<tr>
<td>1965-66</td>
<td>8,564</td>
<td>2,686</td>
</tr>
<tr>
<td>1966-67</td>
<td>10,221</td>
<td>3,699</td>
</tr>
<tr>
<td>1967-68</td>
<td>11,297</td>
<td>6,532</td>
</tr>
</tbody>
</table>

Note: Figures for Technical and Pre-Employment classes were not included in state recordings until the years indicated in this table.

In an effort to capsulize the figures on the preceding table for the twenty year period from 1947-1968 we arrive at the following computations which show a net gain or loss in enrollment in the various types of trade and industrial education classes:

<table>
<thead>
<tr>
<th>Type of Class</th>
<th>Enrollment gain or loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>unit day classes</td>
<td>+ 6,840</td>
</tr>
<tr>
<td>co-operative classes</td>
<td>+ 1,166</td>
</tr>
<tr>
<td>pre-employment classes (1952-68)</td>
<td>+ 1,962</td>
</tr>
<tr>
<td>adult extension classes</td>
<td>+45,186</td>
</tr>
<tr>
<td>apprentice classes</td>
<td>- 513</td>
</tr>
</tbody>
</table>

As you can see from the above figures, there was a gradual de-emphasis in apprenticeship training programs. The most significant increase, in terms of absolute figures, was in adult extension programs. In fact, the approximately 60,000 adult workers in Ohio enrolled in some type of trade and industrial education course in 1967 represented approximately four percent of the entire employed population of the state according to U.S. Department of Education figures.229

Between 1950 and 1960, there was a 7.9% increase in the number of craftsmen, foremen, operatives and kindred workers in Ohio. At the same time, there was a

53.1% increase in adult extension course enrollments—6.5 times the corresponding employment increase.230 Between 1960 and 1967, the last date for which official figures are available, there was a 60% enrollment increase.231 These figures indicate that growing numbers of men and women already in the working force are benefiting from supplementary courses to increase and update their skills.

Post-Secondary Trade and Industrial Education Centers

By 1963, a total of ten 2-year post-high school technical education centers had been established in Ohio under the auspices of state legislation designed to permit the organization of area vocational education centers to serve two or more school districts.232 In 1964, an additional center was established in cooperation with the Columbus School Board. By 1969, these post-secondary area vocational education centers were responsible for providing trade and industrial education, on a full-time basis, to 2,531 men and women.233

230Ibid., p. 6.
231Ibid., p. 4.
233"Enrollment Summary by Trades for Fiscal Year 1968-69", Division of Vocational Education, Trade and Industrial Service, Columbus, Ohio, mimeo.
Expenditures for Trade and Industrial Education

The significant increases in the number of trade and industrial students and the corresponding growth of more specialized courses to meet the needs of both students and industry has been partially achieved by increasing federal, state and local expenditures. (See Table 11.)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>Federal</th>
<th>State and Local</th>
</tr>
</thead>
<tbody>
<tr>
<td>1958</td>
<td>$2,589,282</td>
<td>$634,669</td>
<td>$1,954,613</td>
</tr>
<tr>
<td>1960</td>
<td>2,809,924</td>
<td>632,832</td>
<td>2,177,092</td>
</tr>
<tr>
<td>1961</td>
<td>2,936,722</td>
<td>632,140</td>
<td>2,304,581</td>
</tr>
<tr>
<td>1962</td>
<td>3,003,402</td>
<td>631,103</td>
<td>2,372,299</td>
</tr>
<tr>
<td>1965</td>
<td>4,663,517</td>
<td>1,072,026</td>
<td>3,591,391</td>
</tr>
<tr>
<td>1968</td>
<td>10,372,744</td>
<td>1,288,048</td>
<td>9,084,696</td>
</tr>
</tbody>
</table>

*Ohio's share of the federal vocational trade and industrial education funding under the various vocational education acts can be broken down as follows:

Vocational Education Act of 1963

<table>
<thead>
<tr>
<th>Year</th>
<th>Smith-Hughes</th>
<th>George-Barden</th>
<th>Vocational Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>1953-54</td>
<td>$159,093</td>
<td>$278,327</td>
<td></td>
</tr>
<tr>
<td>1954-55</td>
<td>159,093</td>
<td>360,061</td>
<td></td>
</tr>
<tr>
<td>1955-56</td>
<td>159,093</td>
<td>398,710</td>
<td></td>
</tr>
<tr>
<td>1956-57</td>
<td>194,079</td>
<td>518,011</td>
<td></td>
</tr>
<tr>
<td>1965</td>
<td>191,887</td>
<td>438,894</td>
<td>$441,345</td>
</tr>
<tr>
<td>1968</td>
<td>192,271</td>
<td>438,894</td>
<td>656,883</td>
</tr>
</tbody>
</table>


While these figures document steadily increasing federal allocations for Ohio's trade and industrial education programs, it is readily apparent that the financial responsibility still rested mainly with the state and local governments.

