

OBJECTIVES AND PROBLEMS OF VOCATIONAL EDUCATION

EDITED BY

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PREFACE

It was in 1906 that a small group of earnest, enthusiastic men, with a magnificence of vision of which they themselves were unaware, organized the National Society for the Promotion of Industrial Education. For eight years they labored—through bulletins, through annual conventions, through countless conferences—to bring before the American public the need for a program of vocational education which would be national in scope. In the ranks of the National Society, working shoulder to shoulder, were representatives of employers and of employees, of capital and of labor, of teachers, of social workers, and of legislators. Public education in this country owes to these pioneers a debt which can never be entirely wiped out.

The first victory in the program which the National Society had set itself came with the appointment by Congress, in January, 1914, of the Commission on National Aid to Vocational Education. That the personnel of the commission was wisely chosen and that it did its work well is evidenced by the fact that less than three years after the commission's report, the bill which it recommended was enacted substantially as it was originally presented. President Wilson signed the bill on Feb. 23, 1917, and the Smith-Hughes Act for Vocational Education became a law of the land.

Ten years have now passed, and we are entering upon the second decade of experience with this law, which some have called the most significant educational legislation ever adopted by any nation. It seems fitting that we scan anew the underlying purposes for which the law was passed, that we cast an appraising eye over the accomplishments of the first ten years, and from the vantage point of critical evaluation of what has been done project ourselves into the years that lie ahead.

Such is the purpose of this volume. The editor has felt that many minds were better than one in attempting to realize this objective, and the book has become a symposium, con-

tributed to by leaders of whose authority to speak concerning the fields they represent there can be no question. It is a source of gratification that enrolled in the list are men who have been part and parcel of the movement for vocational education from its inception. The editor pays his mead of praise to those who have kept the faith. Their reward lies in what has been accomplished and what the future promises.

EDWIN A. LEE.

