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Vocational Education in the High School Curriculum

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To the Graduate Council:

I am submitting herewith a thesis written by Robert Leeman Bryan entitled "Vocational Education in the High School Curriculum." I have examined the final electronic copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Education.

, Major Professor

We have read this thesis and recommend its acceptance:

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UNIVERSITY OF TENNESSEE

Aug 1st

Upon the request of the Committee on Graduate Study the under-signed have examined a thesis entitled

Vocational Education in the High School Curriculum

presented by Robert L. Bryan

candidate for the degree of Master of Master of Science in Education, and hereby certify that it is worthy of acceptance.

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Examiners.

T H E S I S

VOCATIONAL EDUCATION IN THE HIGH SCHOOL CURRICULUM

Submitted in partial fulfillment of the requirements for the degree of Master of Science in Education, the University of Tennessee.

Approved _____

By

Robert Leeman Bryan

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VOCATIONAL EDUCATION IN THE HIGH SCHOOL CURRICULUM

INTRODUCTION

The title of this study "Vocational Education In the High School Curriculum" is more comprehensive than the study. The object of the study is to show, in part, the present status of Vocational Education in the High School Curriculum, with a proposed plan for Vocational Education in a specified school.

Briefly the study attempts to answer the following questions: Is our system of education wholly or partially democratic? What is the attitude of the Federal Government toward Vocational Education?

To what extent does the Federal Government finance Vocational Education?

To what extent is Vocational Agricultural Education being taught in the high schools of the United States?

To what extent is Vocational Home Economics being taught in the high schools of the United States?

To what extent do the high schools offer Commercial Vocational Training?

To what extent do the high schools attempt to prepare the youth for trades and industrial occupations?

To this end there is presented in the first chapter a brief historical background, giving the opinions of some early educational reformers, some of the early attempts at manual instruction, and the probable influence these

opinions and experiments had on the succeeding educational leaders. Also a brief history of the apprenticeship system and the reasons why it is not a suitable institution for today.

In Chapter II the writer has attempted to give several logical reasons why there is a need for Vocational Education in the high school curriculum today. Chapter III is concerned with Vocational Education since the passage of the Smith-Hughes Act (present status).

The study has been purely academic. The material is so arranged that the reader may study the different phases of the research separately. The statistical material presented represents the latest to be found at this time, and as recorded in the most reliable sources. Reference is given as to the source of each table and diagram under each heading.

The data of the tables and diagrams presented were arranged with the idea of simplicity in mind and of being self explanatory, for that reason very little comment is made on such material herewith presented.

In the appendix is given some material which may be of interest to anyone who is attempting to organize a vocational training course in his school. The forms of contracts given and the requirements are specifically for Vocational Agricultural Education, but substantially the same forms and requirements are set up for other courses that may be organized under the provisions of the Smith-Hughes Act. The text of the Act is also included in the

appendix so that any question regarding the distribution of money, administrative policies, or conditions that the Federal Government imposes upon the State and local community might be answered.

The study is by no means comprehensive, but with the limited amount of source material examined, the purpose of the study fulfilled, the writer hopes that the findings will be of value to those interested in Vocational Education in the high school.

The proposed plan as indicated and outlined in Chapter IV is for the six-year high school at South Charleston, West Virginia, where the writer serves in the capacity of principal.

CHAPTER I

VOCATIONAL EDUCATION IN THE HIGH SCHOOL CURRICULUM

History

1. As Found In Ancient Literature

In this chapter it is the purpose of the writer to give a brief digest of the history of educational movements that have had some bearing upon our present day life and education. What are the purposes of education? The Hebrews sought morality and religion through education, the Spartans physical power, the Athenians aimed at the ideal culture, the Romans, law, order and military prowess, and the church of the middle ages preparation for future state.[1]

Education was for the few who could profit by the particular kind of education offered. This philosophy of Ideal education has come to us from the past, and persists as the basis of our educational system as we attempt to educate all the children of all the people, half of whom quit school before the age of fourteen.

The ancient Jews emphasized the value of hand work, for we find the following quotations in the Talmud: "As it is your duty to teach your son the law, teach him

1. Lapp & Mote: Learning to Earn.

a trade". "He who does not have his son taught a trade, prepares him to be a robber".[2] The Jewish law placed the duty of teaching the youth a trade upon the parent. Quoting the Talmud again: "He who lives on the toil of his hands is greater than he who indulges in idle piety"."The laborer is allowed to shorten his prayers".[3] The Jews probably did not recognize the intimate relation between training in manual skill and intellectual development but they did in a general way recognize that a boy who worked with his hands was a more useful member of society than one who did not.

During the Homeric age in Greece handicraftsmen occupied a place of respect, but after many slaves had been captured, manual labor was looked upon with scorn. The 'gentleman' was supposed to have slaves do all his manual work that he might devote his entire time to the state. In some of the Grecian city states no citizen was permitted to work at any banausic craft. The attitude of the upper class did not prevent the continuation of the apprenticeship system of training among the lower classes. The translators of the Greek classics say that the apprenticeship system was an essential part of the economic life at Athens. These arts, looked down upon by the upper class or rich class, were fundamental to the material development of Greece.

Translations by Westermann of some Egyptian

2. Leipziger: The Education of the Ancient Jews, p. 212.
3. Ibid. p. 212.

contracts show that the artisan was to give trade instruction plus other things to the apprentice for his work. Trades taught to the Egyptian apprentices were weaving, flute-playing, hair dressing, nail-making, etc. The apprentice in Egypt did not live exclusively with his master.[1]

The early Christian monks following the example of Jesus, the carpenter, made a fetish of labor. Labor was required of the monks. Fasting was not allowed to interfere with labor. The monks worked at building, and the people were banded together in trades for special service. The Benedictines developed arts, agriculture, and handicrafts and became the civilizers of barbarians, the example of enterprise, thrift and Christian culture. The monks developed the art of book making; the monasteries became the schools for teaching and professional training, the only publishers of books, the only libraries; they were the sole educational institutions of the period.[2]

2. <u>The Ideas of the Early Educational Reformers</u>

Martin Luther's ideas: The right kind of schooling should be given to all people, noble and common, rich and poor; it was to include boys and girls; finally the state was to use compulsion if necessary. Luther advocated a school day of two hours, so arranged that it would allow the older children to carry on the ordinary economic duties

1. Douglas: American Apprenticeship & Industrial Education.
2. Munroe: Cyclopedia of Ed. Vol. 1, p. 255.

of life uninterruptedly. Luther's idea was to send the youth to school for two hours per day and have them learn a trade at home for the rest of the time. He suggested the following subjects for the curriculum: Latin, Greek, Hebrew, logic, mathematics, music, history, and science.[1]

Influence of Rabelais (1483-1553): Through his two novels, Gargantua and Pantaguel, he caused a much [illegible] reform. In Gargantua he portrays the most depraved practices of the child life and education of the times.[2] Rabelais saw the advantage of approaching the abstract and remote through the concrete and near at hand. It was his ideas that exerted such a great influence on Montaigne, Locke, and Rousseau. He had his ideal teacher give the pupil Gargantua something that caused him to forget all that he knew, so that the teacher would have a fresh mind with which to work. Gargantua was then taught by means of games and the actual doing of the things of life; he reached the abstract through the real. He was taught a knowledge of the handicrafts by observation.

Mulcaster Advocates Drawing: That noted Englishman, Richard Mulcaster, head master of Merchant Taylor's School from 1561 to 1586, laid the foundation for the modern science of education.[3] He thought that all children should learn to read and write but he was most interested

1. Munroe: Text-book in the History of Education, p. 412-13.
2. Bennett: History of Manual and Industrial Education, p.31.
3. Quick: Essays on Educational Reformers, p. 95.

in discovering and developing the special abilities of the few. Mulcaster organized an elementary school curriculum consisting of reading, writing, drawing, singing, and playing a musical instrument. He is given credit for being the first to make drawing one of the fundamental studies of the school.

Bacon and Realism: (1561-1626) Bacon's philosophy of realism provided the motive force in education that later developed our modern school of applied science. He held that all knowledge must be obtained by a careful and unprejudiced induction from facts. Hence the importance of experimentation. He did not believe that all wisdom had been revealed to men and he sought to discover new knowledge. He said to his pupils "Be not wrapped up in the past; there is an actual present lying all about you; look up and behold it in all its grandeur". In his first book, published in 1605, he used the term 'manual arts' which is often thought of as being of recent origin.[1]

Comenius (1592-1670): Comenius was the most famous educational writer of the seventeenth century. He believed that instruction in words and things should go together. He would have the children learn as much as possible, not from books but from nature.[2] It was the aim of Comenius to make the process of learning agreeable to the learner.

1. Bennett: History of Manual and Industrial Education, p.35.
2. Quick: Essays on Educational Reformers, p. 139.

He believed in the education of both sexes. Comenius has been called the father of modern pedagogy. Quoting from his 'School of Infancy'; "What ever children delight to play with, provided it be not harmful, they ought rather be gratified than restrained from it, for inactivity is more injurious to both mind and body than anything in which they can be occupied".[1] He advocated the teaching of the most important principles of the mechanical arts, both that they may not be too ignorant of what goes on in the world around them and that any special inclination towards things of this kind may assert itself with greater ease later on.

Hartlib in England (1600-1670): Hartlib brought the writings of Comenius to public attention in England. Hartlib influenced John Milton to write his ideas of education. This tract of Milton's was published in 1644.[2] Milton would, instead of having pupils undergo the customary torture and toiling of the disciplinary study of Latin and Greek, have each study stand the test of usefulness, and he would have the method of learning delightful to young minds. "Things rather than words; the facts of nature and of life; real science of every kind; this, together with a persistent training in virtuous and noble sentiment and a final finish of the highest literary culture, was to compose the new education".

Hartlib's Plan for a College of Agriculture in

1. Munroe: The School of Infancy of Comenius, p. 45-6.
2. Masson: The Life of John Milton, Vol. III, p. 238.

England: He believed that the future prosperity of the nation required that more attention be given to agriculture and that agriculture itself must be developed by bringing to the solution of its problems the thought of educated men. With such an end in view he proposed the earliest plan for an agricultural college in England. It was to be a private college or society where "Some were to teach the whole and honorable art, so deep in mystery, and not only in the more customary and common way but according to the most excellent rules that can be gained by ingenuity and experience." He proposed to appeal to the wealthy, who had a love for their country, to establish the institution. The college was tobe established on the apprenticeship plan, the period of indenture was to be seven years. The plan was for young men of means who were desirous of entering agriculture as a business, and his purpose was to elevate farming to the level of an art.[1]

The Advice of William Petty to Samuel Hartlib: This advice appeared in a phamphlet printed in London in 1647.[2] He proposed the publishing of a great cyclopedia of the arts and sciences. To compile this he would have a survey made of all books and mechanical inventions. He thought that the study of his 'book of trades' would be more valuable to boys than the "mere rabble of words", and that it would be easier and pleasanter for them as well as

1. Bennett: History of Manual and Industrial Education, p. 42-3.
2. Ibid. p. 46.

more in accord with their natural propensions. He also would have printed a book on the mysteries of trades. It would describe in detail the manual process in each trade. He would have boys study this before they were bound as apprentices, so they would not spend so much time in repenting. This was an attempt at vocational guidance. More than any one else at that time Petty proposed to connect hand work with the school, though he never put his plan into practice. Petty's chief aim in placing hand work and things in the school was to advance general education and not to produce artisans. Through the study of his books he expected the indenture to be shortened by about four years.

Work of Joseph Moxon: In 1683 the educational ideas of Joseph Moxon, member of the Royal Society of London and hydrographer to the king, was printed in a volume entitled "Mechanic Exercises or the Doctrine of Handy Work". This was probably the earliest treatise on tools and their uses, written in English language. It is not only the work of a scientist and scholar, but Moxen was an artisan, having worked at several trades, including printing, engraving, and the making of mathematical instruments.[1]

John Locke's Scheme of Education: His two books "Essay on Human Understanding" and "Some Thoughts Concerning Education", placed him in the highest rank among educators. Locke became the chief exponent of the idea that education should fit the boy for practical life, either trade or professional. When he was commissioner of Trade and Plantations

1. Bennett: History of Manual and Industrial Education, p.44.

in 1697, he advocated a system of working schools for all pauper children between three and fourteen years, where they were to be taught spinning or knitting. Locke's pedagogy insisted on individual exercise in habits of practical usefulness and habits of thinking, and forming tested judgments, as more important educationally than instruction in the established subjects of the curriculum.[1]

Thomas Budd's School Plan: In a small treatise by Budd, published in 1685, entitled "Good Order Establishment in Penna. and New Jersey in America" he would make education compulsory to all children, and he would teach each child that "Art, Mystery, or Trade that he or she most delighteth in". His scheme was probably never put into practice but there is no doubt that the publication influenced the people to demand free public schools.[2]

The System of Education of Rousseau: Rousseau considered one hour of manual labor worth more to his "Emile" than a whole day of verbal instruction. "The things he learns by experience will be retained longer and will be acquired more readily." "I hate books; they only teach people to talk about what they don't understand".[3] For rich and poor he considered labor a duty. Rousseau thought agriculture to be the most respectable of all the arts and professions. His purpose in having Emile learn a trade was not that he

1. Watson: Encyclopedia and Dictionary of Education, p.994.
2. Morris: Popular Science Monthly, Vol. XXXI, pp 608-611.
3. Bennett: History of Manual and Industrial Education, p. 80.

might earn a living by it, but because it would be a vital part in the process of his education. Rousseau's recognition of the fact that the manual arts may be a means of mental training marked the beginning of a new era in education. It paved the way for the educational methods of Pestalozzi and those who followed him.[1]

Herbart's Ideas: Herbart, (1783-1852) one of the world's greatest educational philosophers, said of manual arts, "Children in any case must be occupied, as idleness leads to mischief and unruliness. If the occupation is some useful work, so much the better. And better still, if by means of the occupation something is taught and learned which contributes to future culture".[2]

The above mentioned men and their ideas, plans, or schemes for the education of the youth, though never put into practice except in a few instances, did have some influence on the educators of the succeeding years. All these theories propounded in the sixteenth and seventeenth centuries did not make any noticeable change in the school work so far as manual arts were concerned but on the other hand there was a change in the educational philosophy of the times. In so far as this change in the philosophy of education influenced the educational theories and practices of the years that followed, and the now present years, we are vitally interested, and for this reason they have been

1. Bennett, op. 80
2. Ibid. p. 161.

mentioned.

The traditions of the ancients no doubt had its influence on these men mentioned. Believing this, some of the traditions of the ancients have been mentioned. The theories of yesterday influenced the practices of today as much as the theories of the present will influence the practices of tomorrow.

Up to this time (1700) manual arts was not recognized as of fundamental educational value.

3. Some Practical Experiments That Grew Out of The Theories That Preceded (In Europe).

Weigel, about 1699, in Jena, used handwork for the purpose of sweetening the process of learning. He had children build with blocks and small boards, make figures of pasteboard, build sun dials and measure heights and distances. His work seems to have connected the thought of Comenius with the work of Froebal.[1]

The Orphanage of Francke: Francke of the University of Halle, in 1694 founded an orphanage or school for the poor children, for religious purposes primarily. Out of this school there grew a great institution, including a Latin school for the well-to-do, a seminary for training teachers, a publishing house to print Bibles, and the center of the great Pietest Movement of the Luthern Church. To

1. Pabst: Handwork Instruction for Boys, p. 33.

augment his religious instruction, he gave practical instruction, including several manual arts.[1]

Hecker, one of the teachers under Francke, went to Berlin, where in 1747 he founded what was known as the Royal Realschule. In connection with the school, instruction was given in wood-turning, paper pasting, glass cutting and wood finishing.[2]

Fellenberg's Academy: Fellenberg (1771-1844) in 1799 purchased nearly 600 acres about four miles from Berne, that he called Hofwyl. To this place came Pestalozzi, and Fellenberg tried to cooperate with him in a scheme of education for the poor, without success, due to different opinions as to finances. In 1807 the first building of the academy was erected. This school was intended for the well-to-do. Board and tuition cost from $500 to $1,500 per year. In connection with this school or academy were two small buildings in which there was a cabinet shop, a book bindery and room devoted to music and dancing where pupils might amuse themselves or engage at some profitable exercise. Gardening was also carried on as a means of past time or exercise.[3]

Fellenberg's Farm and Trade School: Wehrli, one of Fellenberg's students, persuaded Fellenberg to let him take three boys into the farm house and live with them. Here was laid the most striking feature of Fellenberg's institution. Wehrli was their fellow laborer, companion, and teacher. The boys were clothed like a farmers and fed

1. Watson: Encyclopedia and Dictionary of Education, p. 643.
2. Bennett: History of Manual and Industrial Education, p.76.
3. Ibid, Chapter V.

on a vegetable diet. In general the methods used in teaching were those used by Pestalozzi. Several master tradesmen were employed at the institution and as soon as the boy was old enough to become an apprentice, instead of continuing at the farm, he was allowed to select a trade at which he worked until he was twenty-one years of age. They were required to stay in the institution until they had reached that age in order that their work might pay for the upkeep of the institution. On leaving school at the age of twenty-one, the poor boy had acquired a trade, he was an intelligent farmer, and he possessed a general education. This institution of Fellenberg's was the forerunner of the industrial reform school.[1]

4. Schools of Industry in Europe.

Kindermann (1740-1801) determined to make school reform his life work. His schools soon became famous, and in 1775 he was made superintendent of schools for Bohemia. Kindermann introduced remunerative, industrial work in the "Volkschule". His motive was economic rather than pedagogic. By 1787 he had organized more than a hundred schools of this type where the girls were taught flax and wool spinning, knitting, and sewing, and the boys were taught agriculture, bee keeping, and gardening. The purpose of his school was to give the children a chance to earn money that they might attend school. The direct

1. Bennett: History of Manual and Industrial Education, Chapter V.

fruit of Kindermann's work was the bettered economic conditions of the country around his schools.[1]

Schools of this type were organized by Wageman in North Germany in 1784, and several others soon followed. One was established in England in 1791.[2] The poor children for the most part could not have attended school had it not been for this device of learning while earning, or as we would call it today, part-time education.

Pestalozzi's work (1746-1827): We like to think of Pestalozzi as the man who first organized hand work as an integral part of school work, and we are very much indebted to him for his work in attempting to educate all the people, rich, as well as poor. On the other hand, it is surprising to note that despite his courage and the important principles that he worked upon, that his work was almost an utter failure at that time. Were it not for the influence of his work over the educators that followed him, his name would not be mentioned today as the father of manual training.

His work with the poor children of the country (Switzerland) created a desire among certain philanthropic individuals to aid the poor educationally; these helped him to some extent with money and land; but as Pestalozzi's business manners were not sound, the attempts were failures.

His first experiment was the Neuhof Industrial

1. Hoffman: The Sloyd System of Woodworking, p. 58.
2. Bennett: History of Manual and Industrial Education, p. 86.

School in 1771. On a large farm that he had acquired for the school, he brought in the poor of the land; fed, clothed and taught them; they, in turn, were to work on the farm, in the shops, or at the looms, to pay for their educational advantages.[1] Educationally the plan was a success, but financially it was a complete failure. The farm and its equipment had to be sold to satisfy the creditors.

He had no legal agreements with the parents of the children; sometimes they would be taken from the school as soon as they were well clothed; his children were an unselected group, and he was trying to enable the child to earn a good living and the tuition for a high type of education by the labor of his own hands during the years while he was receiving instruction; these were some of the causes of the failure of the plan.

The five year experiment and subsequent failure did not convince him that the basic principles on which he was working were wrong; but to the contrary, he was convinced beyond all doubt of the fundamental truths.

After several other attempts to educate and better the conditions of the poor children of the land, he accepted an old castle on Lake Neufchatel, where he put his new plans to work. Here, he and his devoted assistants established the institution that became famous. Teachers came from many countries to see the new pedagogy at work.

1. Quick: Essays on Educational Reformers, pp. 52-54.

Much money was contributed to its upkeep, but owing to internal disturbances the institution was closed in 1824.[1]

Pestalozzi's ideal was education for all children, rich and poor, and education by new methods involving things, or with the concrete instead of the abstract; education that was connected to the life that the youth was then living or would live in the near future; to benefit the poor, improvement must come through education, and all education was to be in accord with Rousseau's nature plan. His methods have found fuller development under the influences of modern psychology.

From the experiments conducted by Pestalozzi, Fellenberg, and Wehrli, there developed two types of schools in Germany; (1) for orphans, paupers, and deserted children who were in need of training and care, (2) for children who had committed some crime and had been sent to the institution for correction. Many schools of these types sprang up in various parts of Europe and England. Unfortunately, the only way for a poor boy to gain entrance to one of the schools was to be convicted of some crime, or to lose his parents; in either category he would be permitted to the school, his only chance for an education. Prior to 1870 there was no compulsory school law, and the schools, other than reformatories or orphanages, were for the noble or rich classes.