**TABLE 12**

STATE EXPENDITURES FOR TRADE AND INDUSTRIAL EDUCATION 1953-1962*

<table>
<thead>
<tr>
<th>Year</th>
<th>Expenditures</th>
</tr>
</thead>
<tbody>
<tr>
<td>1953-54</td>
<td>$277,696</td>
</tr>
<tr>
<td>1954-55</td>
<td>267,589</td>
</tr>
<tr>
<td>1955-56</td>
<td>284,121</td>
</tr>
<tr>
<td>1956-57</td>
<td>492,919</td>
</tr>
<tr>
<td>1958</td>
<td>656,485</td>
</tr>
<tr>
<td>1960</td>
<td>750,193</td>
</tr>
<tr>
<td>1961</td>
<td>819,197</td>
</tr>
<tr>
<td>1962</td>
<td>986,325</td>
</tr>
</tbody>
</table>

TABLE 13

LOCAL EXPENDITURES FOR TRADE AND
INDUSTRIAL EDUCATION 1958-1962*

<table>
<thead>
<tr>
<th>Year</th>
<th>Expenditures</th>
</tr>
</thead>
<tbody>
<tr>
<td>1958</td>
<td>$1,298,127</td>
</tr>
<tr>
<td>1960</td>
<td>1,426,899</td>
</tr>
<tr>
<td>1961</td>
<td>1,485,384</td>
</tr>
<tr>
<td>1962</td>
<td>1,385,974</td>
</tr>
</tbody>
</table>


Local appropriations, which in the early 1900's totalled three times as much as state allotments, have become proportionately smaller, but they still make up the major share of all expenditures for trade and industrial education in Ohio.

The experiences of Ohio's trade and industrial educators during this period of growth and development have provided a firm base on which the state can build to meet its current and future needs.

The License to Hunt

The vocational technical education concept in the State of Ohio has been very fortunate in that it has continued to grow without prostituting its strength and purposes. A modern day champion, James A. Rhodes, Governor of Ohio (1963-1970), early in his governorship recognized the merits of vocational education as one of
the major deterrents to the socio-economic ills of his state and the nation as a whole. His cooperation and backing has resulted in vocational technical education's greatest growth cycle in Ohio's history. An excerpt from his book an "Alternative to a Decadent Society" clearly pinpoints his position as he contemplates the ills of our nation:

Many of today's social and economic ills result from a lack of employment among the able-bodied. This lack of employment stems directly from inadequate education and training. Certain segments of our education system are antiquated and obsolete and must be updated if we are to successfully meet our growing domestic crisis.234

With a singleness of purpose he has set out to practice what he preaches, steadfastly maintaining that "Vocational education in the schools strikes at the root cause of unemployment and underemployment---lack of proper skills."235

He projects the theory that, in order for Ohio and Ohioans to prosper, the policy-makers must first take a good hard look at the potential of vocational education as it relates to the job profile of the state and its projected job needs.

Governor Rhodes goes on to say that Ohio is

---


235Ibid., p. 46.
experiencing the same socio-economic problems that are, in all probability, manifest in every state in the union. As a solution, he offers nine good reasons why vocational technical education is needed in Ohio:

- To help train the skilled workers needed for jobs in business and industry.
- To attract new industries to the state and to help present ones expand.
- To eliminate unemployment.
- To see that every Ohioan who wants a job is properly trained to hold one.
- To reduce the number of Ohioans who must depend on welfare because they cannot qualify for steady jobs.
- To compensate for the fact that most students do not go on to college.
- To provide training for the underemployed who seek new skills.
- To keep Ohio's economy prosperous through plentiful jobs and full employment.
- To help those persons currently employed upgrade their skills to meet changing job demands.236

The Governor states that these reasons fall well within the realm of vocational education which basically;

1. Prepares youth and adults for good jobs.
2. Retrains the unemployed.
3. Upgrades present skills.

[236ibid., p. 46.]
On July 19, 1968, his concerned involvement with the state's occupational needs led him to initiate a special vocational education committee charged with making studies and recommendations including proposals for organization financing and legislation. The Committee's official title became "The Governor's Task Force on Vocational and Technical Education." The Committee was primarily composed of non-vocational professional people who functioned under the chairmanship of Dr. John C. Ullery (M.D.) of the University Hospital, Columbus, Ohio.

On January 9, 1969, the Task Force made their report documenting Ohio's problems:

- A serious gap exists between the need for and the availability of vocational and technical education in Ohio.

- The present system of education is not relevant to the needs of 75% percent of the students.

- In a period of high employment, many young people are unemployed because they lack job training and skills. Many have never had jobs.

- Nearly a million Ohioans could get better jobs if they could get adult vocational or technical training.

- Ohio's gerrymandered school districts guarantee unequal educational opportunity.

- The need for school district reorganization is critical.

- Taxable property wealth per pupil varies from $3000 in one school district to $147,000 in another.
- In higher education, there is no basic formula for sharing costs among state government, local government, and the student.

- There is lack of adequate liaison between education and industry.

- The future economic growth of Ohio and Ohioans totally depends on the availability of jobs and the availability of trained persons for those jobs.