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CHAPTER I

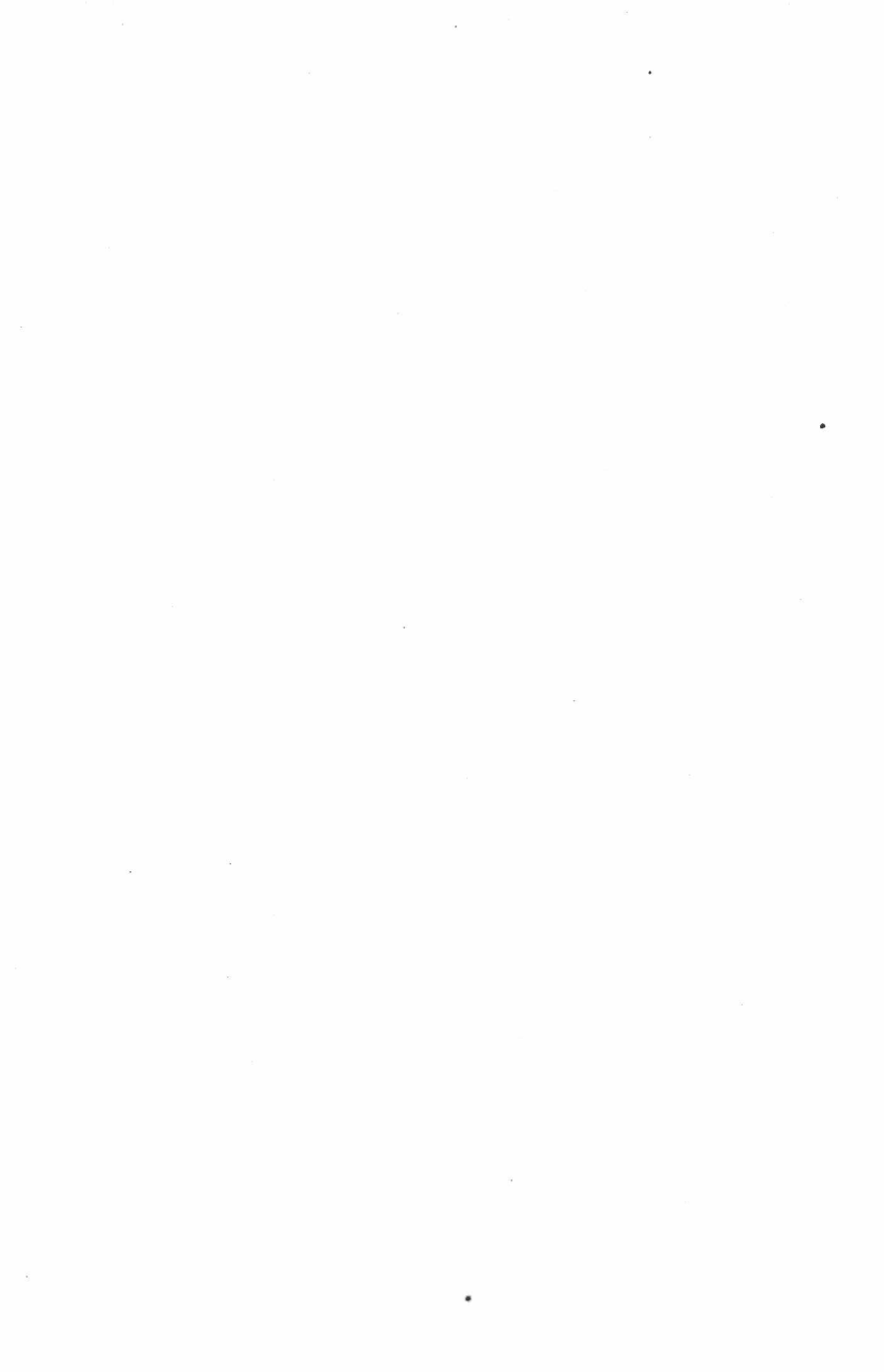
THE ANCESTRY OF VOCATIONAL EDUCATION

BY

CHARLES A. BENNETT

Editor of

INDUSTRIAL EDUCATION MAGAZINE



CHAPTER I

THE ANCESTRY OF VOCATIONAL EDUCATION

Whenever one seeks to discover the beginnings of vocational education, whether it be in the field of industrial education, art education, home economics education, or part-time education, he finds his most fruitful field of study in the history of apprenticeship. And, if he tries to trace the development of the factors that enter into present-day problems of vocational education, he must study the breaking down of the old-time apprenticeship system and the various efforts to provide substitutes for it. The vocational education of the present day is a modern substitute for an essential part of medieval apprenticeship—that part which can be taken over by the school. To a very large extent, present-day problems in vocational education arise because of the various interpretations of what part can advantageously be taken over by the school and what still belongs to the industry, the business, or the home.

The most important fact about the earliest form of apprenticeship is that the relationship between master and apprentice was that of father and son. Apprenticeship grew out of home relationships, and it retained those relationships more or less unchanged down to the time of the Industrial Revolution. The early Jewish law placed upon the father the duty of teaching a trade. The Talmud contains these sentences: "As it is your duty to teach your son the law, teach him a trade."¹ The usual custom was for the son to go to the school of the rabbis in the morning to learn the law and for him to remain with his father in the afternoon learning his father's handicraft. In this plan of education is seen the prototype of the present part-time school. Two other sentences from the Talmud reveal one of the basic motives for this practice among the Jews: "He who does not

¹ LEIPZIGER, HENRY M., "The Education of the Jews," p. 212, Monograph, Industrial Education Association, 1890.

have his son taught a trade prepares him to be a robber." "Disobedience to this ordinance exposes one to just contempt, for thereby the social conditions of all are endangered."¹ Clearly, the ancient Jews associated skill of hand and industriousness with good citizenship and the lack of these with social parasitism or something worse.

From the Babylonian code of about 2250 B.C.² one learns that it was more or less customary for an artisan to adopt a son and then teach him his handicraft.