There were in Scotland certain philanthropic

1. Bennett: History of Manual and Industrial Education, p. 118.

individuals who determined to end this category by establishing schools for the poor. They established what was known as the "Ragged Schools", the primary aim of which was to save the soul, and the Bible became the chief text-book. Were it not for the fact that the boys and girls were urged to become honest earners of a living instead of waifs, beggars, and thieves the schools would have no mention in this paper. We would call the results of the first ragged schools, guidance and placement. From the first ragged schools the movement grew with rapid strides. Manual work of several types was taught the youth and in some cases they were rewarded for their work. Finally the government came to the aid of the ragged schools and they became certified industrial schools. At one time there were more than five thousand voluntary teachers in the ragged schools.

During the period of 1771 to 1870 many attempts were made to better the educational advantages of the poor. The work that was begun by Pestalozzi and Fellenberg continued to bear fruit until about 1870 when definite steps were taken to organize manual arts into pedagogical form. The attempts to educate the poor meant that the means of financing the movement had to be formulated. Generally the labors of the youthful hands were applied to the expenses of board and tuition of the youth. During this period, it was due to the business management of Fellenberg that the ideas proposed by Rousseau, and experimented upon by Pestalozzi, were organized into practical and applicable schemes. Pupils,

officials, and educators came from all parts of Europe to study and make reports on the new system of education.

5. The Kindergarten.

Froebal, (1783-1852) to whom we are indebted for the principle of the manual training school, took Pestalozzi's ideas and formed the educational theory that we know as self activity.[1] He taught for two years at Yverdun under Pestalozzi. He organized the first school known as the "Kindergarten" at Blankenburg, Germany, in 1837.[2] He conceived the idea that hand work was the best educational device for young children. Froebal placed hand work as the core of his curriculum. He thought that action preceded thinking, that education must begin by doing. Herbart would use hand work as a method or device, while Froebal thought of it as a subject of instruction.[3] Froebal probably got some of his ideas and most of his impulses from a pamphlet published by Heusinger of the University of Jena in 1797, on how to utilize the child's desire for activity.

6. Manual or Industrial Schools In America.

In America, it is to be noted, there were developed two kinds of 'Manual Schools'; first, the type for those who could not pay tuition and the labor of the youth was used to defray the expenses of the school, second,

1. Ham, C.H.: Mind and Hand, p. 1.
2. Quick: Essays on Educational Reformers, p. 394.
3. Pabst: Handwork Instruction for Boys, p. 45.

the type for those that could pay tuition in which the labor was recreation or health purposes. The first was the type out of which the modern reform school grew.

(a) Schools of the First Type:

Industrial School at New Harmony, Indiana: Robert Owen in 1825, after failing at several educational attempts in Scotland, came to America and settled at New Harmony, Indiana. With him as an educational advisor was a wealthy man from Philadelphia, William MacClure, who had visited Pestalozzi's and Fellenberg's schools. There they established a school; Owen's aim was a new organization that would educate and employ everybody; MacClure's aim was to make New Harmony the educational center of America, through the introduction of the Pestalozzian system of instruction. MacClure spent most of his energy with the group of youth from five to twelve years of age. He believed that every child of the productive class should be taught a trade in order that he might be independent, and that if properly managed, the labor of the child at his trade in the industrial department should more than pay for his maintenance, and thereby relieve the public of the financial burden of school support. The child was permitted to choose the occupation that he wished to learn. They failed after two years and Owén returned to Scotland. It is clear that MacClure's plans as to industrial training were far ahead of the times. From this beginning the manual labor movement in education began to grow in America, and in about a decade it had spent

its force, except that it left a type of work which was destined to become permanent.[1]

The development of industrial education in America was rooted deeply in the early philanthropic institutions for the education and industrial training of the orphans and poor children.

One of the earliest of the type referred to, was established at Boston in 1814, and was known as the Farm and Trades School.[2] It developed rapidly and in 1883 was moved to Thompson's Island in Boston Harbor. Nearly a dozen trades and occupations were taught at this school.

In 1859 the president of the Board of Directors of Girard College, (founded at Philadelphia in accordance with a will left by Stephen Girard in 1831), recommended the erection of work shops for hand work education. The work was very successful and after the Centennial Exposition in 1876, the manual work was extended and became a part of the course of instruction of every boy.

General S.C. Armstrong, cooperating with the American Missionary Association, founded the Hampton Normal and Industrial School at Hampton, Virginia in 1868. The school was for the children of the negroes who were at that time freed, and had no means of educating themselves. General Armstrong saw their need and worked out the plan for the school that would enable the negro youth to acquire a certain amount of education by working on the school farm

1. Bennett: History of Manual and Industrial Education, p.174-5.
2. Ibid. p. 242.

and in the school shops. The plan provided continuous laborers for the farm by having each pupil work two days on the farm and be in school four days." The school grew rapidly and became one of the leading trade schools of the nation, and the model by which others of that type have been organized, especially those for the negroes and Indians."[1]

The Colombian Magazine published an article in 1787, giving detailed plans for the establishment of schools in a new country where the people were thinly settled. In this plan young people were to be educated to become superior farmers and housewives. Under the stipulations of the scheme, the youth was to be employed for a part of his time to pay for his board and his educational privileges. The equipment would consist of a large well equipped farm with tools suitable for children to use, a school master, a gardener, a school mistress, and a cook. Among the desirable academic subjects that were to be taught were geography, history, English literature, book-keeping, geometry and surveying. The principles of morality and religion were to be emphasized.

Ten years later in a will left by Dr. John de la Howe, of Abbeville, South Carolina, provision was made for the establishment and endowment of an agricultural farm or school that should conform, as near as possible, to the plan set forth in the above mentioned magazine article. The will stipulated that one thousand acres were to forever

1. Bennett: History of Manual and Industrial Education, p.245.

remain in woodland for fuel and timber. Religion and morality were to be taught without meddling with speculative and controverted points.[1]

"In 1917 the state of South Carolina assumed the management of the property, erected a new building and added funds for maintenance. Now it is known as the De la Howe State School. It is probably the oldest agricultural school in the United States".[2]

It is interesting to note that our present system of agricultural colleges are the outgrowth of these early attempts at vocational education. The number of such schools in the United States according to the 1920 census was 79.[3]

(b) Schools of the Second Type.

In America: The first attempt at agricultural and mechanical training, in America, was at Cokesbury College, in Maryland, in 1787.[4] The school was located twenty-five miles from Baltimore, at Abbington. Here it is to be noticed that the agricultural and mechanical activities were to take the place of games or any other sort of amusement. The value was recreative and disciplinary, rather than educational. The institution being a religious school, all sorts of amusements were banned, and to take their place, work was substituted.

1. Bennett: History of Manual and Industrial Education, p.94.
2. Ibid. p. 94.
3. U.S. Census, 1920.
4. Bennett: History of Manual and Industrial Education, p.92.

In 1827 The Oenida Institute in New York was opened by Rev. George W. Gale. It was his desire and aim to remedy the health of those who had become so impaired through too close study, and to prevent such happening in the future. A farm of 114 acres was purchased for the institute. Labor was required of every student. The school was so popular that 500 applicants were rejected in 1831.[1]

Other schools of this type were organized at, (1) Auburn, New York, where a work shop and garden were combined, (2) Maryville, Tennessee, where labor on the farm was to those who desired to defray part of their school expenses by work, (3) Danville, Kentucky, where two hours per day were spent at work on the college farm.

Reasons for Failure: Pecuniary expectations were too great. Labor must be continuous to be profitable, and for the betterment of health, labor must be in brief periods which would require too much time in changing of clothing.

The most successful experiment up to 1829 was at Andover Theological Seminary, the sole purpose of which was to improve the health of the students.

7. Manual Training Schools.

Russia first solved the problem of tool instruction by the laboratory process, and made the foundation of a great reform in education.[2] The initiatory step was taken in 1868 by M. Victor Della-Vos, Director of the Imperial

1. Bennett: History of Manual and Industrial Education, p. 92.
2. Ham, C.H.: Hand and Mind, p. 333.

Technical School of Moscow. Quoting Director Della-Vos, "In 1868 the school council considered it indispensable, in order to secure the systematical teaching of elementary practical work, as well as for the more convenient supervision of the pupils while practically employed, to separate entirely the school work shop from the mechanical works in which the orders from private individuals are executed, admitting pupils to the latter only when they have perfectly acquired the principles of practical labor".

In the year 1870 at the exhibition of manufacturers at St. Petersburg, the school exhibited its method of teaching mechanical arts, and from that time they have been common to all the technical schools of Russia.[1]

For the introduction of the manual element in education to the United States we are indebted to the intellectual acumen of Dr. John D. Runkle, Institute of Technology, Boston. Quoting Dr. Runkle, "In the light of the experience which Russia brings us, not only in the form of a proposed system, but proved by several years of experience in more than a single school, it seems to me that the duty of the institute is plain. We should complete our course in mechanical engineering by adding a series of instruction shops, which I earnestly recommend".[2] This school was opened in 1877.

The second manual training school in this country was founded as a part of Washington University, St. Louis,

1. Ham, C.H.: Hand and Mind, p. 333.
2. Ibid. p. 334.

Missouri, by Dr. C.M. Woodard. Special attention was paid to the use of wood working hand tools, wood turning, and filing. These tentative steps promoted a healthy public sentiment, and attracted the attention of several wealthy men, who, in 1879 contributed the fund for the permanent foundation of the school. The ordinance establishing the Manual Training School was adopted by the Board of Directors of the University, June 6, 1879. On September 6, 1880, the school began with a single class of about fifty. On the opening of the third year of the school three classes were present. Quoting Mr. Woodard, "One great object of the school is to foster a higher appreciation of the value and dignity of intelligent labor, and the worth and respectability of laboring men".[1]

At the National Educational Association meeting at Madison, Wisconsin, in 1884, manual training received a very large share of the attention of the educators.

The Chicago Manual Training School was the only independent educational institution of the kind in the world and was established in 1883.[2] For many years the Chicago Tribune had very freely and severely criticised the educational methods of the public schools. In 1881 its editorial columns were opened to the advocators of manual training. This was continued for twelve months without apparent effect beyond provoking a controversy with certain professional educators. But public sentiment was aroused

1. Ham, C.H., Hand and Mind, p. 341.
2. Ibid. p. 346.

and at a regular monthly meeting of the Commercial Club, March 25, 1882, the establishment of a manual training school was resolved upon and $100,000 pledged for its support. The object of the school is stated in the articles of incorporation as follows:"Instruction and practice in the use of tools, with such instruction as may be deemed necessary in mathematics, drawing, and the English branches of a high school course. The tool instruction as at present contemplated shall include carpentry, wood-turning, pattern-making, iron chipping, filing, forge-work, brazing, soldering, and the use of machine shop tools, and such other instruction of similar character as may be deemed advisable to add to the foregoing, it being the intention to divide the working hours of the students, as nearly as possible, equally between manual and mental exercises." [1]

Dr. Belfield said in his inaugural address before the Chicago Manual Training School Association: "The distinctive feature of the Manual Training School is the education of the mind, and of the hand as an agent of the mind. My own opinion is that an hour in the shop of a well directed manual training school develops as much mental strength as an hour devoted to Virgil or Legendre".[2]

Manual training was introduced in the Pennsylvania State College experimentally in 1881. In 1883 the course was greatly extended and in 1884 went into full operation. The course was substantially the same as that of the Chicago

1. Ham, C.H.: Hand and Mind, p. 350.
2. Ibid, p 350

school, being an outgrowth of the Russian system and inspired by Dr. Runkle.[1]

In 1884 Tulane University, (Louisiana), came into existence by a donation of Mr. Paul Tulane. In the deed of donation the term "education" was defined to mean, "To foster such a course of intellectual development as shall be useful and of solid worth, and not be merely ornamental or superficial".[2] Hence, manual training was made a prominent feature of this institution.

Philadelphia adopted manual training in 1885. There were promotions to the manual training school at the close of the June term, from the twelfth grade or higher, and no one was admitted under fourteen years of age."The course of instruction embraced, so far as it went, a thorough course in English, mathematics, free hand drawing, mechanical drawing, and the branches of the fundamental sciences, but in addition to these branches, a carefully graded course in manual training formed a leading feature of the school. The intention of the school course was to give the boys such a knowledge of tools and materials, employed in the chief industrial pursuits of their time, as would place them in more direct and sympathetic relations with the great activities of the business world".[3]

The State Agricultural and Mechanical College of Texas was revolutionized by a manual training course. The

1. Ham, C.H.: Hand and Mind, p. 351.
2. Tulane University Record, 1885.
3. Ham, C.H.: Mind and Hand, p. 356.

institution was opened in 1876 on the plan of the old classical and mathematical college, and had no industrial feature whatever until 1880. Public sentiment at that time condemned so decidedly the misappropriation of funds and the perversion of the energies of the college under its administration as a literary school, that the directors accepted the resignation of the faculty without exception. In 1880-1881, a large dormitory was converted into a shop and a new corps of instructors was called. Wood-working, metal-working and the operation of metal-working machinery was taught.[1]

Massachusetts, the cradle of the American common school system, was the first state to legalize by statute the new education, placing manual training on an equal footing with mental training.[2]

In 1884 the Scott Manual Training School of Toledo, modeled after the schools of St. Louis and Chicago, registered 250 students, fifty of whom were girls. This was a novel situation as it placed the sexes on equal footing.[3] Education of the woman is absolutely imperative to progress. In the arms of mothers the child becomes the father of man. Due to the ignorance of the woman, the ancients made little progress. Egypt, Persia, Greece nor early Rome made any attempt at the mental or the moral uplift of the women.

1. Article by M.M. Dinwiddie, Professor of Chemistry, Texas State A. & M.
2. School Laws of Mass., 1883.
3. Mam, C.M.: Hand and Mind, p. 365.

8. Home Economics Education.

The Iowa Agricultural College was the first educational institution in this country to recognize the importance of instruction in home life.[1] A special faculty in the School of Domestic Economy was elected, with Mrs. Emma Ewing as president. The course of study was open to the graduates of colleges and universities. It extended through two years and lead to the degree of Master of Domestic Economy.[2]

9. National Legislation For Vocational Education.

Prior to 1862 no National Legislation of import to vocational education had been enacted. Several Agricultural and Horticultural Societies had been formed by educated men and college professors who had caught the vision of improved agriculture through their attendance at college or from lectures on natural sciences;

(1) Philadelphia Society for the Promotion of Agriculture in 1785,

(2) New York Society for the Promotion of Agriculture in 1791,

(3) Massachusetts Society for the Promotion of Agriculture in 1792,

(4) The Pennsylvania Horticultural Society in 1825,

(5) The Massachusetts Horticultural Society in 1829.

Attempts were made at state legislation for the establishment

1. Bevier, Isabel; Home Economics in Education, p 120.
2. Catalog of Iowa Agricultural College.
(Quoted from Ham, C.H.: Hand and Mind, p. 360.)

of an agricultural college in Massachusetts as early as 1850. The bill was defeated for two main reasons: first, it was the opinion of the farmers that the college would only prepare "book farmers" and that the promoters were only "book farmers"; second, the college literary men through ignorance looked down upon instruction in applied sciences as inferior to work in language and literature.[1]

In 1857, a bill prepared by J.B. Turner, a Yale graduate, once a professor at Illinois College, was presented in congress by Representative Morrill of Vermont. It passed the House but failed in the Senate. It was presented again in 1859 and passed both Senate and House but was vetoed by President Buchanan. In the campaign of 1860, both Douglas and Lincoln promised to sign the bill, if elected. At the next meeting of Congress, Mr. Morrill presented the bill. It passed both Houses, and was signed by President Lincoln on July 2, 1862.[2]

By the terms of the Act thirty thousand acres of public lands, per Senator and Congressman, were granted to provide colleges of agriculture and mechanic arts in the several states. Prior to the passage of the act, Michigan and Pennsylvania had established agricultural colleges.

Thus began the greatest scheme of education ever conceived by civilized man, free public vocational education. To the passage of this and subsequent acts we are

1. Bennett: History of Manual and Industrial Education, p.354.
2. Ibid. pp. 355-358.

indebted for our nationally known agricultural and engineering colleges from which have grown most of our state universities.

We now have sixty-nine colleges and universities that owe their birth to the passage of the Morrill Act.[1]

10. Apprenticeship Systems.

Apprenticeship is a combination of industry and education. It is a process of learning by doing, under which a minor is taught the art of a trade by one who is at the moment engaged in it, the minor paying either in whole or in part for this instruction by the work done on objects destined for the master's consumption or sale.[2] It was the chief means of trade education until the advent of the machine era.

So far as is well known apprenticeship arose in the middle ages and formed an integral part of the systems of guilds and corporations.[3] That apprenticeship took its rise in medieval handicraft, is the general belief. But going back to 2100 B.C., "If an artisan take a son for adoption and teach him his handicraft, one may not bring claim against him. If he do not teach him his handicraft that adopted son may return to his father's house".[4] Here it seems that apprenticeship was at an advanced state at

1. Report of the Commissioner of Education, 1927.
2. Douglas: American Apprenticeship and Industrial Education.
3. Encyclopedia Brittanica.
4. Harpers Translation - Code of Hammurabai, p. 74.

that time and had been in existence for a long time. The students of Oriental industry have pointed out a similarity between Chinese apprenticeship and that of Medieval Europe. The institution of apprenticeship is therefore much older than is generally believed and it was also much more universal.

The system of apprenticeship has been used to prepare men for all forms of industrial and professional work, not for the manual crafts alone." Apprenticeship is a higher form of trial and error process of learning, containing a large amount of imitative motion. All professions were once learned by the apprenticeship system."[o] Today quite a few lawyers are trained by a similar process.[1]

Medieval universities were controlled by guilds of students or teachers; graduation from the student rank meant, first, only entrance to the rank of teacher. The medieval craftsman had to produce a masterpiece to show that he had successfully completed his apprenticeship. The student had to produce his original piece of work before he could graduate. Our master's theses and doctor's dissertations are but remains of the apprenticeship system.

Another function of apprenticeship was the development of character and good citizenship and not a preparation for technical work alone. The old English guild acted as moral and educational supervisor of the apprentice, generally

o. Douglas: American Apprentice and Industrial Ed. p 17.
1. Redlich: American Law School, p. 1.

requiring church attendance. Originally the term apprenticeship was employed to signify not only the practical training in the mysteries of the trade but also that wider training of character and intelligence on which the real efficiency of the craftsman depends.[1] The master was responsible for the conduct of the apprentice who lived with him and often married his daughter; not only did the master instruct in the mysteries of the trade but in morals, citizenship and etiquette.

The English apprenticeship system and the colonial were very much alike. In the English system the term of seven years was universal but in America the term was generally less.

The English law gave the officers a right to bind out any unemployed person under twenty-one years of age, as an apprentice to a trade. By the poor law (English) of 1601, officers were given the power to apprentice the children of paupers, and the children of large families who were unable to support themselves. By this law apprenticeship was a means of poor relief in England.[2]

In Colonial America apprenticeship regulations were not administered by the guilds but by the town and county officers. It was a system of poor relief and a penalty for idleness.[3]

1. Brays: Boy Labor and Apprenticeship, p. 1.
2. Douglas: Amaricah Apprenticeship and Industrial Ed. p.42.
3. Ibid . p 43

By the year 1830 the factory system was in full operation and the breaking down of the apprenticeship system began. The laws regarding apprentices were repealed, and in the course of a few years skilled craftsmen were very scarce. The factory did not require skilled craftsmen to operate the machinery. The boy could soon learn to operate the machine and there was no reason why he should spend so many years in preparation to earn, when he could begin to earn immediately upon entering the factory.

Of course this factory work that could be mastered in so short a period of time was not worth as much as the work that required a long period of training. Again the factory output was so much greater than that of the old craftsman that the craftsman could not compete with the factory. Therefore the craftsman had to go to the factory to work. The result was that there were many youth in the factory learning the machine operations; the master did not have complete control over the youth; there was no time to be spent in any form of instruction except that of production; the factory was operated for production and profits; therefore, along with the increase in quantity of production there was a decrease in the quality of production and a corresponding decrease in the skill of the workmen. Child labor was exploited in all the factory towns. Disaster almost resulted as the youth went to work without training in the trade or training in morals and citizenship.[1] There was no one to assume the responsibility of training the child along the

1. Kelly, R.W.: Training Industrial Workers, p.48.

lines he had been trained, under the apprenticeship system. The factory boss is interested in production and not in the future of the boy. The master was responsible for the conduct of the boy as well as the products that he was able to produce.

The apprenticeship system had its faults as well as its good qualities. Often the apprentices were treated badly in the hands of cruel masters but this was the exception rather than the rule. As a system of education up to the advent of the machine era it served its purpose and served it well.[1] As a means of education today the apprenticeship system is entirely inadequate.

1. Dooley, W.H.: Principles and Methods of Industrial Education, p. 24-25.

SUMMARY

These brief sketches from history clearly show that man has, from earliest times, been concerned with the education vocationally of his offspring. When man first discovered some secret device, tool, or weapon, that enabled him to better his living conditions by protection or by making it easier for him to acquire food, then it was necessary for him to transmit his device, tool or weapon, to his children that they, too, might make some progress instead of relying on their instincts. The savage profited by his discovery as he could often barter the secret method or weapon. When some other member of the family learned the new method it was not by conscious methods of teaching; the others generally learned by absorption. It was soon discovered that one could be taught better by methods or devices. Therefore the old warriors were soon given the job of teaching the younger generation the art of defense and offense. The young boys played the games of war and profited thereby. By these very unconscious methods the young of each generation were learning the things that were vitally necessary to their self preservation; they were learning their vocation. The realization of the fact that skill of hand is

an advantage to its possessor goes back to the primitive time when man taught his son all the crafts he knew, and when the exceptionally skilled worker was regarded as possessing superhuman power. In the earliest times it was discovered that some people had the faculty of teaching or leading better than others. Then it was that educators or teachers became a class to themselves.