Among the solutions suggested by the Task Force were the following:

- A massive informational program is needed to gain recognition of the proper status and role of vocational and technical education. Learning a trade, skill, occupation or craft is just as worthy as learning a profession. Most jobs today, and nearly all new jobs in the future, will require some skill acquired through formal training.

- A new county-wide educational organization is needed. In the place of present County Boards of Education, County Councils of Education are proposed, empowered to levy county-wide income taxes to support employment-oriented education, to recognize and dissolve present school districts, and to assign pupils and teachers.

- The new County Councils of Education should have the power to act jointly with other counties for the benefit of employment oriented education.

- The State Superintendent of Public Instruction should establish and staff regional service districts to assist local schools in improving administration. The first task should be better space utilization.

- Organization of Joint Vocational School Districts should be on a complete county or multicounty basis.

- Opportunities for employment-oriented education should be broadly expanded. Vocational education facilities should be available to students 18 hours a day and 300 days a year.
- Protective laws governing employment of children must be so implemented as to encourage students to get work experience under school jurisdiction.

- Opportunities must be afforded for teacher retraining and orientation to expand employment-oriented teaching.

- The Superintendent of Public Instruction and Chancellor of the Board of Regents in the vocational and technical education areas, respectively, should have authority to license private schools for employment-oriented training.

- A new state-levied gross retail receipts tax of 1 percent should be earmarked for education.

- Minimum school operating tax millage requirements to qualify for state aid should be raised from 17.5 mills to at least 25 mills.

- An education income tax levied by a County Council of Education should be permitted as a means of partially replacing property taxes.237

The results of this study take on greater significance when one considers the impartiality of the committee members. (See Appendix D.)

Rhodes made note of their findings and recommendations, which only served to further justify his stand behind an education concept of considerable worth.

Governor Rhodes' major solution for the socio-economic needs of people is based upon the premise that basically most people want to work and that industry will locate anywhere skilled labor can be found—vocational

237Ibid., pp. 92-94.
education contrives to create a compatible union between
the two factions.

Working in tandem with Governor Rhodes, in con-
junction with the educational needs of the citizenry of
Ohio, has been the lot of Dr. Martin Essex, the States
Superintendent of Instruction. Dr. Essex, a general
educator caught in the vocational education vortex, has
emerged as one of its staunchest supporters. In November
of 1966 he was selected as the Chairman of the Advisory
Council on Vocational Education which was charged with
focusing upon the impact of the Vocational Education Act
of 1963 on a national scale. One year later, December 1,
1967, his committee had completed their national review
of vocational education and made a report that was to
create some far flung reactions. The subsequent enact-
ment of the 1968 Amendments to the 1963 Vocational Act
are directly derived from the Council's general report
entitled Vocational Education--The Bridge Between Man and
His Work.

On May 14, 1969, Dr. Essex initiated another
state study on vocational education which was conducted
by the newly formed Ohio Advisory Council for Vocational
Education. This Council chaired by Dr. Max Lerner, former
vocational educator now serving as President of the Lorrain
Community College, was made up of twenty-two representa-
tives of industry, agriculture, labor, education,
government, etc.—in short all those vitally concerned with the progress of vocational education. (See Appendix E.) The Council serves the State Board of Education in an advisory capacity evaluating the effectiveness and progress of Ohio's vocational education and making recommendation and reports to the Ohio citizens.238

One item that Dr. Lerner's committee report revealed was that high school vocational enrollment had increased from 60,000 in 1963 to 140,000 in 1970, with courses being offered in seventy-eight occupational areas. Another was that the 1968 Amendments to the Vocational Education Act have created a framework and provided financial assistance for a state-wide comprehensive vocational plan. This plan has been developed under the direction of Dr. Byrl Shoemaker, Director, Vocational Division of the State Department of Education.

Dr. Shoemaker is the man who presently serves on the firing line for all five occupational areas under the vocational umbrella.

In a speech, given to an O.V.A. Legislative Action Committee in December of 1968, he dramatically points up Ohio's course of action in the years to come. "At the national level vocational education has literally

238"Learning to Earn in Ohio through Vocational Education" (Worthington, Ohio: Advisory Council for Vocational Education, n.d.).
been given a hunting license by Congress when they passed the 1968 Amendments Bill...Vocational education will no longer be plagued with initiating 'stop-gap' or band-aid programs on a crises basis...in Ohio we must strive for three basic goals or concepts which must take place in the very near future in order to stem the tide of the unemployed and vocationally uneducated in the state of Ohio. The three goals in essence are (1) We must develop a zero reject program in vocational education. The idea here is to screen out absolutely no one from any phase or aspect of vocational education, regardless of their ability, education, physical or mental makeup. Some way—somehow, we are to find ways of educating every person so that each may become a contributing member to society as a whole.

(2) We must work toward a zero dropout record in vocational education. It is not enough that we educate only those who stay in school. We must make every effort to get the dropout back in school and into some type of an education where he can succeed.

(3) We must strive for 100 percent placement of vocational students. Their vocational training must be of such a nature as to make them readily employable now and in the future.239

Additionally, Shoemaker maintains that the attitude and climate of Ohio has never been better for the promotion of vocational education. Therefore, it becomes an absolute necessity that we put forth every effort to prove our worth in the attainment of the aforementioned goals. Any one who is in any way now

connected with vocational education should make a commitment to the extent that they will support, promote and expand vocational education in every way possible. We presently are in the throes of a growth cycle which is as follows:

1963 - we had 1,134 teacher units in vocational education
1965 - we had 1,404 teacher units in vocational education
1967 - we had 2,217 teacher units in vocational education
1969 - we had 3,179 teacher units in vocational education

We can project, from the above figures, an annual increase of approximately 700 or more teaching units in vocational education plus those resulting from an increased number of joint vocational schools.

In 1968, eleven joint vocational schools were already in full operation. These included: Eastland, EHOVE, Four County, Green County, Lake County, Penta County, Pioneer, Sandusky County, Springfield and Clark County, Tri-County and Pike County Joint Vocational Schools. Six more centers were under construction.

As Ohio moved into the 1970's, a total of twenty-three co-operative vocational education centers were authorized or in operation in various parts of the state bringing a wide range of job training courses to the less populated areas. In addition to the centers operating in

240 "The First Big Step Toward a Better Life for Ohioans," State Department of Education, Division of Vocational Education, Columbus, Ohio., p. 13.
1968, Ashtabula, Belmont, Knox, Montgomery, Muskingum, Scioto, Hamilton, Mahoning, Lorain, South Central Cuyahoga and Washington County Joint Vocational Schools, and Wayne Joint Vocational School in Smithfield had received strong public support. (The Sandusky County Center had also changed its name to Vanguard Joint Vocational School.)

From the aforementioned statistics, one can readily see that vocational education has been growing at a very healthy rate; but, with the new 1968 Amendments written into law, we could steal a phrase from the late Al Jolson when he'd say "you ain't seen nothin' yet."

Dr. Shoemaker's enthusiasm combined with the dedicated efforts of Mr. C. O. Tower and D. R. Purdy have resulted in an Investment Plan for Vocational Education Facilities which is sometimes referred to as the Master Plan and a new set of Standards for Vocational Education which is to be used by schools in the implementation of their plans and programs. (See Appendix F.)

The Investment or Master Plan, which was completed on November 10, 1969, includes such items as:

A. Sample foundation calculations for joint vocational school districts.

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241 "Learning to Earn in Ohio through Vocational Education", op. cit., p. 4.
B. Recommended vocational education programs with related information for vocational school districts.

Specifically the plan includes summary of costs and pupil enrollment by proposed vocational school district in Ohio.

- Guidelines for eight typical vocational schools.
- Estimated per pupil costs for each typical school.
- Estimated pupil costs for each of the fifty-six vocational school districts. (See Appendix G.)

The information contained in this rather formidable volume has been gathered over the years by state department vocational education personnel as they have assisted in implementing vocational programs across the state. This storehouse of information enables the division of vocational education to help the local school systems in reaching all types of decisions pertaining to the demographic, economic and employment aspects of their community and adjacent communities. It enlightens the local school district as to the necessary procedures involved in establishing their vocational programs.

These guidelines are even more important in view of recent state action to implement the Provisions of the 1968 Amendments to the 1963 Vocational Education Act. The Ohio State Legislation passed House Bill #531 which in short legally obligates every school district
in the state to provide vocational education programs for the pupils within its jurisdiction. These programs must meet the stated standards of the state plan. (See Appendix H.)

We can say that now Ohio has the opportunity to put it all together—leadership, legislation, programs, public and industrial support to make its vocational education program, and more specifically the trade and industrial sector, one of the most outstanding in the nation.

RECOMMENDATIONS

It would perhaps be profitable, in view of the rich background of Ohio's experience in all areas of vocational education, if historical and developmental studies similar to this one could be compiled for each of the major vocational areas. In this way, Ohio's growth and development as a pioneer in this field could be amply documented and provide us with a firm background and understanding from which to develop sound programs for the future.
APPENDIX
STATEMENT OF THE INDUSTRIAL ARTS AND TRADE
AND INDUSTRIAL EDUCATION JOINT COMMITTEE
OF THE AMERICAN VOCATIONAL ASSOCIATION

INTRODUCTION

The statements which follow represent discussions which were held over a 3-year period of a joint committee appointed by the Industrial Arts and Trade and Industrial Education Divisions of the American Vocational Association. The Statements have been approved by both Divisions for the purpose of providing educators, students and the lay public with a better understanding of the two programs. The members of the joint committee reaffirmed the belief that their deliberations as reflected in this report produced positive, constructive suggestions for mutually strengthening Industrial Arts Education and Trade and Industrial/Technical Education.