The earlier attempts at vocational education were for the ministers. The teachers of this class are responsible for much that was in the high school curriculum of fifteen years ago. Quoting Eaton: "Thousands of young women today (1926) are pursuing in the name of chaste and liberal culture a curriculum largely designed to prepare the Congregational Minister of a century gone to follow his vocation".[1] The earlier educators, whose work has been mentioned in this paper, were perhaps unconscious of the fact that they were laying the foundation of a future scheme of education that would be a blessing to all the world.

Though their attempts were largely failures from an educational point of view, nevertheless they have been very successful in the form of an experiment from which we have gained very valuable information.

It is to be noted that some of the manual work that they offered was not in any way designed to be vocational, but it was to strengthen the intellect, to cause a positive mind and muscle coordination, to take the place of

1. Eaton: Education and Vocations, p. 113.

amusements, and to make the schools more interesting in order that more education would be acquired and that more easily.

None of the school masters of the time had done anything toward the analysis and organization of the industrial work on a pedagogical basis. Drawing was the first subject to be so treated.

The colleges were the first that offered purely vocational subjects; first, for those entering the professions of law, medicine, ministry, and teaching; second, after the passage of the Morrill Act, for those interested in agriculture and engineering. For those, the colleges do serve the state and society in a commendable manner. But if those leaving the high school are going to college, they might as well have some preparation in the high school for that phase of college work in which they are going to continue their education. Again, the larger number are not going to college and it is the duty of the state to be of service to them vocationally while they are yet in the high school. Otherwise the state gives preference to those training for the professions. It is only a minority that go to college;[1] the mass of boys and girls finish their education in so far as the state helps them in the high school. For these reasons the writer has mentioned the vocational phase of college work and there is no doubt but that the colleges have been setting up the standards for high schools to work to, entirely too much so for the benefit of the agricultural class of people.

1. Departmnet of Superintendence, Sixth Yearbook, p 9.

Mention is made of the apprenticeship system of education and training for the following reasons: it is defended by organized labor since no good substitute has been found; it is undemocratic in that the number of apprentices is limited[1] and the selection of apprentices is private, not public; the present day masters instruct only in the arts of the trade and not in morals and citizenship; related subject matter is seldom if ever taught by the masters of today; it was once the sole means of education of the average boy.

1. Federal Board for Voc. Education: Apprentice Education. p. 33.

CHAPTER II

THE NEED FOR VOCATIONAL TRAINING

1. From An Educational Point of View.

Our school life is primarily a preparation for life. Education means many things to men. To men of different occupations, professions, or callings and to those who have no special vocation, education to each and every one is different. Generally education is the result of experiences whereby we become more or less able to adjust ourselves to the society in which we live and work. There are different opinions as to what will best fit us for this social adjustment. The process of education is the formation of desirable habits. Habits, being a fixed mode of response, the more of life's situations that we are able to meet with a fixed mode of response, and the more of life's general activities that are reduced to habit while we are yet in school, the more free will we be to think on real problems we meet from day to day in life. All the mass of past useful human experiences must in some way be transmitted to each succeeding generation and the means by which it is transmitted is the process of education.

The process of vocational education would be: The formation of desirable habits through one's present

needs, capacities, interests, and environment that will enable him to carry on a desirable gainful occupation in the most efficient manner possible. "Vocational education is then, that part of man's experience whereby he learns to carry on any gainful occupation."[1]

The extent to which the schools meet this demand, just so far have they been an asset to society. In so far as they fail, the schools are only parasites, drawing blood from an already over-taxed population, that is depending upon the schools for guidance. The stupenduous responsibility can only be realized by one who has been in close contact with a class of people that has not been benefited to a large degree by the public school system. We as school people associate ourselves too closely as a rule with school people or those that have been largely benefited by the schools. We see only ourselves, and at that, not as others see us. We measure all by our own yardstick and naturally they are by far short. We cry out from all the school houses that we are training for citizenship, for culture, for life, and that we are training boys and girls, not teaching subjects. True enough; that should be the case; and we need more school buildings for such training. But if we begin to question ourselves as to that part of the content of our high school curriculum whithis actually put to use by these would be cultured citizens who leave the doors of the high school, we find that we have failed in several cases.

1. Prosser & Allen: Vocational Education in A Democracy, p 4.

"Does anyone believe that the children of the common people will ever find values in one-tenth of all the mass of materials which we now try - with little success - to teach in geography and history?"[1]

The boy or girl must go out and enter into some sort of occupation, then will come the real test of what has been taught. The part that the young worker can put to use, either to help him master his trade or to help him appreciate what he is doing in that it makes him a better citizen, is the part that is of real worth. That part the youth will not forget, and for that part the school will receive credit on society's ledger. That other portion of accumulated facts that the youth has digested and given back to the teacher on examination day, will surely remain with the teacher; the youth has no use for them and he will meet life's problems just as effectively had he never heard of them. We like to stress the so-called fundamentals. We say that every one must get them before he is fit to live as an intelligent, cultured citizen in this great democracy of ours. It rarely occurs to us that people have lived and prospered long before the three R's of the fundamentalist were discovered. We would not belittle this part or portion of the youth's education. It is an economic necessity that all youth be so trained; also it is just as necessary, economically, that every citizen be trained for some sort

1. Snedden, David: Teachers College Record, Feb., 1928, p. 397.

of vocation.

Primarily people must be self-supporting regardless of their education or lack of education. Too long have we been going on the assumption that we can train good citizens without training them for any specific occupation. The early states required by their constitution that each parent should bring up his children to an honest trade.[1] Our government first provided for such opportunities in prisons and reformatories. In many cases we wait until the citizen becomes an inmate of the penitentiary before he is given a chance to learn a trade. Vocational education is not a panacea that will cure crime, make good citizens and expert workmen out of one and all, but we should not wait until the youth commits a crime or gets into the penitentiary to teach him a trade. We do not mind spending millions of dollars annually to help the unfortunates, but too often have we failed to help the ones that are willing to help themselves.

As to the need of vocational training in the high school, we should probably know just how many are going to be helped by such courses. Of the pupils that enter school only about fifty per cent ever get to the high school and only about ten per cent ever finish the high school course of study.[2] Why all of this drop out? Are not the parents interested in the education of their children? Are the children not interested in being educated?

1. Eaton: Education and Vocations, p. 113.
2. Lapp & Mote: Learning to Earn, p. 44.

Table I. Showing the number possible pupils in and out of school between the ages of 13 and 20.

Age	Out of school	In school
13	151,196	1,877,429
14	279,481	1,766,784
15	504,100	1,357,345
16	971,257	1,001,701
17	1,212,831	642,360
18	1,496,427	413,619
19	1,578,254	252,680
20	1,632,750	148,352

Data from the seventh annual report of the Federal Board for Vocational Education.

After looking at the above table, can we conscientiously say without fear of contradiction, that our school system is democratic? We can safely say that it is democratic and is of great benefit to certain groups, but; is there no practical way to be evolved whereby the children of the masses may have opportunity to learn their trade, partially to be sure, in the schools or at least be intelligently guided into the occupation that is best for them?

Why children quit school: (1) Desire to go to work, (2) Economic reasons, (3) Disinterested in the course of study, (4) Intellectually incapable, (5) Incorrigible, dislikes teacher. The first two groups comprise about forty-

five per cent of those who leave school.[1] If our curriculum could be so arranged for them to earn a little while they are yet in school, a large problem would be solved. In the large cities this has been partially cared for by the provisions of part-time education.[2]

The fourth and fifth groups are very small. A large number fall under the third group.[3] They quit because they see no correlation between what is being taught in the school and what they will meet and are actually meeting in every day life. As they see it the grade school prepares for the high school and the high school prepares for college; they are all but preparation steps for the next higher course. We need a course that will be complete so far as it goes for those that drop out of school before they have finished either of these steps. If the school system is to be of social value it must serve the entire society. Assuming then that these pupils would continue their school work if the school work were made interesting to them by directly connecting it up with actual work along some line in which they are interested, knowing also that it is through the child's desires and interests that he can best be taught, we arrive at the conclusion that vocational education should be provided for those that desire such and those that will be benefited by it.

1. Ayres: Laggards in Our Schools.
2. Kellar Day Schools for Young Workers.

It is life that trains men; we are assuming too much when we try to teach the boy or girl how to be a man or woman. The connecting part, the interest, the needs, the abilities, and the environment of the future citizens are not all present in the youth. The true form of education will not deal with those things which are so remote from practical life. The education of the church of the middle ages was a preparation for a future state. "This philosophy of ideal education has come to us from the past and persists as the basis of our educational system as we attempt to educate all the children of all the people, half of whom quit school at the age of fourteen."[1] Educational principles should be applicable to the masses and not to a few selected groups. We have to deal with the youth as we find them and we need not consider that they are directly interested in the far off future citizens as such. It would be an ideal situation if they were. Education is the adjustment of the individual to his environment. Unfortunately our educational changes have not been keeping pace with the changes in our environment.

The best index that we have to one's future is his reaction to the situation he has today. The trouble is that we have been unable to properly interpret the index. The least we can say is that a careful study should be made of each student, his aims, ambitions, interests, capabilities

1. Lapp and Mote: Learning to Earn, Chap. I.

and environment, and in the light of what we know interpret these, and so place or advise the student. Many times our placement may be wrong but it is through our mistakes that we often profit, and the experience that we gain as we go along may be of some help to others in the future.

2. Vocational Education To Insure Progress.

"The tremenduous expansion of production and the competition of business require more rapid and effective training of much larger numbers of people. The inadequacy of the 'pick up' method of training new workers is generally apparent."[1] The apprenticeship system does not meet the needs of present day industry. The progress of science and invention has increased the demand for the technician and the inventor, and has created many, and modified the process of many old jobs. Many trades have changed from a purely manipulative to a technical trade. The realization of this fact has led to the establishment of many vocational schools, public and private. Through the entire field of vocational education there is a tendency to substitute organized and conscious training for unconscious and unorganized methods. "In proportion as we are able to substitute organized for unorganized vocational education, social progress will be furthered, social wealth will be produced at less cost and society will be better equipped to carry out its hopes and aims."[2]

1. Prosser and Allen: Vocational Education in a Democracy. p13
2. Ibid: p 15.

"Education must be relied upon to secure the stability and progress of the nation."[1] Vocational education contributes to the conservation of natural and human resources. Social wealth is created by making most of the natural resources. As long as there is no limit to inventions, discoveries of science, or the application of technical knowledge, there is no limit to the amount of wealth that may be produced. These inventions and discoveries keep skill and knowledge in a state of flux. The old is being changed for the new continually. There is a constant demand for readaptation to the continually changing industrial situation. This new skill and knowledge cannot be obtained quickly enough by the 'pick up' method. The demand is for a better organized and more systematic way of transferring this skill and knowledge. The professions have long ago abandoned the 'pick up' method of acquiring knowledge but the trades have not to any great degree. The great mass of industrial workers are still trained by the 'pick up' method. "The imperative need for the rapid diffusion of new skill, knowledge and new job intelligence in our day is due to a number of causes:"[2]

1. The increased number of persons employed,
2. The wide area in which the workers are employed,
3. The constantly growing body of information and the resulting shift in tools, processes and machines

1. Prosser and Allen: Vocational Education In A Democracy. p19.
2. Ibid: p 28.

in every industry,

4. Modern means of communication makes possible the diffusion of this help effectively.

It requires organized vocational education to insure that this assistance is given in a systematic way whenever and wherever it is needed. We have had altogether too much of a tendency to think of vocational education as simply training the direct producer, yet we have our engineering and agricultural colleges as vocational schools. We have provided well for the engineering and agricultural technician but we have neglected the training needs of the prospective officers of industry.[1] Heretofore the road to the profession has been paved while that to the trades and industries has been filled with obstacles. Free schools followed by compulsory attendance seemed to be the dawn of universal education, but only in name not in substance. The elementary and high schools, the colleges and universities drive out the youth who cannot jump over the intellectual hurdles at the right pace. We need efficient education for the rank and file as well as for the leaders. Organized systematic ways must be found to equip the producers of the country to meet the demands and changing conditions of their calling. As a result human effort will be used to a better advantage, natural resources will be conserved, and the social wealth that can be used for desirable ends will be increased.

3. Vocational Education From A Psychological Point of View.

1. Prosser & Allen: Vocational Education in A Democracy, p 32.

"Children learn best, retain longest, find learning most stimulating and most usefully available when the subject matter and methods of school work are engaging and genuine, not repulsive and artificial."[1] More effort is put forth by pupils engaged in real work, and of course more educational growth is secured. Pupils that are employed both mentally and physically are not the kind to give the principal or the administrators disciplinary problems. The pupil that is only partially employed mentally is the pupil that does not like school; he is what we would like to call a revolter, but were it not for his type the world would make little progress.

One of the most pointed criticisms of the school today is that they devote their energies to preparing pupils for the next higher grade. Oft times we think a pupil dull or stupid because he fails to grasp the material thrown at him in the school room. This is not so in all the cases; occasionally the boy or girl is so wide awake to the world and its great work currents that he or she can see no connection between them and the school house, perhaps rightly. To be more specific, there is little teaching of value in the schools relating to the first problem of man's existence, that of self preservation. One regime of studies is set out to one and all with little regard to the sympathies and capacities of each; and the failure of the school to connect

1. Caldwell: School and Society, Vol. XVII, p. 309.

up the knowledge with a life of earning is one of the main reasons why so many pupils quit school.

That the theory of wholesale transfer of training has been exploded is one of the strongest arguments in favor of vocational education. The theory of vocational education is based upon habit psychology and not the old formal discipline idea.

Ideally, vocational education would cause the individual to live a complete life, complete in the following sense:[1]

A. Economically,

1. As an earner,
   (a) To cooperate with fellow workers, superiors and subordinates,
   (b) To work efficiently,
   (c) To secure a just reward for his work,
   (d) To advance the reputation of the occupation,
2. As a disburser,
   (a) To purchase, according to relative needs, the kinds and quantities best suited to his use,
   (b) To practice thrift.

B. Socially,

1. As a member of the family,
   (a) To respect the rights, privileges and opinions of the other members,
   (b) To assume a just share of the responsibilities.
   (c) To defend and preserve the family,
2. As a member of the community,
   (a) To assume a just share of the responsibilities, actively and financially,
   (b) To conform to desirable practices,
   (c) To respect the rights, privileges and opinions of other members,
   (d) To improve the community.

1. Quigley, T.H.: Lecture given at University of Tennessee. (See files Department of Industrial Ed. Univ. of Tenn.)

C. Politically,

1. To vote intelligently,
2. To respect constituted authority,
3. To cooperate in law enforcement,
4. To defend and preserve the government.

This outline might be enlarged very much but enough is given to show that it is of prime importance that every citizen be well trained for his or her respective occupation.

4. Vocational Education Versus The Leisure Time Theory of Education.

The Leisure Time Theory of Education: Several years ago in a book by Arthur Pound the following theory of education was given: The title of the book "The Iron Man" was a picturesque phrase to describe the dominance of the machine in American industry. The theory advanced was that as the machine displaced human energy and skill there would be a decreasing need for training for economic needs. Therefore, train for leisure time only or primarily because the machine had brought about reduced hours of labor by increasing the production per hour. Since the development of the power-driven machinery there is no place for the art of the craftsman. By the improvement of the machine the worker would become a mere tender of a machine requiring no manipulative skill, no technical knowledge or job intelligence; that trade training was necessary when the goods of the world were produced by craftsmen, that the machine now takes their place.

There is no doubt as to the value of training

for the proper use of leisure time but at the same time we would not discard training for work. The advocates of the 'leisure time theory' of education have overlooked the following:

The total number of old crafts did not exceed twelve. One half of them persist today. We still have to make tools by hand. Some one has to build the machine and keep it in repair, which requires more skill than all the old crafts combined. The tenders of some machines have to be especially skilled in order to avoid waste of materials.

The persistence of the small shop. There are 31,000,000 men engaged in the building trades. Eleven million farmers are not mentioned, also some 25,000,000 women engaged in household pursuits.[0]

The skill of the builder of the 'Iron Man' is measured in thousandths of an inch.

5. The Occupations and Their Educational Needs.

(a) Industry and its educational needs: The ability of the nation to hold its own with other nations depends on the skilled activity of its units. "The secret of the German ascendency was their scheme of industrial education."[1] From an economic point of view industry needs:

1. To invest labor and skill in a finished product,
2. Cooperative effort between employer and employee,
3. To relieve workers from monotonous employment as

0. Prosser & Allen: Vocational Education in A Democracy, p 72 pp f.
1. Lapp and Mote: Learning to Earn, p. 62.

far as possible,

4. Education in accident prevention,
5. An educational system that will develop initiative, patience, imagination, invention, and self reliance and eliminate awkwardness,
6. A survey of the industrial system to determine the social value of each industry.

We have been selling our natural resources in raw materials. We should finish more at home. Lawyers, soldiers, politicians, and authors occupy the center of the stage in the school panorama of American history. Most of our boys and girls need not emulate these as they must be self supporting at 18 to 20 years of age. "It is no wonder that even in relatively unchanging vocations the discovery was made that good productive organization is not likely to be good teaching organization. That masters should give up the dual role and either become producers or teachers of producers was inevitable."[1]

(b) Agriculture and its educational needs: Farming methods have been revolutionized until no calling requires so much and such diversified knowledge. The farm must feed and clothe that part of the population which produces no food and no raw material for clothing. Production of food must keep pace with the growth of population. Production per acre in the United States is far below that of European countries. It is only a matter of educating the farmer that

1. Eaton: Education and Vocations, p. 115.

the production per acre might be doubled. The farmer should be educated as to the amount and kind of food that he should produce. He needs education as to marketing his products profitably. There was a time not long past when the packers controlled the price of live stock; the grain market was controlled by dealers in futures. Most all edible products were held in a corner. Education in cooperative marketing is absolutely necessary to rural life. The problem of the distribution of products is one the farmer needs education in. Our agricultural colleges fail to reach the majority of our farm folk. The farmer deserves just as high living standard as any other man; his working hours are longer, his business risks are greater and he has to wait longer for his returns.[1]

(c) Business and its Educational Needs: The four fundamental processes in business are:[2] (1) Production, (2) Preparation, (3) Distribution, (4) Consumption. The enormous amount of business that is carried on makes our highly civilized life possible. The distribution of commodities affects the greatest number of people directly because it opens or closes the channels of consumption. That the business people of the world need a special kind of training is not to be forgotten. Business carried on in a scientific manner helps make those concerned more contented and happy. The "Hocus pocus" process of catching on to scientific methods in business is quite inadequate for the

1. Lapp and Mote: Learning to Earn. Chap. V.
2. Ibid: p. 116.

the present day needs. It does not develop initiative but depends entirely upon imitation. Business needs trained errand boys, clerks, book keepers, accountants, managers, buyers and trained people to consume the products of business, this training done to some extent by truthful advertising. Education for business is entirely practical and needed in every day life.

(d) Training for the Home: In our modern homes, no longer are the only tools necessary a broom and a frying plan, but hundreds of new labor saving devices and methods have come into our homes and the youth need instruction as to their proper application and use. Home making today is not the old routine of years gone by; now it is a profession, a business, a science, and an art. Training for the home will have to do specifically with the selection and preparation of food, selection of fabrics, making of clothing, care of infants, first aid, and hygiene. Education for the home must avoid training for the kind of homes in which people do not live, or the preparation of the kinds of food which the average person will not be able to consume. Preparation for the varied duties of the home should be regarded as a legitimate integral part of the education of every girl and some boys. It should be given throughout the entire school course.

6. The Need for Vocational Education According to Distribution of Population.

Table II. Distribution of Employed Population

From U.S. Census 1920

Occupational group	Number of Individuals	Percent of total
Manufacturing and mechanical industry	12,818,524	30.7
Agriculture, horticulture, etc.	10,953,158	26.3
Trade (bankers, brokers, salesmen)	4,242,979	10.2
Domestic and personal service	3,404,892	8.28
Clerical occupations	3,126,541	7.5
Transportation	3,063,582	7.38
Professional service	2,143,889	8.16
Mining (extraction of minerals)	1,090,223	2.62
Public service (State and Federal employees)	770,460	1.86
Total	41,614,248	

Table II shows the distribution of employed population of the United States. By examining the table we see that the first two groups comprise 57% of the employed population. Prior to the passage of the Smith-Hughes Act, no legislative action had been taken pertaining to the vocational education of less than college grade for the youth who were to enter these occupations.

Today large numbers of high schools (see Table XI) have no courses in the curriculum especially designed to prepare the youth for the occupations that comprise the first two groups of Table II.

Our schools spend most of their energies with the professional service group. There seems to be something un-

fair about this, that a doctor, a lawyer, preacher, or a teacher can attend public schools to prepare himself for his vocation, while the majority of workers have to depend upon other means by which they educate themselves. Possibly, our schools in the past have done the best possible for the employed group, but it now seems that something more might be done for that group that comprises the largest number of our employed population. Under the influence of the Smith-Hughes Act great strides have been made toward vocational education, and let us hope that the efforts put forth in the future will be of greater magnitude and in all successful.