COMMITTEE MEMBERS

REPRESENTING INDUSTRIAL ARTS EDUCATION

Pat H Atteberry, Co-Chairman
Ralph Bohn
Leonard W. Gilsemann
Frederick D. Karg
John H. Koenig
William R. Mason
Marshall L. Schmitt, Ex-officio

REPRESENTING TRADE AND INDUSTRIAL EDUCATION

Burr D. Coe, Co-Chairman
C. Thomas Olivo
William B. Steinberg
Clyde E. Slice
Earvis V. Stolz
James W. Wilson
Merle E. Strong, Ex-officio

DEFINITIONS

Industrial Education is a generic term which broadly defines that part of the total educational program which includes instruction in Industrial Arts education and trade and Industrial/Technical education.

Trade and Industrial/Technical Education is a program of vocational education and training for gainful employment in trades, service, and Industrial/Technical occupations, as described below.

Industrial Arts is a program of education relating to the broad study of selected industries, as described below.

INDUSTRIAL ARTS EDUCATION

I. Curriculum
- Content is derived from a broad study of selected industries; including the use of tools, materials and processes.
- Provides for the development of conceptualized skills and understandings.
- Provides opportunity to apply basic principles of the man-made world as a designer, planner and user.
- Programs are kept current with technological advances and change in educational media.
- Includes instructional programs:
  - Designed to acquaint students with the general functions and procedures of industry, including guidance for the broad spectrum of industrial occupations.
  - Designed to provide a study of the inter-relationships of industrial activities leading to the production and manufacturing of industrial products.

TRADE AND INDUSTRIAL/TECHNICAL EDUCATION

The content is determined by an analysis of the various job titles in an occupational field for which training is being given, such as machine industries occupations.

- The curriculum is developed, reviewed and updated with the assistance of management/labor representatives from industry.
- The content is continuously changing and is updated to reflect technological changes in each occupational field.
- Instructional materials include recent industrial publications and modern industrial devices and techniques as an integral part of the instructional programs.
- The curriculum provides in-depth learning experience and techniques which duplicate those found in industrial/technical employment.
- The time schedules, level and amount of instruction must be adequate to develop necessary skills and related technical understanding essential for successful entry into and progress in a trade, service, industrial or technical occupation.
- Pre-employment programs are provided immediately preceding employment in order to be most effective.
- Programs are designed to meet the full spectrum of needs from the single purpose operatives to the highly skilled trade and Industrial/Technical craftsmen.
II. Types of Schools

- Industrial arts programs are offered in elementary schools, junior high and senior high schools, colleges and universities.

III. Teachers

- A baccalaureate degree program with an approved major in industrial arts education is required for initial entry into the profession with the curriculum taught and 100% approved by industrial arts teacher educators.

- Must have completed a program of professional preparation, including a supervised internship or student teaching experience.

- Work experience is desirable as a basis for a broad understanding of industry and the world of work.

- Pre-employment education and training is usually provided from grades 9 through 14.

- Programs provide open-ended curriculum to permit vertical articulation from secondary to post-secondary levels.

- Programs are planned for a large variety of student objectives such as:
  - Pre-collegiate programs providing a broad-based education and consumer experience in industrial arts.
  - Secondary programs providing occupational and industrial readiness for post-secondary programs and a certificate of occupational competency for ungraded programs.
  - General education programs providing occupational and industrial readiness for post-secondary programs and a certificate of occupational competency for ungraded programs.
  - Supervision and management development programs; a certificate or associate degree in industrial/technical education.
  - Guidance program in trade, industrial/technical subject.
  - Vocational education providing a broad-based education and consumer experience in industrial arts.

- Must meet standards set by regional accreditation associations and individual state requirements.

- The plan for instructional shops, laboratories and related instructional classroom facilities are based upon occupational analyses and recommendations of vocational industrial advisory committees. The nature of the instructional plant and the variety of equipment are comparable, where practical to those found in industry.

- Instructional supplies and materials are comparable to those found in industry and are available in sufficient quantity to develop adequate marketable skills.

- For youth and adults whose goals is entry into, retraining for, or upgrading in trade, industrial/technical occupations.

- Students are selected in terms of potential employability.

- The minimum entry age into the program is determined by the employability age at the completion of the education and training program.

- Students receive: A high school diploma endorsed in an occupational field upon completion of secondary programs; a certificate or associate degree with occupational endorsement for post-secondary programs; and a certificate of occupational competency for ungraded programs.

- Persons with special occupational needs are served in vocational programs.

- Organized programs of vocational guidance provide for recruiting, testing and selecting students.

- Vocational counseling services are provided for in-school and out-of-school youth and adults as an integral part of preparatory, retraining or upgrading programs in trade and industrial/technical education.

- Job placement and trainee followup are an integral part of the program.
APPENDIX B.

TRADE AND INDUSTRIAL TEACHER-EDUCATION INSTITUTIONS TRAINING TERRITORIES

University of Toledo

Kent State

University of Cincinnati

The Ohio State University
APPENDIX C.

TRADE AND INDUSTRIAL
SUPERVISION AREAS

Northwest area
Jack Volkmer

Northeast area
Don Bewley

Southwest area
Robert Wright

Southeast area
Tom Hyde
APPENDIX D.