SUMMARY

From an educational point of view, our system of education is out of balance. Our system was originally designed to meet the needs of certain groups and not the masses. If education is to be publicly supported, then let it be so designed as to benefit the public directly.

The progress of the nation depends upon the vocational ability of the individuals that make up the nation. It is imperative that the worker not only make the most of the time, that is his, but of the products with which he works. These products belong indirectly to the nation, and all society should see that they are not wasted.

From a psychological point of view vocational education best conforms to modern pedagogic methods. Education formerly dealt with too many abstractions to secure the best of attention from the pupil; now in dealing with the concrete and near at hand, the matter of obtaining and holding interest is reduced to a minimum.

Finally; a democratic system of education should include:[1]

1. A program of guidance to vocation and a preparation for it,
2. A program of preparation in the several worthy vocations of the state.

1. Eaton: Education and Vocations, p. 124.

CHAPTER III

VOCATIONAL EDUCATION SINCE THE PASSAGE OF THE SMITH-HUGHES ACT

1. The Smith-Hughes Act.*

That the Federal Government was in sympathy with the vocational education movement was voiced by the passage of the Smith-Hughes Act.

On February 23, 1927, President Woodrow Wilson signed the Vocational Education Act.

On July 17, 1927, the personnel of the Federal Board was completed.[1] The vocational education act was the culmination of an evolution in national appropriations for vocational education. National grants for vocational education in America had been made, but these early grants were given to the states for no specific purpose, without restrictions, without administrative machinery, and without the establishment of safeguards in the expenditure of money. As might have been expected the funds were in part dissipated, and little, if any, results were gained. Beginning, however, with the Morrill Act of 1862, the Federal Government has by

1. Federal Board for Vocational Education, Reports 1-4.
* See Appendix for text of Act.

a series of acts, the second Morrill Act, the Nelson amendment, the Hatch Act, the Smith-Lever Act, the Adams Act, and the vocational education act gradually found its way to a philosophy and policy in the use of national money for vocational education purposes.

Each of these acts has represented an advancement on the part of the National Government in dealing with the problem. Each act has included provisions which made the work more systematic and effective. The Morrill Act imposed but few conditions in the use of money by the states. The Smith-Lever Act imposed many conditions. It is safe to say that the vocational education act is the most specific and exacting of all these enactments in its requirements upon the states in the use of Federal money.[1]

In the past century since the early grants were made by the National Government, we have passed from the idea of the use of Federal money for indefinite educational purposes to the use of Federal money for very specific educational purposes carefully defined in the statute. We have passed from the idea of no obligation on the part of the state in the expenditure of Federal money to the conception of a solemn obligation on the part of the state to use the money in conformity with the requirements of the law making the appropriation; from the idea of no system and organization to the idea of definite system and organization in order that Federal money may be spent for the purposes intended.[2]

1. Reports 1-4 Federal Board for Vocational Education (Second Annual report page 10)
2. Reports 1-4 Federal Board for Vocational Education. (Second Annual report page 11)

(a) Purpose: The vocational education act provides a scheme of cooperation between the Federal Government and the States for the promotion of vocational education in the fields of agriculture, home economics, and industry. Under the provisions of this Act the Federal Government does not propose to undertake the organization and immediate direction of vocational training in the states, but it does agree to make year to year substantial financial contributions to its support. It undertakes to pay over to the states annually certain sums of money and to cooperate in fostering and promoting vocational education and the training of vocational teachers.

The grants of Federal money are conditioned and the acceptance of these grants imposes upon the states specific obligations to spend the money paid over to them in accordance with the provisions of the Act. The state must show the kinds of vocational education for which it is proposed that the appropriations shall be used, and the kinds of schools in which the instruction is to be given. The state must set up courses of study, methods of instruction, and qualifications of teachers who are to give such instruction.

(b) Administration: The law provides for the appointment by the President of a representative Federal Board for Vocational Education. The members of this Board are the Secretary of Agriculture, the Secretary of Commerce,

the Secretary of Labor, and the Commissioner of Education, together with three citizens who represent, respectively, the labor, the manufacturing and commercial, and the agricultural interests of the nation.

For purposes of administration and supervision under the vocational education act the Federal board has divided the country into four regions, namely, North Atlantic, Central Region, Southern Region, and Pacific Region.[1]

For the supervision of the Division of trade and industrial education, the Federal Board has appointed a chief of the Division, an agent for each region, and a special agent for girls and women. For the supervision of agricultural education the Board has appointed a chief of the Division, an agent for each region, and a special agent for negro schools. For the supervision of home economics education there has been appointed a chief of the Division and two agents, each responsible for two regions of the country. For the supervision of commercial education the Board has appointed a chief of the Division and one special agent. For the supervision of the Division of civilian vocational rehabilitation the Board has appointed a chief, an agent for each region, and one special agent.[2]

These Federal agents act as administrative representatives of the Federal Board in the field, gather information regarding methods adopted by the several state boards for the administration of the act, inspect the work of the state boards in so far as it has to do with the requirements of the

1. Report of the Federal Board for Vocational Education: 1926.
2. Ibid: 1926.

law, with decisions and policies of the Federal Board, and with the approved plans for the states.[1]

To provide agencies representing the state the act requires that the state board of not less than three members shall be designated or created by act of legislature. These state boards are to work in cooperation with the Federal Board in carrying out the provisions of the act.[2]

(c) Statistics of Federally Aided Vocational Education:

Table III. Number and sex of teachers of vocational courses in specified types of vocational schools, Federally aided, by years, 1918-1927.

Year:	Agricultural Schools: Full Year Male	Agricultural Schools: School Year Male	Trade & Industry: Male	Trade & Industry: Female	Home Economics Schools: Male	Home Economics Schools: Female
1927:	3472	139	1813	250	22	1559
1926:	3279	172	1811	326	31	1524
1925:	3010	146	1566	279	33	1399
1924:	2524	166	1479	264	30	1303
1923:	2246	189	1311	242	38	1238
1922:	1975	170	1173	248	39	1124
1921:	1855	102	1087	219	10	894
1920:	1460	110	884	163	11	703
1919:	941	260	859	199	24	580
1918:	686	209	762	290	10	388

1. Report of Federal Board for Vocational Education: 1926.
2. Ibid: 1926.

From Table III one can get some idea of the growth of vocational education, of the types specified, since the passage of the Smith-Hughes Act. The continuous increase in the number of teachers for such courses puts new demands upon the teacher training institutions to supply the new demand. Another table in this paper indicates that there are not yet enough specially trained teachers to supply the demand. Note that the teachers of agriculture are employed for the full year, to make supervised practice in agriculture possible.

Table IV.*Number and sex of pupils enrolled in vocational courses in specified types of vocational schools organized under the approved plan of the Federal Board, by years, 1924-1927.

From Report of Federal Board for Vocational Education,1927.

Year	Agricultural Schools		Trade & Industrial Schools		Home Economics
	Male	Female	Male	Female	Female* *
1927	86,986	2,644	47,836	6,912	69,377
1926	79,641	3,271	44,987	6,406	68,351
1925	69,123	2,552	37,285	6,147	49,964
1924	66,475	2,539	29,410	6,262	47,369

* Does not include part-time students.
**Includes about 300 males enrolled in 1927.

Table IV. This gives the number of pupils enrolled in the specified courses since 1924. From this we get some idea of the number of pupils of school age that are receiving the benefits of vocational education as provided in the Smith-Hughes Act. Had it not been for the Act a

large part of these pupils would have no means to secure such training.

Diagram I, page 70 , shows graphically the increase in expenditure of money for vocational education.

Diagram II, page 70, shows graphically the percentage of Federal appropriations that have been used each year by the several states for vocational education.

(See the following page for Diagrams I and II.)

Diagram I. Total expenditures from State, local and Federal fumds compared with Federal funds, by years, 1917-1927. (In millions of dollars)#

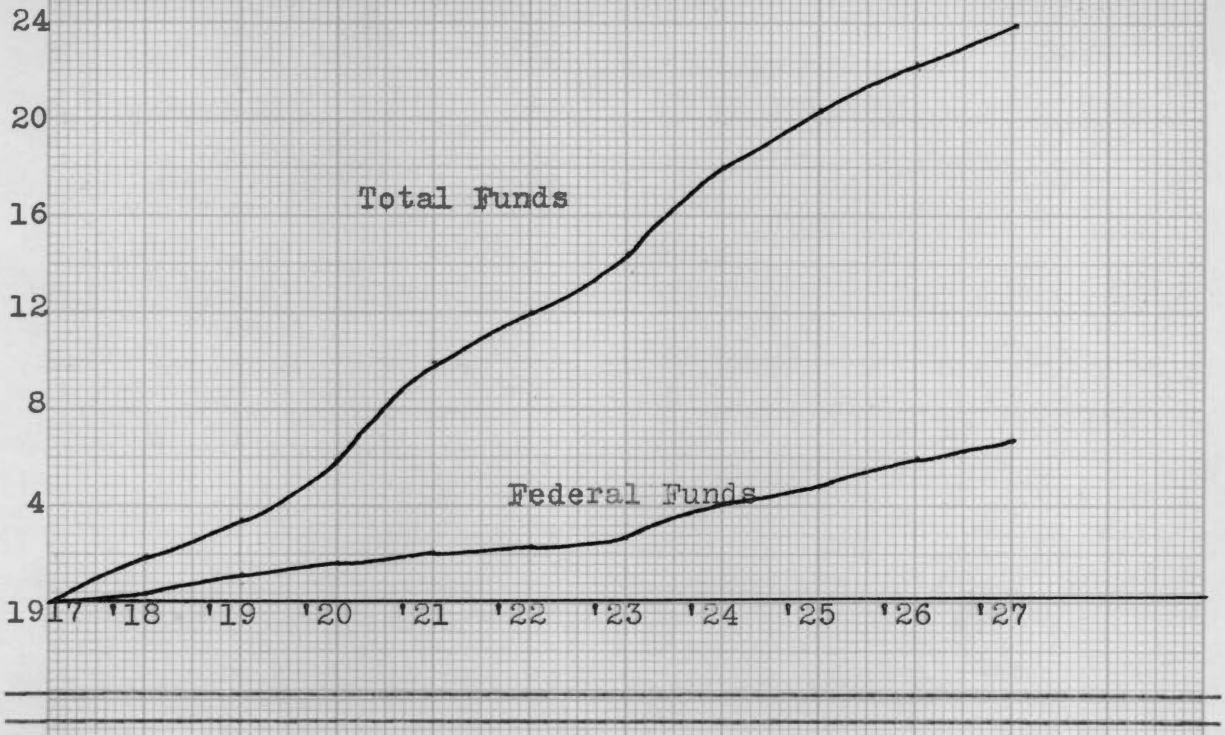
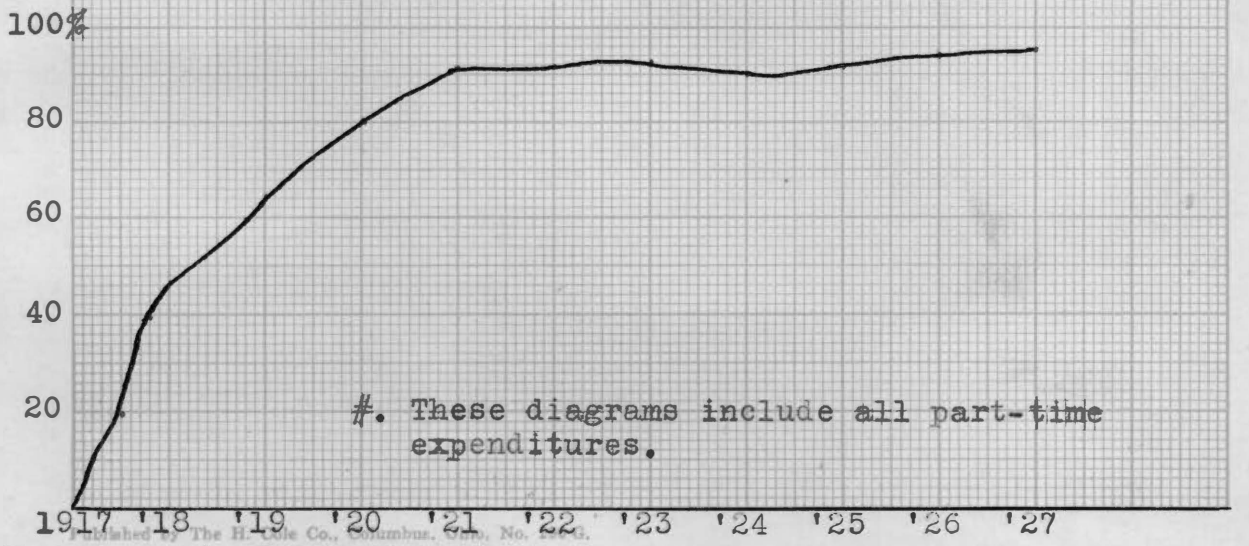


Diagram II. Percentage of Federal appropriations for Vocational Education used by States, by years, 1917-1927. #



#. These diagrams include all part-time expenditures.

From report of Federal Board for Vocational Education, 1927.

2. Vocational Agricultural Education Under The Provisions Of the Smith-Hughes Act.

Prior to the passage of the Smith-Hughes Act no attempts of any note had been made to vocationally train the farm boy or girl. Samuel Hartlib probably made the first attempt at agricultural education in England about the middle of the seventeenth century. This did not go much further than the plan itself.[1] From these early beginnings there has been a continued sort of progress toward agricultural education. The country boys and girls have, during all times, been neglected so far as their education is concerned. Country schools have always lacked the good equipment, the qualified teachers, and the splendid buildings that we find in the city systems.

The Smith-Hughes Act is the culmination of a series of attempts at agricultural education. All previous acts or attempts were pertaining to a higher type of work, college grade or its equivalent, or the training of agricultural technicians. The training of the actual farmer on the job had not been attempted.

It was realized by our National Legislators that the progress of the country depended upon the progress of the farming class of people, that it was the ultimate producers and consumers that the nation depended upon. The farmer boys did not have the opportunity to attend the state universities to get their agricultural education; that

1. Bennett:History of Manual and Industrial Education, p.38.

would be too technical for them to put into practice.

The text of the Smith-Hughes Act is very specific as to its demands for the conditions under which that type of work is to be given.

(a) Definition and Limitations: As defined in the Federal Act must meet four specific requirements.[1]

1. That it shall fit for useful employment.

A specific form of education is implied by this rather than general education.

2. That it shall be of less than college grade.

This condition brings vocational education to the boy, instead of taking the boy to some far away school; it also makes available the resources of the home farms of the pupils, where conditions for practice are ideal.

3. That it shall be designed to meet the needs of persons over fourteen years of age who have entered upon or who are preparing to enter upon the work of farms.

No country boy has lived on the farm for fourteen years without having tried his hand at most of the varied duties of the farm.

4. That provision shall be made for at least six months of directed or supervised practice in agriculture.

This also implies that the group to be dealt with is selected, that they have the proper facilities (farms) for supervised practice and that the class work will be definitely corre-

1. Federal Board for Vocational Education, Bul. (Agri. Ed.) Number 1.

lated with actual practice. By this is meant the project method of teaching. The teacher's responsibility with the pupil does not end with the terminating of the school term, but continues throughout the year.

The act further requires that all schools receiving Federal aid must be under public supervision or control. This means that no privately controlled school can secure Federal aid for carrying on any sort of vocational training.

To determine the controlling purpose of this type of education several factors have to be considered:[1]

(a) The amount of time given to the instruction specifically related to the vocation,

(b) The character of the instruction in so far as it is related to the field of production for which the pupils are being prepared,

(c) The ability of the teachers as measured in terms of the vocation which they are teaching,

(d) The plant and equipment as measured by conditions in the field of production, for which particular field the pupils are being prepared,

(e) The number of pupils entering the field of production for which they are prepared,

(f) The efficiency of these people after entering the field,

(g) The estimate placed upon the instruction by those already recognized as master workers in the field for which the pupils are being prepared.

1. Federal Board for Vocational Education, Bul.(Agri. Ed.) No.I.

(b) Funds: Every dollar of Federal funds must be matched by a dollar of the state or local funds, or both. The community values most highly and cherishes most carefully the thing in which it has made an investment. If the community really desires a thing enough it will be willing to support financially the thing desired. Federal or state aid is for the purpose of assisting a community and not making it a gift. Federal funds are available only for the salaries of teachers qualified under the state plan approved by the Federal Board.[1]

(c) Plant and Equipment of the Department of Agriculture in a High School:[2]

(a) Room equipped primarily for instruction in agriculture, with plenty of room for ordinary demonstrations,

(b) Sufficient equipment to demonstrate the ordinary improved scientific methods of testing milk, incubating eggs, testing soils, grafting trees, making butter, etc.,

(c) Suitable room for properly storing apparatus and properly caring for materials collected in the community,

(d) A good collection of reference books and bulletins,

(e) A few good farm papers and periodicals,

(f) The equipment for a group of from fifteen to twenty pupils will cost from $350.00 to $500.00. In case

1. Federal Board for Vocational Education, Bul.(Agri.Ed.),No.I.
2. Ibid. Bul. (Agri. Ed.) 1-13.

farm mechanics is to form part of the course about $200.00 should be added for such equipment; also a separate room should be designated as the shop.

(d) Courses of study: In general schools will maintain a course of study of not less than one year nor more than four years in length. For the one-year course from fifty to seventy-five per cent of the school time should be devoted to agriculture. Where a four-year course is maintained, fifty per cent of the school time is devoted to agriculture. Six months of supervised practical work is required.

(e) Methods of instruction: The methods of instruction should be such as to best prepare the pupils for the occupation of farming, and should consist of practical work, laboratory work, and theoretical instruction. The primary aim is production. The sequence of topics should not necessarily follow that of the text book but should follow the growing season. The stress given to a particular topic should be in proportion to its importance in the community and not the amount of written material available on the subject. Instruction should be planned for out of doors as well as in doors.

(f) Qualifications of teachers:

1. He should be a practical farmer as evidenced by two years of successful experience in farming.
2. He should know and be in sympathy with farm life, not theoretically, but from actually having been in the place of the farm boys.
3. He should be a graduate of a standard four-year

agricultural course of college grade.

4. The teacher of agriculture should be a man who will command the respect of the farmers of the community because of his experience, training, and qualities of leadership. He must be a helper to all the farmers of the community.

(g) Curriculum changes: The addition of vocational agriculture to the curriculum of the country schools necessarily brought about many changes. It was not to take the place of something that was dropped but it was added to the regular curriculum to make it complete in so far as possible. It was to fill up a heretofore vacant place; it served to connect the school and the economic life of the country boy, making school mean more to him. It caused increase of interest in the school by the country boys. The curriculum builder had to evaluate subjects in order to determine how much time was to be spent on the subjects that previously took half of the school boy's time.

Under the provisions of the act the academic subjects formerly taught all day in school had to be reduced to nearly half. The course of study of today is being made more and more applicable to the life of the pupil, the direct result being that the pupil is more interested and remains in school over a longer period.[1] This statement is attested by the tables showing the increase in enrollment in the vocational courses and the increase in the number of teachers for the subject.

1. Clements, D.M.: School and Society, Vol. 26, p.231-2.

(h) Statistics of Federally Aided Agricultural Education:

Table III, page 67, gives the number of teachers of Federally aided agriculture. In 1927 the number of full time teachers of agriculture was 3472, and only 686 in 1918.

Table IV, page 68, gives the number of pupils enrolled in such courses for the year 1924 as 66,475 males and in 1927, 86,986 males. Note also that some girls take agricultural courses.

Diagram III, page 78, is a graphic representation of the increase in enrollment in Federally aided agricultural courses from 1918 to 1927.

Table V. Expenditure of Federal, State and local money for vocational agricultural education, by years, 1918-1927.

From Report of Federal Board for Vocational Education, 1927.

Year	Total	Federal	State	Local
1927	$7,469,295	$ 2,801,591	$ 1,509,065	$ 3,158,638
1926	7,164,460	2,656,886	1,571,426	2,936,147
1925	6,146,124	2,262,542	1,370,964	2,512,616
1924	5,253,912	1,897,807	1,203,486	2,152,618
1923	4,647,042	1,669,698	1,108,461	1,868,882
1922	4,058,440	1,435,475	1,039,487	1,583,477
1921	3,393,088	1,192,131	968,764	1,232,282
1920	2,437,286	889,886	678,824	868,575
1919	1,413,938	528,679	399,982	485,276
1918	739,993	273,282	220,713	245,937

Diagram III. Enrollment in Federally Aided Agricultural Schools, by years, 1918-1927.
(Does not include part-time pupils)

From report of Federal Board for Vocational Education, 1927.

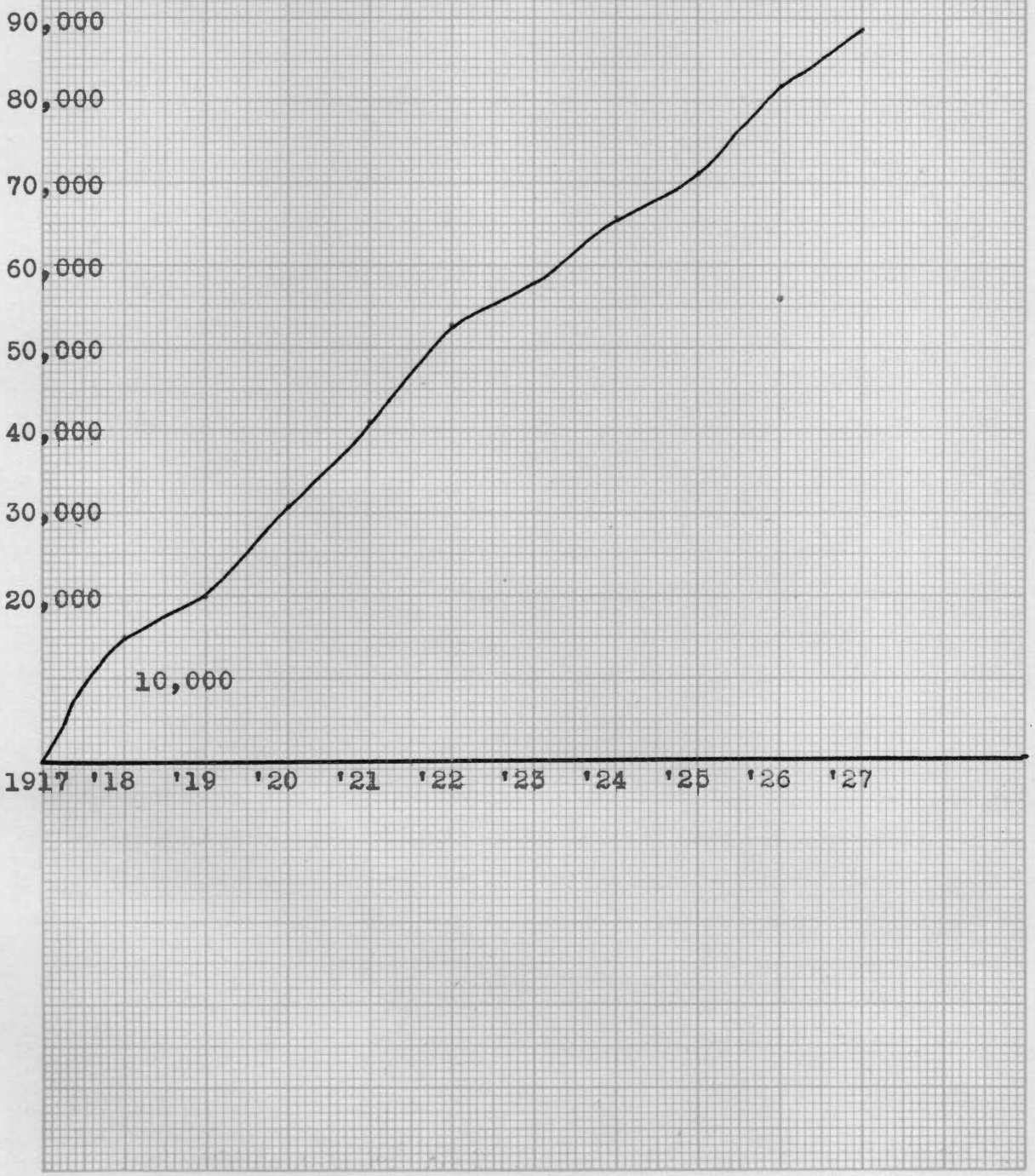


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Table V gives the source of all money spent for Federally aided agricultural education, years 1918 to 1927. Note the increasing amount that the local community spends.

3. Effectiveness of Vocational Agricultural Education in Tennessee.

That Vocational Agricultural Education is effective is attested by the report of a survey conducted by the Tennessee State Supervisor of Vocational Education, D.M. Clements. Parts of the report as published in 'School and Society' follows:[1]

(1) Seventy-five per cent of all farm boys who go to school where there is such a course offered take the course.

(2) Fifty-one per cent of all boys who finished the course in 1926 have gone to farming. Tennessee must be supplied with 12,000 new farmers each year.

(3) Sixteen per cent of all boys who finished the Vocational Agricultural course in 1926 are taking agriculture in college.

(4) Only five per cent of the boys who took Vocational Agriculture are idle, against twenty-four per cent of idleness of those who did not take Vocational Agriculture.

(5) The work of the vocational agriculture teacher is centered around the rural high school, where he

1. Clements, D.M.: School and Society, Vol. 26, p. 231-2.

teaches boys over 14 years of age who can provide for project work on their home farms or otherwise.

(6) Principals of 88 high schools have given their opinion of the value of the department in their schools and more than 80% of them felt that this department had:

(a) Increased the enrollment of the school,

(b) Kept the boys in school longer,

(c) Caused more regular attendance,

(d) Caused parents to take interest in school,

(e) Given the student a definite aim in his education,

(f) Vitalized the teaching of the entire school

(7) More than 90% of the 200 bankers, merchants, farmers, doctors and others that were asked about vocational agriculture in the schools said:

(a) "It causes the farmer to save more money and put it into the banks,"

(b) "Better methods of farming are being practiced in the community,"

(c) "The quality of farm products is being improved,"

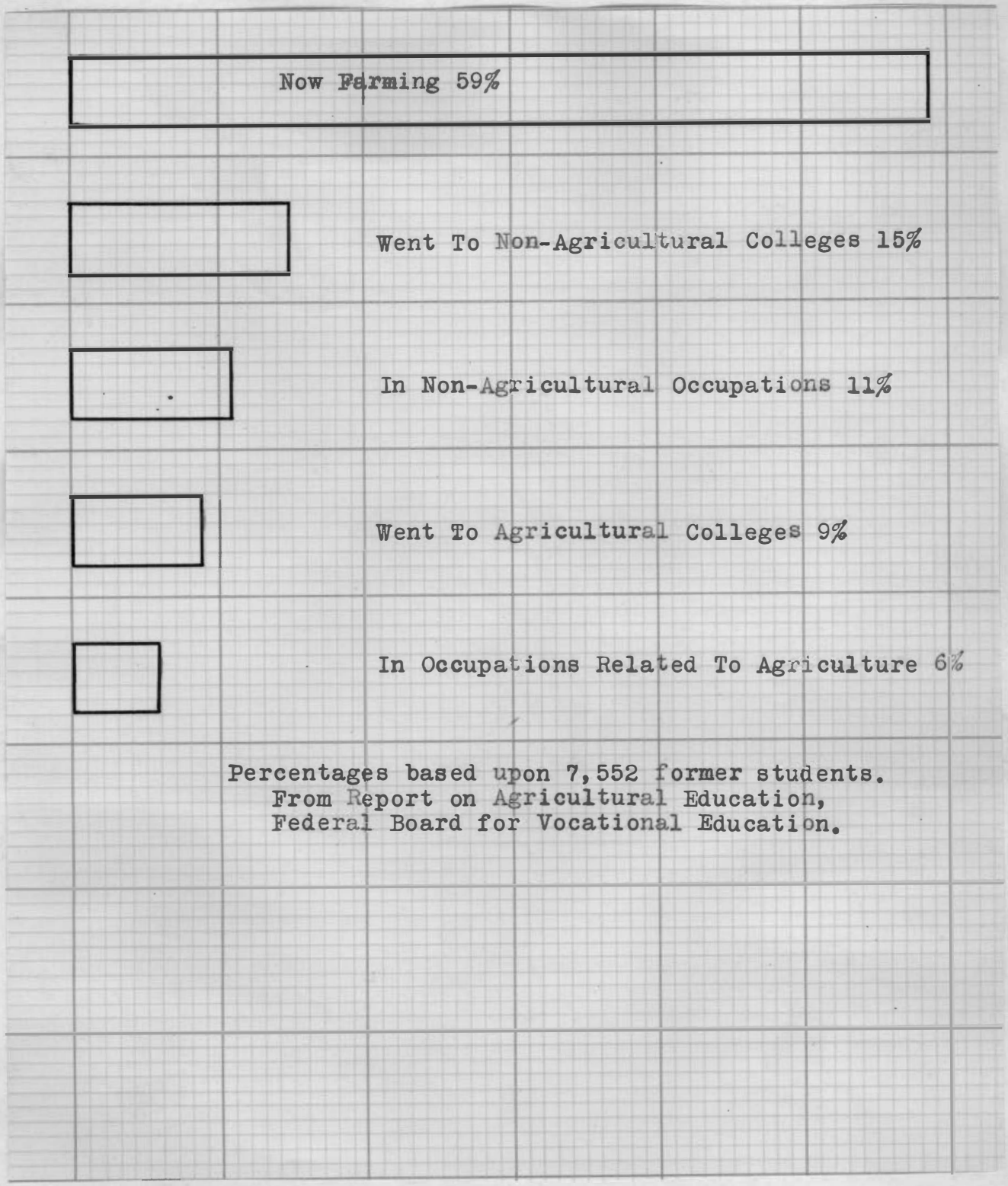
(d) "Livestock and crops have been improved,"

(e) "Living conditions are bettered,"

(f) "More interest is being taken in farming and education."

See Diagram IV. From this we find that 74% of the pupils that took vocational agriculture courses are in agriculture or related work. Probably by a better

Diagram IV. Occupational Distribution of Former Students of Vocational Agriculture.



Percentages based upon 7,552 former students.
From Report on Agricultural Education,
Federal Board for Vocational Education.

scheme of guidance the percentage would have been greater.

4. Home Economics Education.

That the home economics movement in education had its beginning in very early times is well shown in the splendid book by Isabel Bevier "Home Economics in Education". Miss Bevier points out that Martin Luther was an advocate of the education of girls.[1]

As stated before in this paper, Iowa State College seems to have been the first college to enter the field of Home Economics Education. Similar training for women was soon undertaken at the Illinois Industrial University and the Kansas State Agricultural College.

About the time of the beginning of the manual training movement for boys in the public schools, the New York Cooking School was opened in connection with the Free Training School for women.[2]

Gradually the movement grew and in 1912 the public began to take great interest in it. The United States Government officially recognized the claims of the home for education by the formation of the 'Childrens' Bureau'. In 1914 the United States Bureau of Education, in the Department of Interior published a series of bulletins on "Education for the Home". Some of the reasons given for the

1. Bevier, Isabel: Home Economics in Education, p. 42.
2. Ibid. p. 135.

publication of these bulletins are in part the following: "For most people the home is the beginning and end of life, all their activities are centered about it. Therefore the arts and sciences that pertain to home making are of most importance to them. If the schools are to prepare for the life we live, they must provide liberally for instruction in these arts and sciences."

The Smith-Lever Act provided for the giving of instruction and practical demonstration work in home economics and agriculture to persons not attending nor resident in the agricultural college.

(a) Definition and Limitations: The National Government further promoted the idea of education for home life by the passage of the Smith-Hughes Act. The Act provides for three types of schools or classes for instruction in Home Economics; (1) all day schools, (2) part-time schools, (3) evening schools.

The text of the Act gives the following definitions of Home Economics Education: "That form of vocational education which has for its controlling purpose the preparation of girls and women for useful employment as house daughters and as home makers engaged in the occupations and management of the home."[1]

The Act further stipulates that: "Such education shall be of less than college grade and shall be designed

1. Federal Board for Vocational Education, Bul. 28.

to meet the needs of persons over fourteen years of age who have entered or are preparing to enter upon employment."[1]

"Two provisions of the Act seem to discriminate against women: (1) The allotment of funds on the basis of urban population neglected the needs of the rural women. (2) Only one fifth of the money appropriated for industrial training could be used for home economics education."[2]

> "There is a growing belief that home economics should be required of every girl graduated from high school. More than half of the state superintendents reporting expressed themselves in favor of this. Only four did not think it advisable as an educational policy. Two said it would not be advisable until more eastern colleges give credit for home economics."[3]

It is quite apparent that if the colleges will not give credit for home economics, those that are taking a college preparatory course will not elect home economics to a great extent.

(b) Statistics of Home Economics Education.

(See following page for Table VI.)

1. Federal Board for Vocational Education, Bul. 28, p. 12.
2. Bevier, Isabel: Home Economics in Education, p. 178.
3. Department of Superintendence, Sixth Yearbook, p. 404.

Table VI. Expenditure of Federal, State, and local money for Vocational Home Economics Education, by years 1920-1927. (Includes expenditures for part-time schools.)

From Report of Federal Board for Vocational Education, 1927.

Year	Total	Federal	State	Local
1927	$3,337,827	$ 485,633	$908,382	$ 1,944,112
1926	3,137,391	499,631	810,624	1,827,136
1925	2,943,524	400,120	816,222	1,727,182
1924	2,744,635	331,860	740,318	1,672,456
1923	2,748,947	285,968	649,531	1,813,446
1922	2,118,562	245,885	671,382	1,201,284
1921	1,822,347	192,387	595,326	1,034,634
1920	1,054,489	155,768	329,633	569,087

Table VI gives the sources of all money spent for Federally aided home economics education from 1920 to 1927. Note the continued increase in the amount of local money put into this type of education; evidently the local community thinks it is worth while.

Table III, page 67, gives the number of teachers of such courses and Table IV, page 68, gives the number of pupils enrolled in the courses (Federally aided). Note here the increase in enrollment in the home economics courses.

Table VII. The following table shows the replies obtained from 9,504 high schools in the United States. Of the number of schools reporting only 60% were offering Home Economics Education. Only 81% of the teachers of the subject were especially trained for the work.

High Schools	Teachers of Home Economics	Teachers trained in Home Economics	
		No. of teachers	Percent of the total
Junior	937	824	87.9
Senior	242	205	84.7
Junior-Senior	1,153	927	80.4
Regular	5,779	4,613	79.8
Total	8,111	6,569	81.0

Table VIII. Girls and Boys enrolled in Home Economics Courses in the schools of Table VII.

High Schools	Girls			Boys		
	A	B	C	A	B	C
Junior	146,641	107,001	73	127,992	2,396	1.9
Senior	44,228	13,708	31	40,406	121	.3
Junior-Senior	142,916	71,053	49	131,734	856	.7
Regular	643,097	233,055	36	550,720	3,644	.7
Total	976,882	424,817	43	850,852	7,017	.8

A - Entire enrollment.

B - Enrolled in Home Economics Courses.

C - Percentage of entire enrollment.

U.S. Bureau of Education, Bulletin 35, 1926.

Table VII indicates that there is a demand for trained teachers for home economics as only 81% of the teachers reported were especially trained for the subject. Also only 60% of the schools reporting were offering home economics. This indicates that many schools need to be awakened to the advantages of such courses to their pupils.

Note: Tables VII and VIII include courses not Federally aided.

Table VIII gives the percentage of the total enrollment of the schools that offer home economics, that take the home economics course. Note that 43% of the girls take home economics and only 8% of the boys. The percentage is smaller in the senior high school due to the fact that the group is more selective preparing for more varied occupations or preparing for college.

Table IX. Average initial cost of equiping the home economics departments of the 5,737 high schools reporting. Also the average annual equipment and supply expenditures.

From United States Bureau of Education, Bulletin 35, 1926.

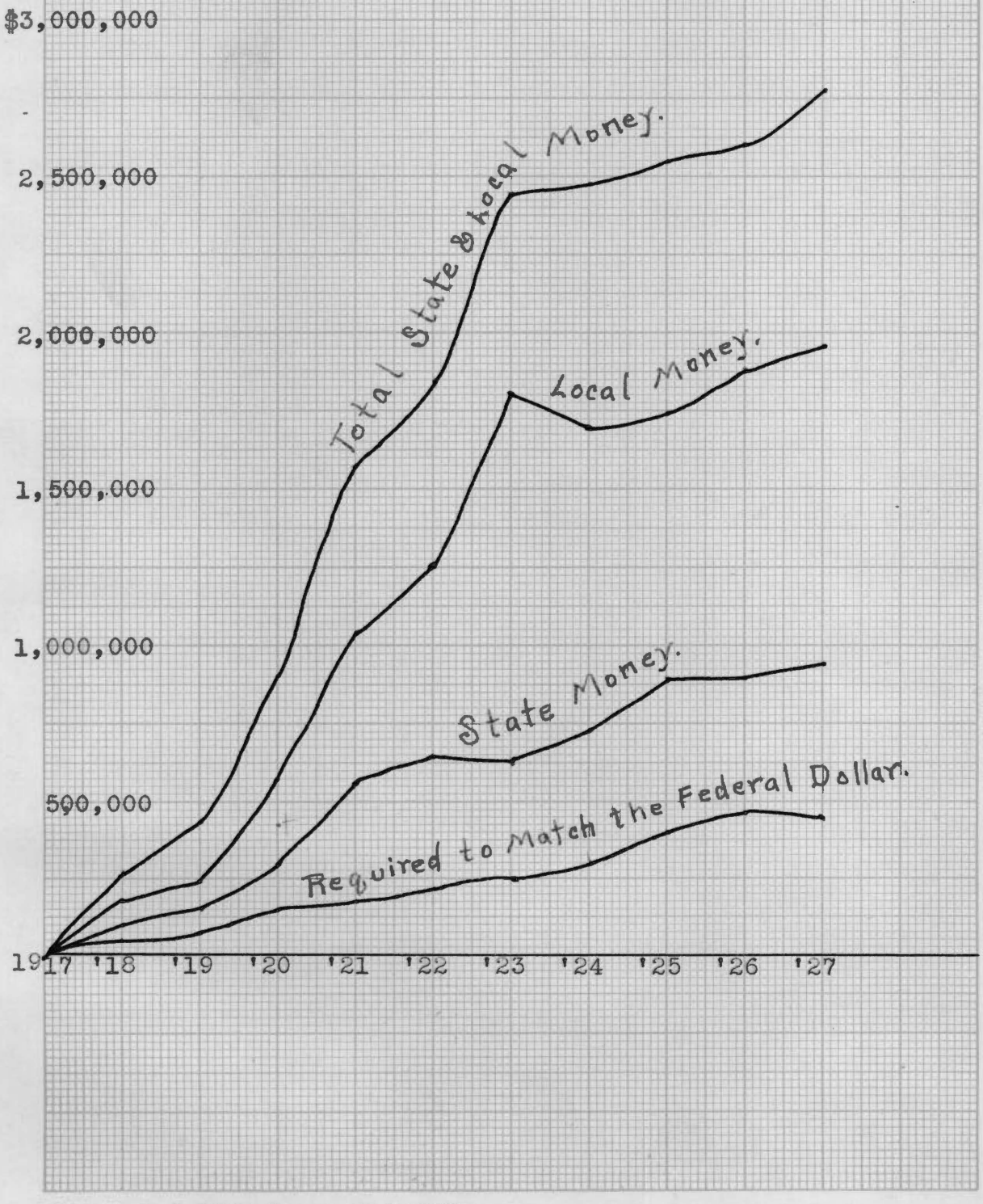
High Schools	Initial cost of equipment	Foods		Clothing	
		Annual Expenditure		Annual Expenditure	
		Equipment	Supplies	Equipment	Supplies
Junior	$ 2,672	$ 205	$ 280	$ 214	$ 115
Senior	3,057	170	277	104	150
Junior-Senior	1,599	147	208	102	90
Regular	1,275	123	157	80	73
Median	1,514				

Table IX gives the average initial cost of equiping home economics departments in 5,737 high schools. With these average costs for a guide the school budget maker can determine fairly well how much would be required to equip the department for teaching home economics. Note that the equipment in the senior high school costs more for one of two reasons, the equipment must be more elaborate or more extensive, probably both.

Diagram V is a graphic representation of the expenditure of money of different sources by years. Note the steady increase in the total amount of money spent. This does not include any expenditures not Federally aided.

(See following page for Diagram V.)

Diagram V. Vocational Home Economics Education.
Expenditures of State and local money compared with amount needed to match the Federal dollar, by years, 1918-1927.



Published by The H. Cole Co., Columbus, Ohio. No. 290 G.

From report of Federal Board for Vocational Education, 1927.

5. Commercial Education.

There is a fast growing public demand for a definite preparation for business occupations. It is only through a thorough preparation for these occupations that there may be much contributed to greater vocational efficiency that will result in social happiness. The relation of vocational efficiency to the efficiency of a business community has been realized by business men and it has caused them to take greater interest in commercial work.

That educators have given increased attention to this phase of school work and that the public is directly interested is attested by the tables and diagrams shown.

Recent occupational studies have revealed a definite trend toward standardization of office and store occupations and trades.[1] This standardization was brought about by the operation of the laws of economy. The efficient performance of many tasks make the business organization efficient and the best means of obtaining efficiency is through standardization. The division of labor in offices is now generally practiced. The workers, therefore, through repetition of comparatively few tasks acquire great skill and dexterity.

For one to gain entrance into one of these occupations necessarily means that he must have special training.

Due to the fact that business methods are becoming more and more standardized, the objectives of business

1. Bureau of Education, Dept. of Interior, Bul. No. 4,1928.

training are more and more tangible; hence the public schools are incorporating more such studies in the curricula.

The results as shown in the diagrams and tables indicate that the service rendered is very much worth while.

It is to be noted that the public high school and college enrollments in commercial courses have had a steady growth. Since the year of 1914 there has been a noted slump in the enrollment in such courses in private high schools, except the continual growth up to 1920 in the private commercial schools, caused probably by the rehabilitation of ex-service men.