THE GOVERNOR'S TASK FORCE ON
VOCATIONAL AND TECHNICAL EDUCATION

Chairman
Dr. John C. Ullery
University Hospital
Columbus, Ohio

Members

Mr. Russell L. Bearss
Toledo Machining Plant
Chrysler Corporation
Perrysburg, Ohio

Dr. Paul W. Briggs
Superintendent
Cleveland Public Schools

Mr. Howard L. Collier
Director
Ohio Department of Finance

Mr. Willard P. Dudley
Administrator
Ohio Bureau of Employment Services

Mr. Robert F. Fisher
Budget Director
City of Canton

Mr. Jesse W. Fulton
Addressograph-Multigraph Corp.
Cleveland, Ohio

Mr. Martin F. Graham
Secretary-Treasurer
Ohio State Building & Construction Trades Council
Columbus, Ohio

Senator Harry V. Jump
Ohio General Assembly
Willard, Ohio

Dr. Roy M. Kottman
Dean, College of Agriculture
Ohio State University

Dr. John D. Millett
Chancellor
Ohio Board of Regents

Mr. Fred P. Neuenschwander
Director
Ohio Department of Development

Senator Ralph S. Regula
Ohio General Assembly
Navarre, Ohio

Rep. Myrl H. Shoemaker
Ohio General Assembly
Bourneville, Ohio

Mr. Denver L. White
Director
Ohio Department of Public Welfare

Mr. David J. Young
Attorney-at-Law
Columbus, Ohio
APPENDIX E.

The Ohio Advisory Council is composed of 22 members, selected to represent the various categories of membership as designated in the Act. These are as follows:

Management:

Russell L. Bearss, Plant Manager, Chrysler Corporation
Jesse W. Fulton, General Office Mgr., Addressograph-Multigraph Co.
Ray R. Runser, Director, Industrial Relations, Baldwin-Lima Hamilton Corp.

Labor:

Dr. Leo Dugan, Exec. Secretary-Treasurer, Akron Labor Council, AFL-CIO
Frank King, President, Ohio AFL-CIO

State Industrial and Economic Development:

Fred Neuenschwander, Director, Department of Development

Higher Education:

George Bowers, Dean, School of Applied Science, Miami University
Dr. Max J. Lerner, President, Lorain County Community College

Private Schools:

Charles Harbottle, President, Miami-Jacobs Junior College of Business

Administration of State and Local Vocational Programs:

William Mason, Past Director of Vocational Education, Cleveland City Schools
Dr. Robert Reese, Professor, Vocational Education, The Ohio State University

Vocational and Technical Programs:

Robert Durbin, Superintendent, Four-County Vocational School
R. A. Guinn, Director, Vocational Education, Marietta City Schools
Local Boards of Education:

Mrs. James Shellabarger, Member, Dayton City Board of Education

Manpower Agencies:

William Papier, Director, Research and Statistics, Ohio Bureau of Employment Services

School systems with concentrations of Disadvantaged Students:

Dr. Paul Miheer, Superintendent, Cincinnati City Schools

Knowledge of programs for students with special needs:

Mrs. Harold P. Banister, Executive Director, Vocational Guidance & Rehabilitation Services, Cleveland

General Public:

Hugh Frost, Assistant to the President, Youngstown State University

Joseph A. Hall, Director, Urban League of Greater Cincinnati

Agriculture:

Dean Simeral, Assoc. Director Public Affairs, Ohio Farm Bureau Federation

Distribution:

Karl Kahler, Executive Assistant, Ohio State Council Retail Merchants

Parents and Teachers Association:

Mrs. Dale M. Corrington, Director, Ohio Congress of Parents and Teachers
STANDARDS FOR VOCATIONAL EDUCATION PLANS AND PROGRAMS

STANDARD EDb-463-01

Each plan must provide for vocational education for eligible students based upon the following percentages by September 1, 1974:

<table>
<thead>
<tr>
<th>Percent of Graduates Entering College or Degree-Granting Higher Education Programs</th>
<th>Percentage of Students for Whom Vocational Education Will be Planned by September 1, 1974</th>
</tr>
</thead>
<tbody>
<tr>
<td>50% or Less</td>
<td>40%</td>
</tr>
<tr>
<td>50% - 60%</td>
<td>30%</td>
</tr>
<tr>
<td>60% - 70%</td>
<td>20%</td>
</tr>
<tr>
<td>70% or More</td>
<td>10%</td>
</tr>
</tbody>
</table>

STANDARD EDb-463-02

Plans proposed shall provide for a minimum of 12 different vocational education offerings providing 20 classes of vocational education under the Foundation program, with no more than four of these offerings to be provided entirely by cooperative education methods.

STANDARD EDb-463-03

All plans shall include provisions for vocational education services to all districts or combinations of districts within individual county or multi-county areas represented by the plan. All programs proposed to meet the minimum standards for vocational education in the plan shall meet the criteria for vocational education programs as approved by the State Board of Education.