Public high schools and colleges are awakening to the idea of service to the community as a whole and not to the small group that are going to college.

The offering of the public schools today include typing, short-hand, book-keeping, business practice, office methods, law, filing clerk training, office machine operation, retail selling, general sales training and many others.

Quite a few studies have been made recently in an attempt to discover just what the high schools should offer to the public in the way of commercial training ... Quoting these from their sources:[1]

"Recording clerks comprise the largest number of both men and women commercial workers.

Book-keepers are relatively insignificant in numbers when compared with recording clerks.

Stenography and office machine operation are predominately women's occupations.

1. Sixth Year Book - Dept. of Superintendence, p. 455 pp.f.

Secondary school education is desirable as a preparation for office work.

The need for clerical workers who are skilled in the use of various calculating devices is universal.

Departmentalization and specialization within departments have lessened an office worker's opportunity to "learn the business" through experience. Hence supplementary business training of the non-skill type must be provided for those who want to advance beyond the clerical level.

Commercial employments in Cleveland, Ohio, need annually almost ten times as many commercial school graduates as are now available to supply the demand completely.

(a) Objectives of Commercial Education.

Commercial curriculums have no definite objectives except when planned:

(a) In connection with a definite group of pupils,

(b) In relation to definite commercial positions,

(c) In the community in which the curriculums are to be given.

The number of high school drop-outs and graduates employed in selling positions in every community is so large that a retail store training curriculum might well be offered in many high schools.

The commercial program for any community should be planned to meet the needs of prospective office and store workers in that community and should be based upon the business life of the community, and the business experience

of the pupils for whom the program is planned."

(b) Statistics.

Table X. Enrollments in Commercial Curricula in different types of schools, 1914-1924.

Year	Public High Schools: Men	Public High Schools: Women	Private High Schools and Academies: Men	Private High Schools and Academies: Women	Private Business & Commercial Sc.: Men	Private Business & Commercial Sc.: Women
1914	68,000	92,650	9,717	7,740	85,432	82,631
1915	92,226	116,379	9,360	8,346	94,870	88,416
1916	105,142	138,043	9,056	8,172	99,134	93,254
1918	104,418	173,857	9,157	14,644	96,449	193,130
1920	(No Data)				139,551	196,481
1922	" "		(No Data)			
1924	143,991	286,984	6,269	11,941	68,247	120,116

From Department of Interior, Bureau of Education, Bulletin, 1928 No. 4, Commercial Education.

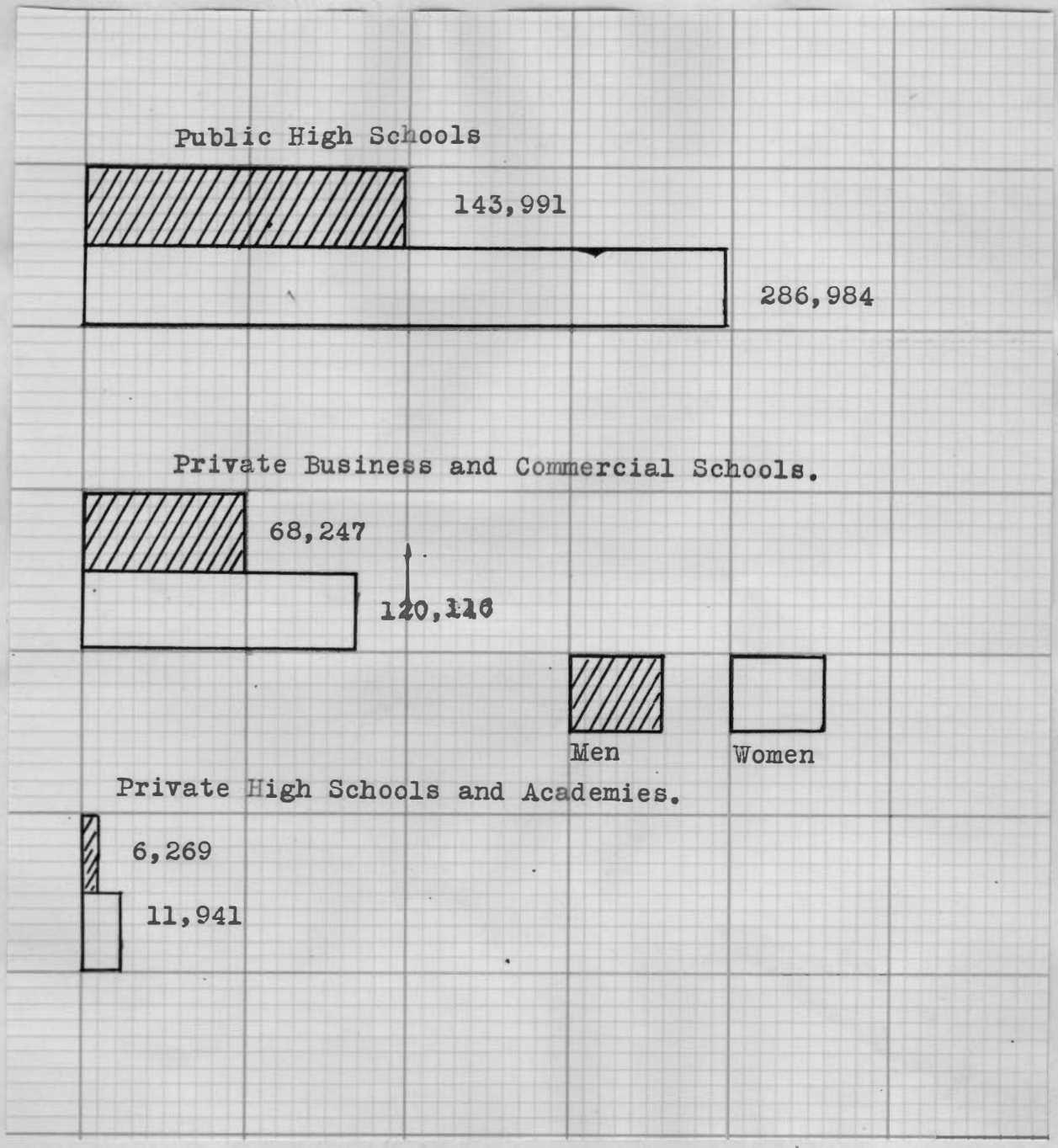
Table X gives the enrollment in commercial subjects in the different types of schools, 1914 to 1924. From this table we see that the commercial courses should be planned to meet the needs of the girls primarily, for nearly twice as many girls are enrolled in the courses as men. Note that the enrollment in the private schools has fallen off considerably since the public schools have begun to offer these subjects. The high enrollment in 1920 in the private schools was due to the rehabilitation of ex-service men. It is the duty

of the public schools to save the tax payers' money by offering the subjects that will be of value to the public.

Diagram VI graphically represents the figures of Table X for the year 1924.

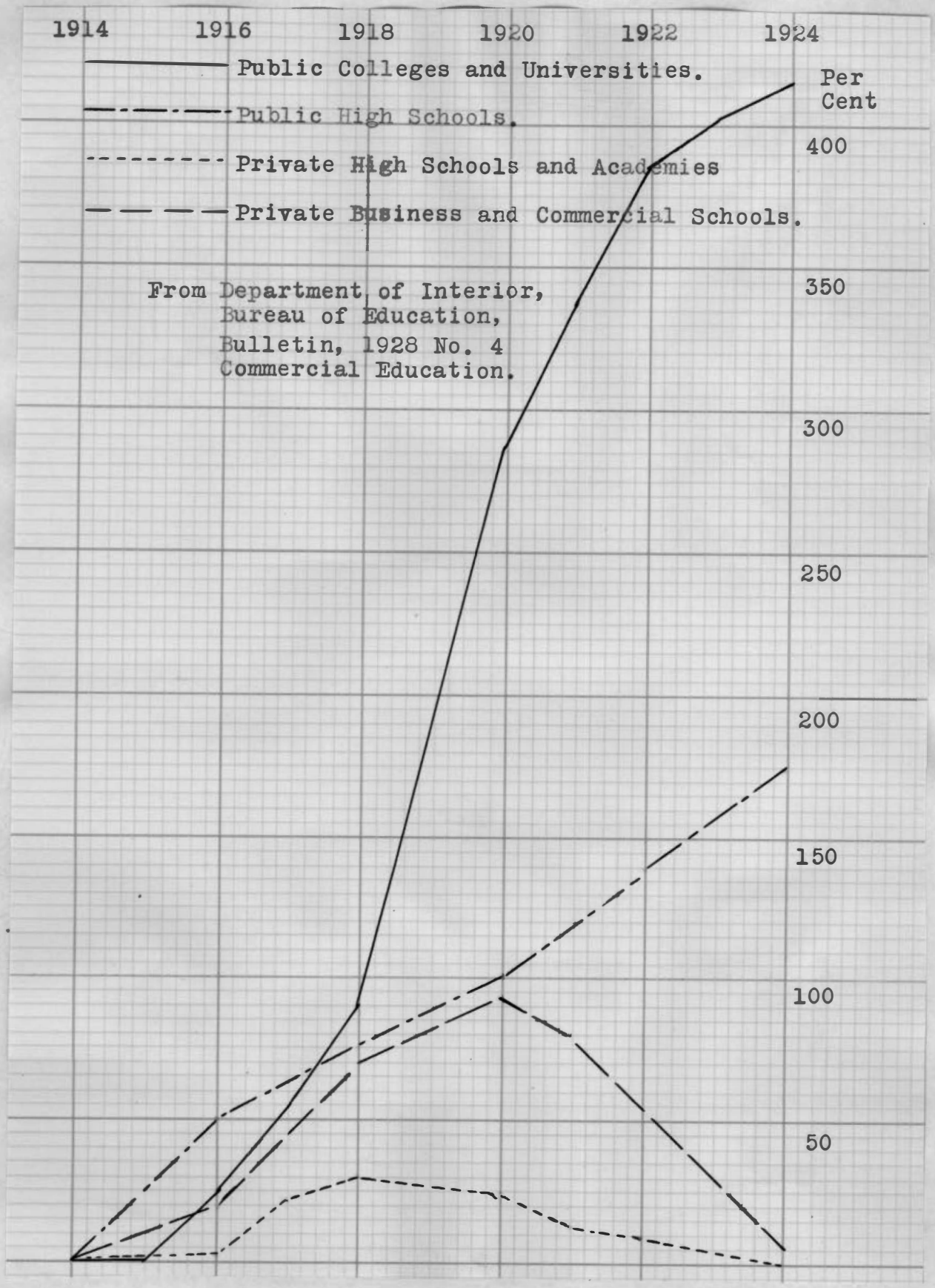
Diagram VII showing the percentage change in enrollment in commercial curricula in the different types of schools, indicates the increased amount of service that the public institutions are rendering the public. Note the 175 per cent gain in the high schools in the past ten years. Also the 400 per cent gain in the colleges and universities.

Diagram VI . Distribution of Men and Women pursueing the Commercial Curricula in the various types of schools. 1923- 1924.



From, Department of Interior,
Bureau of Education,
Bulletin, 1928 No. 4
Commercial Education.

Diagram VII. Showing the Percentage change in enrollment in commercial curricula in different types of schools, 1914-1924.



6. Industrial Education.

Industrial education is as old as the industries. It has been only during the past fifteen years that the public schools have seriously considered the matter of vocationally training the youth. The developments of the past eleven years have impressed the public with the new idea in education, sufficiently to support a wide and highly developed program of industrial education.

The part of this program that is responsible for the part-time industrial education will not be discussed in this paper. Part-time education in Tennessee has been ably discussed in a paper by Professor Clyde H. Wilson (1927),[1] to whom the writer is very much indebted for help and valuable suggestions concerning this paper.

The all day trade school is the parallel of our high school. This type of school is being sponsored in many of our cities and is meeting with great success. The total enrollment in such schools for the year ended June 30, 1927, was 54, 738.[2]

This type of school is rather difficult to establish, especially in cities where the high schools of academic type predominate.[3] In such school communities it is the tendency of children completing the grade school to go to the academic type of high school or go to work.

Disregarding the fact that the great majority

1. Wilson, C.H.: Part-Time Educ. in Tenn. Master's Thesis. Univ. of Tenn. 1927.
2. Eleventh Annual Report of Federal Board for Vocational Education, Table 3.
3. Department of Interior, Bureau of Education, Bul.No.23,1926.

of high school pupils enter employment before or soon after graduation, the high schools persist in offering the type of curriculum approved by the Association of Secondary Schools and Colleges. Where such ideas predominate we cannot expect many to be attracted to the schools whose only purpose is to give training for some specific job. In some localities there seems to be more or less of a social stigma attached to those who enroll in such classes.

"Because of the difficulties surrounding the full-time day trade school on a pre-employment basis, there has been a marked tendency to develop trade training on a cooperative basis, whereby boys alternate between work and school every week or two weeks. While there is considerable evidence that the tendency is toward establishing cooperative part-time and apprentice training, the full-time school as such, is still an important type of institution which, in many cities throughout the country, is doing an important piece of work."[1]

There is no doubt but that one of the greatest achievements thus far accomplished, if no more, is that the interest taken has caused quite a bit of scientific study and investigation in regard to industrial education, the benefits of which we hope to reap a harvest in the near future.

"The entire matter of vocational training is in the process of adjustment and unquestionably will be carried on in the future in such ways as are most efficient and

1. Department of Interior, Bureau of Education, Bul. No. 23, 1926, p. 172.

result in the lowest net cost to society. To an increasing degree it is recognized that training costs money. An employer cannot evade this cost by looking to some one else to train his men. If the training is provided by public schools, he will have to pay his share by means of taxes. If he trains his own men he will pay directly. If he attempts to get along without training any men he will eventually have to put up with a supply of incompetent or half competent workers. Then inefficiency on the job and lack of skill will probably, in the end, cost him more than would participation in an organized training scheme. If he is to continue in business, he cannot get along permanently with semi-skilled or unskilled workers; consequently he will have to face the fact that the untrained will have to acquire training for the job while in his employ. From the present situation in industrial training, it appears that for many occupations certain phases of training can be given more efficiently and at less cost on the job than in any form of school. On the other hand, there are types of training which can probably be given better and at less cost and with greater social values, in public schools. However, there are innumerable cases where the most efficient and less expensive plan involves some type of cooperation between industry and the public school. Notwithstanding the fact that examples of such cooperation are increasing at a remarkably high rate, a beginning has hardly been made in solving the problem."[1]

1. Deptl of Interior, Bureau of Education, Bul. 1926, No. 23, p. 183.

(a) Terminology.

Much confusion has arisen over the terms "manual training" and "vocational training". Some times other terms are used to designate a course of strictly vocational character. The term "manual training" is losing favor and the terms "manual arts", "prevocational industrial education", "industrial arts", or "practical arts" are being substituted. "One large city system of schools, in order to avoid confusion, is using the term "manual education" to cover all forms of training where there is work involving manual manipulative skills. Another large city system of schools uses the term "elementary manual training" in relation to the manual work that is given to the grades, including and below the sixth grade; the term "prevocational industrial education" is used in connection with the work given to the seventh, eighth, and ninth grades; and in the senior high school the term "vocational and non-vocational education" are used."[1]

There is great need for some sort of standardized terminology that may meet with general approval and consequent general use.

(b) Content of Manual Arts Courses.

There has been considerable changing in the content of courses in manual arts and its organization, in an effort to give training that will develop abilities to meet, successfully, normal living conditions. In the attempt to develop such abilities there has been organized courses in "home mechanics", with the idea of offering training that

1. U.S. Bur. of Ed. Bulletin 23, 1926, p. 179.

would qualify one for the performance of many repair and maintenance jobs of the home and community. This is especially true, and advisable, for smaller schools where trade shops cannot be maintained on account of their cost.

"Special emphasis is placed upon the selection of projects that are of practical value in the ordinary home life, and which will appeal to the interests of the pupils, and whose learning difficulties are on a level comparable with the pupils' accomplishments."[1]

In the junior high school the general shop as an organization for instruction has much favor. The general shop is fundamentally a prevocational organization. The plan generally consists of a cycle of shops, separately, or in one, in which the pupils are given a chance to choose or refuse, with the help of the teacher, certain types of work for which they are best suited. It is a type of try-out instruction; the pupils are given opportunity to try their skill and ability at several definite kinds of work, in order that they may wisely choose a life's vocation. The work may be of a preparatory nature for those who will enter definite trade courses later.

In formulating the aims of any course in vocational home mechanics or prevocational training, great care should be exercised not to base them upon tradition or prejudice, but upon the actual conditions found in the community,

1. U.S. Bureau of Education, Bulletin 1926; Chap. VIII, p. 181.

the abilities and interests of the child, and the equipment or material to be had.

(c) Statistics.

Table XI. Expenditure of Federal, State and local money for Vocational Trade and Industrial Education, not including part-time general continuation education, by years, 1920-1927.

From Report of the Federal Board for Vocational Education, 1927.

Year	Total	Federal	State	Local
1927	$ 6,463,108	$ 1,553,914	$ 1,758,781	$ 3,170,412
1926	6,194,108	1,512,544	1,580,116	3,101,446
1925	5,604,126	1,227,128	1,467,008	2,909,989
1924	5,059,789	1,039,764	1,359,943	2,660,081
1923	4,374,993	902,158	1,282,508	2,189,326
1922	3,843,561	782,500	1,124,808	1,936,252
1921	3,336,218	685,821	1,074,160	1,576,236
1920	2,408,919	509,385	786,567	1,112,966

Table XI gives the source of all money spent for Federally aided trade and industrial education from 1920 to 1927. From the table we see that the public is satisfied that the money is being well spent, by continuing to spend for such education.

Tables III and IV gives the number of teachers and pupils in the Federally aided trade and industrial schools.

(See pages 67 and 68 for tables III and IV)

Table XII. Comparative Data: Showing cost per pupil of instruction in different types of schools.

From Report of the Commissioner of Education, 1926.

	1922			1924		
Type of School	A	B	C	A	B	C
High	25.7	$ 1938	$ 86.89	26.5	$ 2166	$ 92.79
Vocational	27.5	2056	98.09	28.7	2129	94.01

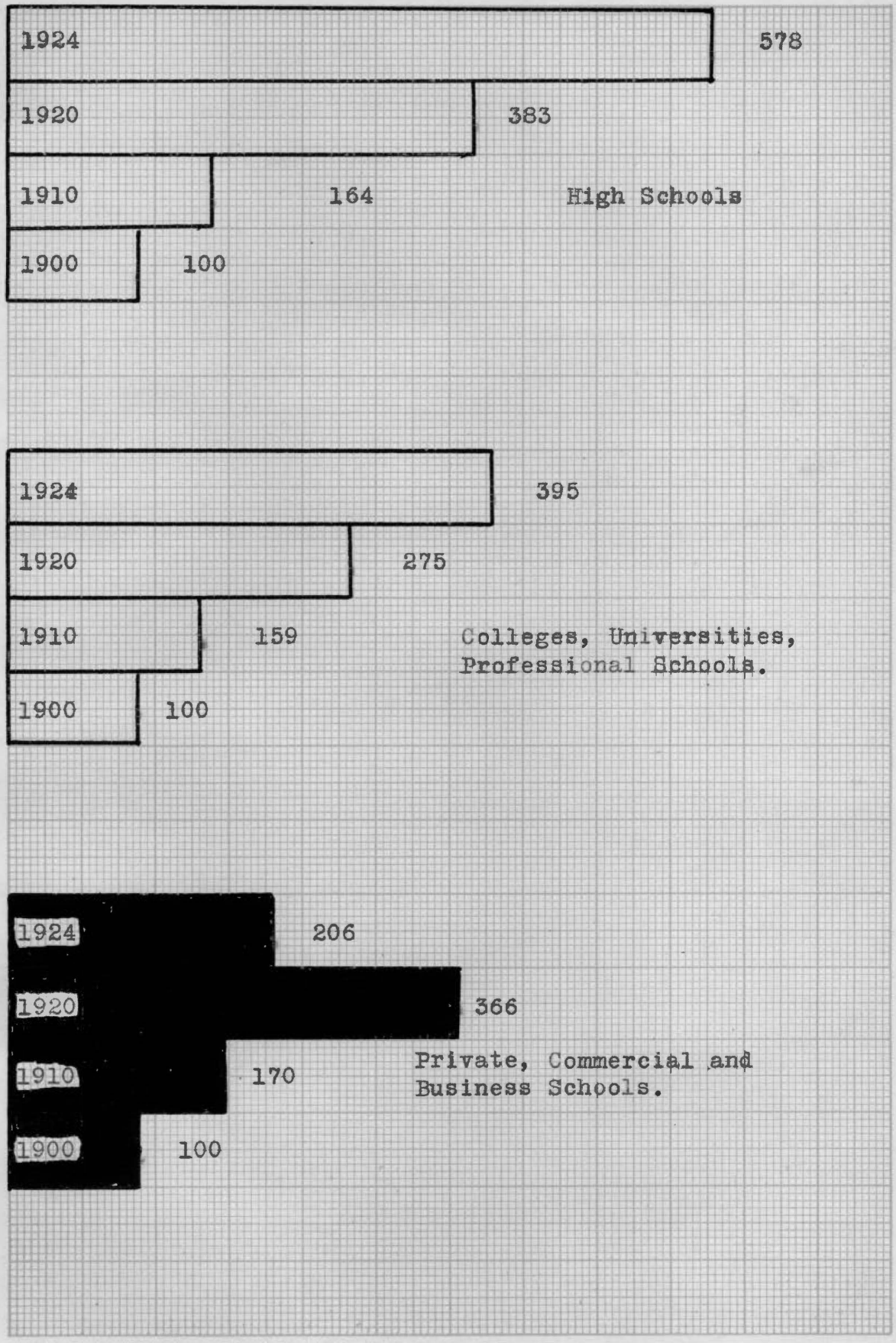
A - Average number of pupils enrolled per teacher.

B - Average salary of teachers.

C - Cost of instruction per pupil.

Table XII gives some ideas as to the relative cost of instruction in the different types of schools. This indicates that [illegible] the difference is so small that it would not amount to so much. As the cost of high school instruction is increasing the cost of vocational instruction seems to be decreasing. Figures for several years will have to be compiled before any just conclusions can be drawn.

Diagram VIII. Comparative Data. Trend of Enrollment. 104
Year 1900 = Index Number 100.



Published by The H. Cole Co., Columbus, Ohio, No. 290 G.

From Manufacturing Record, May 10, 1928.

Table XIII. Comparative data: Enrollment of pupils in public high schools by courses of study. 1924.

Number of schools reporting	Academic courses		
	Boys	Girls	Total
14,783	1,113,831	1,204,532	2,318,363
	Commerce courses		
	Boys	Girls	Total
3,742	143,991	286,984	430,975
	Manual training or technical		
	Boys	Girls	Total
2,089	148,736	6,431	155,167
	Teacher training courses		
	Boys	Girls	Total
1,435	4,571	29,567	34,138
	Agricultural courses		
	Boys	Girls	Total
2,604	48,139	8,330	56,469
	Home Economics courses		
	Boys	Girls	Total
3,860	288	159,850	160,138
	Industrial or trade training		
	Boys	Girls	Total
434	32,709	9,289	41,998
	Military Drill		
	Boys	Girls	Total
300	55,964	---------	55,964

From United States Bureau of Education, Bulletin, 1925 No. 40. Read table thus: 14,783 public schools were offering academic courses, 3,742 were offering commercial courses. Note the large number enrolled in the academic courses and the comparatively few in the vocational courses. The question arises, is the large number taking the academic course because it is best suited to their needs or because no better or no other course is offered?

Diagram VIII shows graphically the continuous increase in enrollment in public high schools and colleges, while there is a noted slump in the enrollment in the private school enrollment. The public schools are now offering courses that formerly

were offered by the private schools only, is one reason for change.

CHAPTER IV

THE PROPOSED PLAN FOR VOCATIONAL EDUCATION IN THE SOUTH CHARLESTON HIGH SCHOOL

(A) General Conclusions

Is our system of education democratic? As voiced by national legislation and the seven cardinal principles, our ideals are democratic, but in actual practice we have not as yet achieved the goal. We train in our public schools only a small percentage of the population for their vocations. See Table II. To an increasing extent, public schools are incorporating in their curricula, courses that are purely vocational. National legislation is in favor of vocational education but does not make it compulsory.

Generally, the findings of this study indicate that vocational education in agriculture, home economics, commerce, and in the industrial trades in some forms, is permanently beyond the experimental stage. It remains, however, for a great number of our educational administrators to find that out. School administrators will have to be educated to the extent that they will see fit to incorporate in the curriculum of their schools the form of vocational education that will best fit the needs of their community.

Furthermore it will have to be remembered that in a country that is continually progressing educationally,

industrially, and economically, a scheme of education fitting well the needs of the community it serves today, will not meet the needs of the same community in the years to come. This is much more true of vocational education than of any other form of education.

Specifically: 1. Vocational agricultural education is vital to the life of the rural community. See diagram II showing graphically the increase in enrollment in Federally aided agricultural courses. Table V gives the expenditure of money for vocational agricultural education. Further evidence of the value of vocational agriculture to the community is given on page 80 . In the appendix is found the general plan by which schools may organize courses in vocational agriculture in order to secure State and Federal aid. (Note: Only the plan for vocational agriculture is given in this paper, on account of space, but the plan is typical, more or less, for any form of Federally aided vocational education.

2. Home economics education is a functioning form of education and it is vital to the progress of the American home. Table VII indicates that 60 per cent of the schools (1926) were offering home economics educational courses. Also there seems to be a need for more trained teachers for this kind of work. That the enrollment in these courses is not limited to girls, but some boys may profit to a great extent by taking some of the work. See Table VII. The courses offered under the state plan as approved by the Federal Board are definitely outlined as to content

and aims. School system and state requirements furnish the outlines for the courses given that are not Federally aided.

3. That commercial education occupies very important place in the high school curriculum of today is attested by Table IX; enrollment in commercial courses in public high schools (1924) was 430,975. Diagram VII shows graphically the trend of enrollment in commercial courses since 1914. It is to be noticed that since the public high schools began to offer commercial courses to any great extent, the percentage increase in enrollment in private schools has slumped considerably. The schools have recognized that the public needs this form of education and are incorporating it into the curriculum. Still there are thousands of dollars spent annually by the taxpayers that support the public schools, for instruction in the private schools of business, that they might as well have in the publicly financed institutions.

4. Vocational industrial education has not developed to a point comparable with the other three types of vocational education. See Table XI. The courses of industrial arts, manual training, or manual arts that are now offered in the secondary schools are not designed for the development of skills or for "disciplinary training" as formerly but for their educational values. When such is the case they cannot be classed as strictly vocational. These courses may be of a preparatory nature and have some values as such. As mentioned elsewhere in this paper, the lack of universally

accepted terminology for the industrial subjects causes much confusion. For the schools to equip shops suitable to train workers for all the industrial trades at present is but a dream because of finance. They might offer preparatory courses, and in cooperation with industry, train the youth for the job before the youth completely severs his connection with the school.

B. Situation in South Charleston

1. Background, Social, Economic and Educational.

(a) Location, Population, Industries. South Charleston is located on the south side of Kanawha River opposite the city of Charleston. It is in Kanawha County and in the midst of an area rich in coal, oil, and natural gas. The United States Government has located a naval ordinance and armor plate plant in the town of South Charleston (closed at the present).

The population according to the latest estimate is 6,000. Few small towns have as many variations in industry and occupations as there is to be found in South Charleston. One reason for this is that many people who live in South Charleston work in the city of Charleston.

The leading industry in the town is the manufacture of chemicals, chlorine, barium oxide, prestone, oxygen, carbon dioxide, pyrofax, and many others. The workers in these plants are highly specialized and there is not much hope that a school could be of much help to them vocationally.

There is a great number of small shops and stores

that require quite a few sales people and clerks. The "ten cent" stores in the city employ a great number of girls who drop out of school before they have finished.

The building trades depend upon the apprenticeship method of training new workers.

The country around the town is rather rugged and only suitable for truck gardening, poultry raising and dairying.

(b) School Administration and Population: The South Charleston High School is in one of the county districts (Loudon). There is a district supervisor, Board of Education, a county superintendent, and the town has a superintendent of schools. In the town schools, any changes in the curriculum or methods have to be sanctioned by the above nsmed list of administrators. The business of administration being carried to the limit it is often difficult to make any desired changes in the school system.

In the town of South Charleston there are two grade schools with a total enrollment of about 800, and one six year high school with an enrollment of 375. There comes to the high school not only the graduates of the two grade schools in the town but the graduates of three regular eight grade district schools. The graduates of these district schools would be the only group that would be interested in vocational agriculture.

(c) Present School Offering: The South Charleston High School is now offering the following vocational or manual

arts courses. Manual training (mainly wood-working) required of all seventh and eighth grade pupils, elective in the ninth grade. Home economics (food and clothing) required of all seventh and eighth grade pupils, elective for the ninth and tenth grade pupils. Business practice in the ninth and tenth grade, elective. First and second year typing, first and second year short-hand, and first year book-keeping, all elective. No agriculture, home mechanics or general shop work is offered.

(d) Present needs: Observations made during the past two years show that only a small percentage of those that complete the eighth grade ever enroll in the senior year of the high school. The school has not been offering anything that would benefit them directly. Of those that finish the eighth grade in the schools outside the town, a large percentage enroll in the ninth grade but many drop out before completing the year. For the school year 1927-28 there were enrolled in September 88 in the ninth grade, at the beginning of the second semester only 58 were in school. The majority of the drop-outs came from the outlying district where they had finished the eighth grade.

It is the purpose of the plan herein submitted to remedy this, to some extent, by offering a course in vocational agriculture.

At the beginning of the school year 1927-1928 the commercial courses mentioned above were offered for the first time. The result was, there were fewer drop-outs of the class of girls that aspire to be stenographers.

Eight girls that had quit school the year before to take business courses or to go to work returned to get the benefit of the new offering. The majority of the girls who have dropped out get jobs as sales clerks or telephone girls.

In the plan proposed there is to be offered a course in retail selling for the benefit of those that leave the school for jobs, in the various stores, as clerks.

The manual training course is not functioning properly because there are very few of the ninth grade pupils who elect the course. There needs to be an enrichening of the course in the seventh and eighth grades as well as the ninth. The offering should be changed from mere wood-working in the seventh and eighth grades to a course in general shop practice. The general shop work to consist of elementary wood-work, elementary sheet-metal work, elementary electrical work, and elementary auto repairing. In this way a variety of experiences would come to the youth instead of the few experiences that were gained by wood-work alone. This variety of experiences would give the youth more of a chance to choose, wisely, his life's vocation should he be industrially inclined, otherwise it would benefit him in a general way by acquiring new terms of every day usage.

There is needed a more vital course in the ninth grade to take the place of the present course in wood-work. It is proposed that this course be household mechanics.

For the more advanced pupils who might aspire to any of the building trades there should be a course offered

consisting of blue print reading, sketching, estimating from prints, and house design.

As the industries and trades of the town are so diversified it is not advisable for a town of this size to equip a shop for any of the industrial trades. The enrollment in any course of trades and industries would be too small to warrant offering.

The following list gives the occupational aspirations of the eleventh and twelfth grade pupils of 1927-1928.[1]

Stenographers	12	Professional	9
Bricklayers	2	Carpenters	2
Book-keepers	2	Printers	1
Plumbers	1	Auto mechanics	2
Electricians	2	Undecided	5
		Total	38

The previous drop-outs might have made some difference in the above tabulation had there been offered a course that would have kept them in school longer. At present the number would not justify any course in trades or industries.

The course in home economics needs to be extended to include home management and child care for the eleventh and twelfth as indicated in the proposed plan.

2. Proposed Plans.

(a) That a course in vocational agriculture be offered in the high school to benefit those that come to the school

1. Data secured by advance enrollment cards.

from the outlying district. The nature of the course to be determined by the occupational interests of those electing the course. Probably the course should consist of projects in gardening, poultry raising, and dairying. The class room teaching to be supplemented with supervised projects at the homes of the various members of the class. Generally the plan to be followed is that laid down by the Federal Board.

The classes in vocational agriculture would be small because of the small number of pupils coming from the outlying districts, probably one class would be sufficient for the first year.

The teacher would have to be employed for ten months if he is to have any time for supervised project work, twelve months would be better. The teacher would have to teach other regular school subjects, in order to fill out his day. Most all vocational agricultural teachers could qualify as teachers of science or chemistry, this would make the arrangement of class work very simple.

Also there is a possibility that an itinerant teacher might be employed. He could spend part of the day at the high school and the rest of the day in one of the district schools, that is situated on good road about six miles from the high school, in a predominately gardening, poultry raising and dairying community. In one of these district schools he might teach elementary agriculture to the seventh and eighth grades. In that way the pupils might become more interested in the vocational agricultural course offered in the high school and continue their

education with profitable returns.

The cost of offering such a course would be small, a very few books and some bulletins would have to be added to the present high school library. For shop work, the class could make use of one portion or all of the manual training shop for the time required for the work. There is a probability that a teacher could be secured that could teach the manual training work along with the vocational agriculture. The present shop equipment would suffice for the course in agriculture.

The result of such a change would directly benefit the pupils that come to the high school from the outlying district schools. Last year 1927-1928, twelve boys that came to the high school from the district schools, dropped out before completing the ninth grade. These would have the chance for vocational training along with others that might enroll if the school offered such a course. The taxpayers of the entire district help support the high school and they are of the opinion that the town schools get the best of the bargain. By offering a course in agriculture, these taxpayers would see more of direct benefit to them as class.

(b) The Proposed Plan for Home Economics. It is proposed that another teacher be employed so that home economics may be offered above the ninth grade. Such a course to comply with the state requirements as nearly as possible, giving instruction in child care, home management, budgeting, foods, and clothing.

This change would necessitate some additional equipment in the domestic science department, including four or five sewing machines, one extra household unit as described in the state course of study, and equipment for the child care department. Entire extra equipment needed not to exceed $600.00. Library facilities are sufficient with little exception.

The result of this change would directly benefit those that leave the school, before or after graduation, for domestic life, also the work can be of college preparatory nature for those who wish to specialize in home economics.

Advance enrollment cards tabulated in May 1928 indicate that about forty girls in the tenth, eleventh and twelfth grade desire such training.

(c) Plan for Commercial Training. (Note): The greater part of this plan submitted in 1927 has been approved by the school authorities and partially put into practice during the school year 1927-1928.

The plan called for a two-year course in typing, a two year course in short-hand, a one-year course in book-keeping, and a one-year course in business practice. During the school year 1927-1928 the first course in typing, shorthand, book-keeping, and business practice was offered.

The number completing the first course in typing was two classes of nineteen each, a total of thirty-eight. It is the plan to add nineteen more typewriters to the present equipment so that the entire first year group may be in one class for the coming year. Also the machines will take care

of the twenty-eight new pupils that want typing, as shown by advance enrollment cards. There will be two short-hand classes for the coming year.

The business practice course offered to the ninth and tenth grade pupils, is designed primarily for those who are quitting school and consists of business arithmetic, sales methods, book-keeping, and typing. In the future it is planned to devote the most of the time of this course to business arithmetic, sales methods and retail selling, to provide for the large number of girls who find employment in the "ten-cent" stores, or places requiring similar business training. It is the policy of this plan to aid in securing employment for as many of these girls as possible during the holidays and on Saturdays. Some have already been employed in this way.

(d) Plan for Manual Arts Course: As mentioned before in this paper, the manual arts course as now offered to the seventh, eighth, and ninth grades is mostly wood-work. It is a required subject of the seventh and eighth grade boys, but is elective in the ninth grade.

It is proposed to alter the offering of the seventh and eighth grade so as to provide exploratory courses for these pupils, attempting to give them a variety of experiences that they may more wisely choose their life's vocation, at the same time making them more familiar with the common tools of industry and industrial terms. In addition to wood-working and elementary mechanical drawing now given, it is proposed that the course include some sheet-metal

work, electrical work, minor auto repairs and some painting. Two or three projects in each kind of work would constitute the entire course.

For an elective in the ninth and tenth grade (combining the two grades for the course), it is proposed to offer a course in home mechanics. This course to include all kinds of work to be done around the ordinary home, that the "handy man" would be called upon to do. Furniture repair, plumbing repairs, general house repairs, such as screening doors, reglazing windows, and the remedy for sagging doors, and some auto repairing.

The object of the proposed course is:

1. To develop the "handy man" abilities,
2. To assist in the choice of industrial products and service,
3. To appreciate production and productive work,
4. To relieve the family of many bills for minor repairs.

For equipment necessary to carry out the proposed plan it is insisted that no elaborate equipment or machinery be used, only such tools and materials that might be found in the average home of the community. A course so designed will be vital to every prospective householder.

Below are listed some suggested topics for a course in household mechanics as found in the report of the summer course on household mechanics conducted at the Fitchburg Normal School, Massachusetts, 1924

1. Building materials. Names of - and how to order - the materials commonly used in building.
2. Building construction. A study of the various parts of the building, terminology.
3. Repairs around the house. Doors,windows, shelves, gutters, steps, awnings, etc.
4. Sharpening tools, knives, grass blades, chisels, axes.
5. Soldering. The principles and practice in the use of a soldering iron.
6. Glazing. How to mix putty and practice in its use.
7. Nails and Screws. A study in the correct use of nails, screws and the right sizes to use.
8. Paints and varnishes. How to mix and use paint. How to remove old varnish and refinish a piece of furniture.
9. Hinges and locks. A study of the different kinds and how to set them.
10. Furniture repair. With glue, screws, angle irons, etc.
11. Water supply. Types of valves and faucets and their upkeep.
12. Sewage. Study of flush tanks and traps, their repair and adjustment.
13. Electric appliances. Study of the upkeep of door bells, toasters, irons, fans, house wiring, fuses and motors.

14. Auto. The upkeep of the auto, greasing, washing, punctures, spark plugs, etc.

Many boys will bring things home to be repaired. This should be encouraged. The teacher, in follow-up visits, will often see an opportunity for making his shop of service to the home and can encourage the boy to repair or refinish some piece of furniture at the school. Such projects well done will make for a friendly attitude between the parent and the school. Such courses will be looked upon with favor by the parents.

It is proposed that a course in industrial arts be offered for the advanced pupils of the high school. Said course to consist of blue-print reading, estimating from prints, a study of building terms and house design. The course is designed primarily for those that are going into any of the building trades, namely; carpenters, plumbers, bricklayers, electricians, plasterers, tile and marble setters, and any others that might be interested in any part of the building trades. Knowing that it is from the plans or blue-prints that the tradesmen have to get their specifications and measurements it is very important that they be able to intelligently interpret such plans, before they can become the most efficient workers. This proposed course is applicable to all the building trades.

The course would be called "The Plan Reading and Estimating Course for the Building Trades".

For a text book it is proposed to use "Wiley

Trade Series", J.C. Wright, Editor, Wiley and Son, New York. The text book work to be supplemented with studies of actual working drawings, the preparation of cost estimates from the plans, and making of detailed plans.

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APPENDIX

Conditions under which the state will aid a county or community in paying the salary of a teacher of vocational agriculture: (For Tennessee especially)

(1) The county board of education must agree to employ a teacher for a period of twelve months.

(2) This teacher must be approved by the State Supervisor of Vocational Agriculture before he is employed.

(3) The county board must pay the full salary of the teacher each month out of its own funds.

(4) The county board must set aside a separate room in the school for this work, and equip it with tables, shelves, cabinets, etc., at its own expense.

(5) The county board must agree to provide as much as $325 out of its own funds for equipment and library the first year the work is started.

(6) The county board of education must agree that 90 consecutive minutes of instruction will be allowed for each class in agriculture.

(7) The county board must agree to provide an open period, when possible, immediately following each double period in agriculture for additional time needed for farm shop, and out door laboratory work.

(8) The county board must agree to provide a separate farm shop after the work has been established two years.

(9) The county board of education must give satisfactory evidence that it expects to continue this work over a period of

years.

(10) If the county board of education complies with the conditions set up in the contract, the State Board for Vocational Education will reimburse the county board to the extent of one half to five eighths of the salary of the teacher.

From, Department of Education, State of Tennessee, Division of Vocational Education, Bulletin 13.

Form of contract to secure State and Federal Aid in vocational agriculture.

STATE DEPARTMENT OF EDUCATION
DIVISION OF VOCATIONAL EDUCATION
NASHVILLE, TENNESSEE.

CONTRACT FOR STATE AND FEDERAL AID IN VOCATIONAL AGRICULTURE.

This agreement made and entered into at _____, Tennessee. This the ____ day of _____ 19 _____ between the State Board of Education, Division of Vocational Education and the _____ _____ County Board of Education.

COUNTY BOARD OF EDUCATION'S PART:

In order that the _____ County Board of Education may receive the benefits of State and Federal aid for the purpose of establishing or continuing a department of Vocational Agriculture in the _____ School, we hereby agree to the following conditions:

1. We agree not to employ, discharge, or increase the salary of any teacher of vocational agriculture without advising with the State Supervisor of Vocational Agriculture.

2. We agree to pay the entire salary of the teacher of Vocational Agriculture each month for a period of twelve months.

3. We agree to set aside a separate room equipped out of our funds, with tables, shelves, cabinets, etc.

4. We agree to spend $ ____ for salary of teacher.

   We agree to spend $ ____ fpr laboratory and shop equipment.

   We agree to spend $ ____ for equipment, library books, and magazines.

5. We agree to permit the teacher of Vocational Agriculture to spend all of his time in teaching Vocational Agriculture in the regular day school, in nearby rural schools, in part-time work with boys out of school, in evening instruction with farmers, and in community service.
   OR

6. We agree to permit the teacher of Vocational Agriculture to use not less than six periods in any school day for instruction in Vocational Agriculture.

   NOTE: Strike either five or six, 5 or 6.

7. We agree not to expect State and Federal Aid for any work that is done by the teacher of Vocational Agriculture that is not agriculture.

8. We agree that two consecutive forty-five minute periods be allowed for instruction in agriculture with an open period immediately following for the use of additional time needed for field work, outdoor laboratory work, and farm shop work.

9. We agree to budget as much as $1,000.00 per year out of our funds as the county's part of the salary, equipment and maintenance of the Department of Vocational Agriculture.