STANDARD EDb-463-04

No school district or combination of school districts shall be considered for the allocation of construction, remodeling and equipment funds from state or federal sources unless such a district or combination of districts has a minimum of 1,500 students in the upper four years of school. Because of the limitation of funds, districts or combination of districts with a minimum of 3,000 students in the upper four years of school will be given priority.
Any plan submitted on the basis of contracting between districts shall include:

A. The provisions for physical facilities for the vocational programs by one or more of the boards of education with one participating school providing for no less than 10 programs and 16 classes.

B. The tax source for building needed vocational facilities and an agreement that each district will guarantee to pay a participation fee for students annually to the district which will be offering the vocational education program based upon the following formula:

1. Districts enrolling 60% or less of graduates in degree-granting higher education programs will guarantee to pay a participation fee to the district or districts which will be offering the vocational education program for a minimum of 20% of the 11th and 12th grade enrollment.

2. Districts enrolling 61 to 75% of graduates in degree-granting higher education programs will guarantee to pay a participation fee to the district or districts which will be offering the vocational education program for a minimum of 15% of the 11th and 12th grade enrollment.

3. Districts enrolling 76 to 90% of its graduates in degree-granting higher education programs will guarantee to pay a participation fee to a district or districts which will be offering the vocational education program for a minimum of 10% of the 11th and 12th grade enrollment.

4. Districts sending 91% or more of its graduates to degree-granting higher education programs will guarantee to pay a participation fee to the district which will be offering the vocational education programs for a minimum of 5% of the 11th and 12th grade enrollment.

5. Districts that develop a cooperative plan for providing vocational education programs, in which provisions other than (1) through (4) above are desirable, may establish mutually agreeable fiscal arrangements. Fiscal arrangements shall be stated in the plan.
STANDARD EDb-463-07

The legal base for planning procedure, standards, and other materials shall be transmitted to all superintendents in Ohio before the 20th of the month in which standards are adopted by the State Board.

STANDARD EDb-463-08

Planning committees are to be initiated by all districts or combination of districts, counties or multi-county units not later than the 15th of the month following receipt of the planning materials.

STANDARD EDb-463-09

Plans must be submitted to the State Board of Education in accordance with the provisions of Section 3313.90 R.C. by April 1, 1970.

STANDARD EDb-463-10

Plans shall be reviewed by the Division of Vocational Education in terms of the standards for districting. Adjustments shall be made in the plans in cooperation with the local education agencies and recommendations made to the State Board concerning the plans no later than June 8, 1970.

STANDARD EDb-463-11

Plans from an individual district or combination of districts, a single county or multi-counties may be submitted to the State Board of Education any time after the approval of the planning procedures, providing such procedures are submitted to the State Department of Education, Division of Vocational Education, by the 15th of the month prior to the month in which they are to be considered by the State Board of Education. The State Board, upon recommendation of the Superintendent of Public Instruction, and upon determining that the plans meet the standards for districting, may approve the plan submitted, and make the districts eligible for operation allocations, construction and equipment allocations, or both.
6. The initial contract arrangements between boards of education under this section shall be for no less than 5 years, renewable on the basis of 5 year periods. Contracts between boards of education, however, in cases where one board of education has obligated funds for the construction and for equipping of vocational facilities, must cover a period of years necessary to amortize the obligation.

Any changes in contractual arrangements during the life of a contract must have approval of the participating districts and the State Board of Education.

Participating districts are responsible to pay participation fees based upon the formula above even though less than the formula number of students participate in vocational classes in the vocational center.

STANDARD EDb-463-06

The county superintendent, the joint vocational school district superintendent where a jointure exists, and the superintendent of the city enrolling the largest number of students within the county shall be charged with establishing a committee including representation from all school districts in the county or counties to develop a plan for the county or in cooperation with one or more of the adjoining counties. The county superintendent shall be responsible for arranging the first meeting with the superintendent from the city and the joint vocational school district in order to initiate the planning. The county superintendent of the most populous county in each vocational district identified in the broad plan proposed by the Governor's Committee on Vocational Education shall take the initiative in contacting the county superintendents of the other counties to arrange a meeting of the districts encompassed in the area. At the first general meeting of superintendents arranged by the committee outlined above, a chairman shall be elected by the group. The elected chairman shall be responsible for coordinating the districts involved. The planning committee for vocational education may establish such additional committees and planning activities as are deemed advisable.
STANDARD EDb-463-07

The legal base for planning procedure, standards, and other materials shall be transmitted to all superintendents in Ohio before the 20th of the month in which standards are adopted by the State Board.

STANDARD EDb-463-08

Planning committees are to be initiated by all districts or combination of districts, counties or multi-county units not later than the 15th of the month following receipt of the planning materials.

STANDARD EDb-463-09

Plans must be submitted to the State Board of Education in accordance with the provisions of Section 3313.90 R.C. by April 1, 1970.

STANDARD EDb-463-10

Plans shall be reviewed by the Division of Vocational Education in terms of the standards for districting. Adjustments shall be made in the plans in cooperation with the local education agencies and recommendations made to the State Board concerning the plans no later than June 8, 1970.

STANDARD EDb-463-11

Plans from an individual district or combination of districts, a single county or multi-counties may be submitted to the State Board of Education any time after the approval of the planning procedures, providing such procedures are submitted to the State Department of Education, Division of Vocational Education, by the 15th of the month prior to the month in which they are to be considered by the State Board of Education. The State Board, upon recommendation of the Superintendent of Public Instruction, and upon determining that the plans meet the standards for districting, may approve the plan submitted, and make the districts eligible for operation allocations, construction and equipment allocations, or both.
State Board procedures for the approval of requests for construction and equipment funds and for the submission of these requests for approval of the State Board of Control shall be as follows:

A. Funds shall not be allocated until the district or area plan for Vocational Education has been approved by the State Board of Education.

B. After approval of a request for funds by the State Board of Education, a request shall be made to the State Board of Control for release of funds for the project.

C. Any district adversely affected by the determination of the Division of Vocational Education or action of the State Board of Education may follow the procedure for appeal as outlined in Chapter 119 R.C.

D. Procedures for applying for allocation of State Bond Issue funds to match funds from the Bureau of Vocational Rehabilitation shall follow the same procedures as for the allocation of construction and equipment funds.

Special consideration may be given to any creative or exemplary cooperatively developed plan or plans to establish, maintain and finance a comprehensive vocational education program for all eligible students through the granting of exceptions to those standards which tend to inhibit the implementation of a plan which best serves the needs of students in such areas. Special consideration may also be given to one or more counties in which compliance with one or more standards would result in unreasonable transportation time and costs.

In grant programs which support the provision of health, education or welfare services, discrimination in the selection or eligibility of individuals to receive the services, and segregation or other discriminatory practices in the manner of providing them, are prohib-
ited. This prohibition extends to all facilities and services provided by the grantee under the program or, if the grantee is a State, by a political subdivision of the State. It extends also to service purchased or otherwise obtained by the grantee or political subdivision, and to the facilities in which such services are provided, subject, however, to the provisions of 80.3 (e). Sec. 602, Civil Rights Act of 1964, 78 Stat. 252; 42 U.S.C. 2000d-1.

STANDARD EDb-463-15

Exemptions to the minimum requirement of 1,500 students in grades 9 through 12 may be made by the State Board of Education based on sparsity of population or other factors indicating that comprehensive educational and vocational programs can be provided through an alternate plan.
APPENDIX G.

VOCATIONAL SCHOOL DISTRICTS

Joint Vocational School Districts

Contracting Districts

Individual Districts

May, 1970  C. O. Tower
APPENDIX H.

SCHOOL DISTRICT PLANS FOR MEETING VOCATIONAL EDUCATION REQUIREMENTS

Am. Sub. H. B. 531

Section 3313.90. Each school district shall establish and maintain a vocational education program adequate to prepare a pupil enrolled therein for an occupation which program shall meet standards adopted by the state board of education. A school district that is a member of a joint vocational school district or that contracts with a joint vocational school district or another school district for vocational education and that meets the standards adopted by the state board of education is in compliance with this section, which standards shall include criteria for the participation by nonpublic students in such programs without financial assessment, charge, or tuition to such student except such assessments, charges, or tuition paid by resident public school students in such programs. Such nonpublic school students shall be included in the average daily membership of the school district maintaining the vocational education program as a part-time student in proportion to the time spent in the vocational education program.

In meeting standards established by the state board of education, school districts, where practicable, shall provide vocational programs in high schools. A minimum enrollment of fifteen hundred pupils in grades nine through twelve is established as a base for comprehensive vocational course offerings. A school district may meet this requirement alone, through a cooperative arrangement pursuant to section 3313.92 of the Revised Code, through school district consolidation, by membership in a joint vocational school district, by contract with a school licensed by any state agency established by the Revised Code which school operates its courses offered for contracting with public schools under standards as to staffing and facilities comparable to those prescribed by the state board of education for public schools provided no instructor in such courses shall be required to be certificated by the state department of education, or in a combination of such ways. Exceptions to the minimum requirement of fifteen hundred pupils may be made by the state board of education based on sparsity of population or other factors indicating that comprehensive educational and vocational programs as required by this section can be provided through an alternate plan.

Approval of state funds for the construction and operation of vocational facilities in any school district shall be contingent upon a comprehensive vocational program plan approved by the state board of education no
later than July 1, 1970. The state board of education shall not approve a school district plan unless the plan proposed reasonably meets the vocational needs of other school districts in the general area of the school district submitting the plan. The plan shall be submitted to the state board of education no later than April 1, 1970. Such plan shall contain:

(A) The organization for vocational education pursuant to the requirements of this section;

(B) Vocational programs to be offered in the respective comprehensive high schools, in specialized schools or skill centers, and in joint vocational schools;

(C) Remodeled, additional, and new vocational facilities required at the respective locations.

In approving the organization for vocational education the state board of education shall provide that no school district is excluded in the state-wide plan.
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