10. We have carefully read this contract; we fully understand its provisions; and we agree to abide by it for the fiscal year ending June 30, 19 _____.

_____
Chairman, Board of Education

_____
County Superintendent

_____
Superintendent or Principal
of School.

THE STATE BOARD OF EDUCATION, DIVISION OF VOCATIONAL EDUCATION AGREES THAT:

1. If the _____ County Board of Education complies with all the provisions of this contract, the State Board of Education, Division of Vocational Education, will make regular reimbursements to _____ County Board of Education through the county trustee on Oct. 1st, Jan. 1st, April 1st, and July 1st of each year.

2. The State will pay five-eighths of the salary of the teacher, provided not more than two periods out of an eight period school day and not more than one period out of a seven period school day is used by the teacher of Vocational Agriculture for teaching subjects that are not agriculture. Provided further, that the total amount sent to any one school in any one year does not exceed $1,500.00.

_____
State Supervisor of Agriculture.

TENNESSEE STATE BOARD FOR VOCATIONAL EDUCATION
NASHVILLE

TEACHER'S CONTRACT

This agreement made and entered into at _____, Tennessee, this the ____ day of _____ 19___, between the school board in the County of _____ and _____; a qualified teacher of Vocational Agriculture, who has been duly elected.

For and in consideration of the sum of _____ dollars paid to me for the fiscal year ending June 30, 19 __, I accept the position of teacher of Vocational Agriculture in _____ School.

AGREEMENT:

The Teacher of Vocational Agriculture agrees:

1. To submit promptly to the State Supervisor all reports when they are due,

2. To submit copies of any reports to the County Superintendent when he calls for them,

3. Should he become delinquent two months with any reports his salary may be withheld until all reports are submitted,

4. To attend one sectional conference during the year at his own expense,

5. Should he wilfully disregard the regulations of the County Board of Education or its representative, the County Superintendent, he is subject to discharge by the County Board of Education,

6. To own and operate an automobile for the purpose of doing necessary field work.

The County Board of Education Agrees:

1. To give the teacher of Vocational Agriculture an opportunity of doing part-time, day unit and evening work.

2. To give the teacher of Vocational Agriculture two weeks vacation other than the regular holidays.

3. To allow time away from school for conferences called by the State Supervisor of Vocational Agriculture.

4. To allow two weeks for professional improvement each year. If this is taken only once in three years, to allow six weeks, provided said teacher has been in the same position for three years.

5. That the contract of the teacher of Vocational Agriculture shall begin on the ____ day of _____ 19 ___.

One copy of this contract must be signed by the teacher and returned to the Secretary of the Board of Education, and one copy must be sent to the State Supervisor of Vocational Agriculture on or before September 1, 19 __, otherwise this contract becomes void and the above named election invalidated.

WITNESS OUR HANDS on the day and year first above written.
IN THE COUNTY OF _____
IN THE STATE OF _____

_____
Teacher

_____
Chairman

Secretary

(c) It is recognized that, in some places, schools will be in the process of developing such educational programs. In these cases the following principles should apply: Extension workers should confine their work with children to those whom the school does not enroll in systematic vocational or prevocational project work, including supervised home practice, unless requested or authorized by school authorities to enroll them. The school should organize its work with adults to provide systematic vocational instruction as defined herein. The school should offer its facilities to the junior extension worker wherever the school has not in reasonable operation, vocational or prevocational project work accompanied by supervised home practice.

5. Before undertaking junior extension work in any county, the extension division should submit in writing to the county superintendent of schools the plans proposed for junior extension work in that county, and should endeavor to arrange for a basis of understanding and cooperation. Copies of plans, when agreed upon, should be filed with the State department of education for consideration before being put into operation.
6. The State department of education should look to the land-grant college to furnish technical subject matter in agriculture in the form of outlines, leaflets, and bulletins for use in the public schools. It is understood, however, that no such material in agriculture should be used in the schools until approved by the State department of education.

Text of The Smith-Hughes Act.

trade and industrial and home economics subjects there is hereby appropriated for the use of the States for the fiscal year ending June thirtieth, nineteen hundred and eighteen, the sum of $500,000; for the fiscal year ending June thirtieth, nineteen hundred and nineteen, the sum of $700,000; for the fiscal year ending June thirtieth, nineteen hundred and twenty, the sum of $900,000; for the fiscal year ending June thirtieth, nineteen hundred and twenty-one, and annually thereafter, the sum of $1,000,000. Said sums shall be allotted to the States in the proportion which their population bears to the total population of the United States, not including outlying possessions, according to the last preceding United States census: *Provided*, That the allotment of funds to any State shall be not less than a minimum of $5,000 for any fiscal year prior to and including the fiscal year ending June thirtieth, nineteen hundred and nineteen, nor less than $10,000 for any fiscal year thereafter. And there is hereby appropriated the following sums, or so much thereof as may be needed, which shall be used for the purpose of providing the minimum allotment provided for in this section: For the fiscal year ending June thirtieth, nineteen hundred and eighteen, the sum of $46,000; for the fiscal year ending June thirtieth, nineteen hundred and nineteen, the sum of $32,000; for the fiscal year ending June thirtieth, nineteen hundred and twenty, the sum of $24,000; for the fiscal year ending June thirtieth, nineteen hundred and twenty-one, and annually thereafter, the sum of $90,000.

SEC. 5. That in order to secure the benefits of the appropriations provided for in sections two, three, and four of this act, any State shall, through the legislative authority thereof, accept the provisions of this act and designate or create a State board, consisting of not less than three members, and having all necessary power to cooperate, as herein provided, with the Federal Board for Vocational Education in the administration of the provisions of this act. The State board of education, or other board having charge of the administration of public education in the State, or any State board having charge of the administration of any kind of vocational education in the State may, if the State so elects, be designated as the State board, for the purposes of this act.

In any State the legislative of which does not meet in nineteen hundred and seventeen, if the governor of that State, so far as he is authorized to do so, shall accept the provisions of this act and designate or create a State board of not less than three members to act in cooperation with the Federal Board for Vocational Education, the Federal Board shall recognize such local board for the purposes of this act until the legislature of such State meets in due course and has been in session sixty days.

Any State may accept the benefits of any one or more of the respective funds herein appropriated, and it may defer the acceptance of the benefits of any one or more of such funds, and shall be required to meet only the conditions relative to the fund or funds the benefits of which it has accepted: *Provided*, That after June thirtieth, nineteen hundred and twenty, no State shall receive any appropriation for salaries of teachers, supervisors, or directors of agricultural subjects, until it shall have taken advantage of at least the minimum amount appropriated for the training of teachers, supervisors, or directors of agricultural subjects, as provided for in this act, and that after said date no State shall receive any appropriation for the salaries of teachers of trade, home economics, and industrial subjects until it shall have taken advantage of at least the minimum amount appropriated for the training of teachers of trade, home economics, and industrial subjects, as provided for in this act.

SEC. 6. That a Federal Board for Vocational Education is hereby created, to consist of the Secretary of Agriculture, the Secretary of Commerce, the Secretary of Labor, the United States Commissioner of Education, and three citizens

of the United States to be appointed by the President, by and with the advice and consent of the Senate. One of said three citizens shall be a representative of the manufacturing and commercial interests, one a representative of the agricultural interests, and one a representative of labor. The board shall elect annually one of its members as chairman. In the first instance, one of the citizen members shall be appointed for one year, one for two years, and one for three years, and thereafter for three years each. The members of the board other than the members of the Cabinet and the United States Commissioner of Education shall receive a salary of $5,000 per annum.

The board shall have power to cooperate with State boards in carrying out the provisions of this Act. It shall be the duty of the Federal Board for Vocational Education to make, or cause to have made studies, investigations, and reports, with particular reference to their use in aiding the States in the establishment of vocational schools and classes and in giving instruction in agriculture, trades and industries, commerce and commercial pursuits, and home economics. Such studies, investigations, and reports shall include agriculture and agricultural processes and requirements upon agricultural workers; trades, industries, and apprenticeships, trade and industrial requirements upon industrial workers, and classification of industrial processes and pursuits; commerce and commercial pursuits and requirements upon commercial workers; home management, domestic science, and the study of related facts and principles; and problems of administration of vocational schools and of courses of study and instruction in vocational subjects.

When the board deems it advisable such studies, investigations, and reports concerning agriculture, for the purposes of agricultural education, may be made in cooperation with or through the Department of Agriculture; such studies, investigations, and reports concerning trades and industries for the purposes of trade and industrial education, may be made in cooperation with or through the Department of Labor; such studies, investigations, and reports concerning commerce and commercial pursuits, for the purposes of commercial education, may be made in cooperation with or through the Department of Commerce; such studies, investigations, and reports concerning the administration of vocational schools, courses of study and instruction in vocational subjects, may be made in cooperation with or through the Bureau of Education.

The Commissioner of Education may make such recommendations to the board relative to the administration of this Act as he may from time to time deem advisable. It shall be the duty of the chairman of the board to carry out the rules, regulations, and decisions which the board may adopt. The Federal Board for Vocational Education shall have power to employ such assistants as may be necessary to carry out the provisions of this act.

SEC. 7. That there is hereby appropriated to the Federal Board for Vocational Education the sum of $200,000 annually, to be available from and after the passage of this Act, for the purpose of making or cooperating in making the studies, investigations, and reports provided for in section six of this Act, and for the purpose of paying the salaries of the officers, the assistants, and such office and other expenses as the board may deem necessary to the execution and administration of this Act.

SEC. 8. That in order to secure the benefits of the appropriation for any purpose specified in this Act, the State board shall prepare plans, showing the kinds of vocational education for which it is proposed that the appropriation shall be used; the kinds of schools and equipment; courses of study; methods of instruction; qualifications of teachers; and, in the case of agricultural subjects the qualifications of supervisors or directors; plans for the training of teachers; and, in the case of agricultural subjects, plans for the supervision of agricul-

tural education, as provided for in section ten. Such plans shall be submitted by the State board to the Federal Board for Vocational Education, and if the Federal Board finds the same to be in conformity with the provisions and purposes of this act, the same shall be approved. The State board shall make an annual report to the Federal Board for Vocational Education, on or before September first of each year, on the work done in the State and the receipts and expenditures of money under the provisions of this act.

SEC. 9. That the appropriation for the salaries of teachers, supervisors, or directors of agricultural subjects and of teachers of trade, home economics, and industrial subjects shall be devoted exclusively to the payment of salaries of such teachers, supervisors, or directors having the minimum qualifications set up for the State by the State board, with the approval of the Federal Board for Vocational Education. The cost of instruction supplementary to the instruction in agricultural and in trade, home economics, and industrial subjects provided for in this act, necessary to build a well-rounded course of training, shall be borne by the State and local communities, and no part of the cost thereof shall be borne out of the appropriations herein made. The moneys expended under the provisions of this act, in cooperation with the States, for the salaries of teachers, supervisors, or directors of agricultural subjects, or for the salaries of teachers of trade, home economics, and industrial subjects, shall be conditioned that for each dollar of Federal money expended for such salaries the State or local community, or both, shall expend an equal amount for such salaries; and that appropriations for the training of teachers of vocational subjects, as herein provided, shall be conditioned that such money be expended for maintenance of such training and that for each dollar of Federal money so expended for maintenance, the State or local community, or both, shall expend an equal amount for the maintenance of such training.

SEC. 10. That any State may use the appropriation for agricultural purposes, or any part thereof allotted to it, under the provisions of this act, for the salaries of teachers, supervisors, or directors of agricultural subjects, either for the salaries of teachers of such subjects in schools or classes or for the salaries of supervisors or directors of such subjects under a plan of supervision for the State to be set up by the State board, with the approval of the Federal Board for Vocational Education. That in order to receive the benefits of such appropriation for the salaries of teachers, supervisors, or directors of agricultural subjects the State board of any State shall provide in its plan for agricultural education that such education shall be that which is under public supervision or control; that the controlling purpose of such education shall be to fit for useful employment; that such education shall be of less than college grade and be designed to meet the needs of persons over fourteen years of age who have entered upon or who are preparing to enter upon the work of the farm or of the farm home; that the State or local community, or both, shall provide the necessary plant and equipment determined upon by the State board, with the approval of the Federal Board for Vocational Education, as the minimum requirement for such education in schools and classes in the State; that the amount expended for the maintenance of such education in any school or class receiving the benefit of such appropriation shall be not less annually than the amount fixed by the State board, with the approval of the Federal Board as the minimum for such schools or classes in the State; that such schools shall provide for directed or supervised practice in agriculture, either on a farm provided for by the school or other farm, for at least six months per year; that the teachers, supervisors, or directors of agricultural subjects shall have at least the minimum qualifications determined for the State by the State board, with the approval of the Federal Board for Vocational Education.

SEC. 11. That in order to receive the benefits of the appropriation for the salaries of teachers of trade, home economics, and industrial subjects the State board of any State shall provide in its plan for trade, home economics, and industrial education that such education shall be given in schools or classes under public supervision or control; that the controlling purpose of such education shall be to fit for useful employment; that such education shall be of less than college grade and shall be designed to meet the needs of persons over fourteen years of age who are preparing for a trade or industrial pursuit or who have entered upon the work of a trade or industrial pursuit; that the State or local community, or both, shall provide the necessary plant and equipment determined upon by the State board, with the approval of the Federal Board for Vocational Education, as the minimum requirement in such State for education for any given trade or industrial pursuit; that the total amount expended for the maintenance of such education in any school or class receiving the benefit of such appropriation shall be not less annually than the amount fixed by the State board, with the approval of the Federal Board, as the minimum for such schools or classes in the State; that such schools or classes giving instruction to persons who have not entered upon employment shall require that at least half of the time of such instruction be given to practical work on a useful or productive basis, such instruction to extend over not less than nine months per year and not less than thirty hours per week; that at least one-third of the sum appropriated to any State for the salaries of teachers of trade, home economics, and industrial subjects shall, if expended, be applied to part-time schools or classes for workers over fourteen years of age who have entered upon employment, and such subjects in a part-time school or class may mean any subject given to enlarge the civic or vocational intelligence of such workers over fourteen and less than eighteen years of age; that such part-time schools or classes shall provide for not less than one hundred and forty-four hours of classroom instruction per year; that evening industrial schools shall fix the age of sixteen years as a minimum entrance requirement and shall confine instruction to that which is supplemental to the daily employment; that the teachers of any trade or industrial subject in any State shall have at least the minimum qualifications for teachers of such subject determined upon for such State by the State board, with the approval of the Federal Board for Vocational Education: *Provided*, That for cities and towns of less than twenty-five thousand population, according to the last preceding United States census, the State board, with the approval of the Federal Board for Vocational Education, may modify the conditions as to the length of course and hours of instruction per week for schools and classes giving instruction to those who have not entered upon employment, in order to meet the particular needs of such cities and towns.

SEC. 12. That in order for any State to receive the benefits of the appropriation in this act for the training of teachers, supervisors, or directors of agricultural subjects, or of teachers of trade, industrial or home economics subjects, the State board of such State shall provide in its plan for such training that the same shall be carried out under the supervision of the State board; that such training shall be given in schools or classes under public supervision or control; that such training shall be given only to persons who have had adequate vocational experience or contact in the line of work for which they are preparing themselves as teachers, supervisors, or directors, or who are acquiring such experience or contact as a part of their training; and that the State board, with the approval of the Federal Board, shall establish minimum requirements for such experience or contact for teachers, supervisors, or directors of agricultural subjects and for teachers of trade, industrial, and home economics subjects; that not more than sixty per centum nor less than twenty per centum

of the money appropriated under this act for the training of teachers of vocational subjects to any State for any year shall be expended for any one of the following purposes: For the preparation of teachers, supervisors, or directors of agricultural subjects, or the preparation of teachers of trade and industrial subjects, or the preparation of teachers of home economics subjects.

SEC. 13. That in order to secure the benefits of the appropriations for the salaries of teachers, supervisors, or directors of agricultural subjects, or for the salaries of teachers of trade, home economics, and industrial subjects, or for the training of teachers as herein provided, any State shall, through the legislative authority thereof, appoint as custodian for said appropriations its State treasurer, who shall receive and provide for the proper custody and disbursements of all money paid to the State from said appropriations.

SEC. 14. That the Federal Board for Vocational Education shall annually ascertain whether the several States are using, or are prepared to use, the money received by them in accordance with the provisions of this act. On or before the first day of January of each year the Federal Board for Vocational Education shall certify to the Secretary of the Treasury each State which has accepted the provisions of this act and complied therewith, certifying the amounts which each State is entitled to receive under the provisions of this act. Upon such certification the Secretary of the Treasury shall pay quarterly to the custodian for vocational education of each State the moneys to which it is entitled under the provisions of this act. The moneys so received by the custodian for vocational education for any State shall be paid out on the requisition of the State board as reimbursement for expenditures already incurred to such schools as are approved by said State board and are entitled to receive such moneys under the provisions of this act.

SEC. 15. That whenever any portion of the fund annually allotted to any State has not been expended for the purpose provided for in this act, a sum equal to such portion shall be deducted by the Federal Board from the next succeeding annual allotment from such fund to such State.

SEC. 16. That the Federal Board for Vocational Education may withhold the allotment of moneys to any State whenever it shall be determined that such moneys are not being expended for the purposes and under the conditions of this act.

If any allotment is withheld from any State, the State board of such State may appeal to the Congress of the United States, and if the Congress shall not direct such sum to be paid, it shall be covered into the Treasury.

SEC. 17. That if any portion of the moneys received by the custodian for vocational education of any State under this act, for any given purpose named in this act, shall, by any action or contingency, be diminished or lost, it shall be replaced by such State, and until so replaced no subsequent appropriation for such education shall be paid to such State. No portion of any moneys appropriated under this act for the benefit of the States shall be applied, directly or indirectly, to the purchase, erection, preservation, or repair of any building or buildings or equipment, or for the purchase or rental of lands, or for the support of any religious or privately owned or conducted school or college.

SEC. 18. That the Federal Board for Vocational Education shall make an annual report to Congress, on or before December first, on the administration of this act, and shall include in such report the reports made by the State boards on the administration of this act by each State and the expenditure of the money allotted to each State.

Approved, February 23, 1917.

APPENDIX II

SUPPLEMENTARY ACT

SECTION 2

[PUBLIC, No. 64, SIXTY-FIFTH CONGRESS]

[H. R. 5949]

AN ACT Making appropriations to supply urgent deficiencies in appropriations for the fiscal year ending June thirtieth, nineteen hundred and eighteen, and prior fiscal years, on account of war expenses, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums are appropriated, out of any money in the Treasury not otherwise appropriated, to supply urgent deficiencies in appropriations for the fiscal year ending June thirtieth, nineteen hundred and eighteen, and prior fiscal years, on account of war expenses, and for other purposes, namely:

FEDERAL BOARD FOR VOCATIONAL EDUCATION

The appropriation provided by section seven of the act creating the Federal Board for Vocational Education, approved February twenty-third, nineteen hundred and seventeen, is also made available for printing and binding, law books, books of reference, and periodicals, and postage on foreign mail.

In any State the legislature of which met in nineteen hundred and seventeen and failed for any reason to accept the provisions of the vocational education act, as provided in section five of said act, if the governor of that State, so far as he is authorized to do so, shall accept the provisions of said act and designate or create a State board of not less than three members to act in cooperation with the Federal Board for Vocational Education and shall designate the State treasurer as custodian for all moneys allotted to that State under said act, the Federal Board shall, if such legislature took no adverse action on the acceptance of said act in nineteen hundred and seventeen, recognize such State board for the purposes of said act until the legislature of that State meets in regular session in due course and has been in session sixty days

Approved, October 6, 1917.

ACT EXTENDING THE BENEFITS OF THE VOCATIONAL EDUCATION ACT TO THE TERRITORY OF HAWAII

[PUBLIC, No. 35, SIXTY-EIGHTH CONGRESS]

[H. R. 4121]

AN ACT To extend the provisions of certain laws to the Territory of Hawaii

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That beginning with the fiscal year ending June 30, 1925,

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SEC. 4. The Territory of Hawaii shall be entitled to share in the benefits of the Act entitled "An Act to provide for the promotion of vocational education; to provide for cooperation with the States in the promotion of such education in agriculture and the trades and industries; to provide for cooperation with the States in the preparation of teachers of vocational subjects; and to appropriate money and regulate its expenditure," approved February 23, 1917, and any Act amendatory thereof or supplementary thereto, upon the same terms and conditions as any of the several States. There is authorized to be appropriated, out of any money in the Treasury not otherwise appropriated, for the fiscal year ending June 30, 1925, and annually thereafter, the sum of $30,000, to be available for allotment under such Act to the Territory.

SEC. 5. The Territory of Hawaii shall be entitled to share in the benefits of the Act entitled "An Act to provide for the promotion of vocational rehabilitation of persons disabled in industry or otherwise and their return to civil employment," approved June 2, 1920, and any Act amendatory thereof or supplementary thereto, upon the same terms and conditions as any of the several States. There is authorized to be appropriated, out of any money in the Treasury not otherwise appropriated, for the fiscal year ending June 30, 1925, and annually thereafter, the sum of $5,000, to be available for allotment under such Act to the Territory.

Approved, March 10, 1924.