In fact, the law required him to teach the handicraft, otherwise, the adopted son might legally return to his own father's house. Whether the motive of the artisan in adopting the son was to secure the economic benefits of the son's labor or, as Mays has recently pointed out to be the case under the Hindu law,³ to meet the religious requirement that certain funeral ceremonies be continued by a son, we know that the father-son relationship was carried over into the early practice in apprenticeship. The apprentice was to be treated essentially as a son would be treated in matters pertaining to food, clothing, shelter, moral and religious instruction, correction and punishment, and instruction for good citizenship as well as in matters pertaining to instruction in the processes, the arts, and the "mysteries" of the craft. To what extent the early laws and regulations concerning adoption and apprenticeship had been violated is not clear, but it is certain that, to avoid misunderstandings and trouble, indentures, stating the conditions of apprenticeship, were recommended by Xenophon before the Christian era and that as early as 18 B.C. indentures were employed in Egypt. "They relate to the trades of weaving, nail-making, flute-playing, short-hand writing, and hair-dressing."⁴

The first of these—the "keep"—was a substitute for the provision of physical needs that would naturally have been given to the apprentice if he had been living in his father's home.

¹ *Ibid.*, p. 212.

² HARPER, ROBERT FRANCIS, "The Code of Hammurabi, King of Babylon," p. 71, The University of Chicago Press.

³ MAYS, ARTHUR B., "Old Forms of Apprenticeship," *Industrial Education Magazine*, September, 1927.

⁴ *Ibid.*

The second—moral, religious, and civic training—came through the master and his family, through the church which he attended, and through his contact with the town authorities and the community celebrations of various kinds that were common in those days.

The third—general education—varied much, depending upon the knowledge of the master and his interest in teaching his apprentice. Usually, it included reading and writing and sometimes ciphering. In some cases, especially where the apprenticeship extended over a long period—from nine to twelve years—the apprentice would be sent to school for a year to learn “grammar” or a foreign tongue.

The fourth—the “mysteries”—consisting of the secrets, rules, recipes, the applications of science, mathematics, and art which were useful in the trade, were taught by the master from time to time as they were made use of in the work.

In England, it came to be customary to have each indenture enrolled by the town clerk and to require each apprentice to take an oath that he would obey the laws. This was a good lesson in citizenship. Moreover, it emphasized the fact that, not being old or skilled enough to be a member of a guild, he was under the supervision of the town authorities. The town would protect him against any gross mistreatment from his master and protect his master against any gross misdemeanors on the part of the apprentice. The town authorities would enforce the ordinances concerning his apprenticeship and see that he lived up to his contract. The indenture usually called for an apprenticeship covering seven years.

It is readily seen, therefore, that the medieval apprenticeship which grew out of a father-son relationship provided:

1. “Keep,” that is, food, clothing, shelter, and parental care.
2. Moral, religious, and civic training.
3. General education according to the customs of the time.
4. The “mysteries,” that is, the technology of the trade.
5. Practical knowledge and skill in all the processes of the trade or craft.

The fifth—the practical knowledge and skill—covered all processes in all branches of the trade, not merely a section of it.

The method of learning was chiefly through imitation of the master.

Apprenticeship, then, in medieval times was not merely a scheme of trade and technical training; it was also an educational institution, giving the boy of that time all the fundamental or general education he would ever get. It was the chief educational institution for the middle-class youth. Up to the nineteenth century, the great majority of the people, even in the most progressive nations, received very little, if any, schooling. As a matter of fact, apprenticeship was sometimes valued more because of its general educational and disciplinary value—its moral and religious instruction, its teaching to read and write and cipher, and its practical certainty of leading to a position of respectability—than for its technical and trade training. This was especially true in the estimate of mothers and guardians.

The English Poor Law of 1601 made it lawful for church wardens and overseers to apprentice pauper children. The purpose in this case was not so much to secure for these children a trade as it was to see that they were provided with food and clothing and a home under a responsible guardian. Such children were usually bound out until they were twenty-one years of age.

In the New England colonies, when masters were not capable of teaching their apprentices to read and write, they were required to send them to schools. For this reason, elementary schools appeared very early in Massachusetts. In 1647, the General Court ordered that every town of fifty householders should appoint one within their number as a school teacher. He was to be paid by the parents and masters or "by the inhabitants in general."¹ Under this law, many towns established free schools.²

It should be kept in mind that medieval apprenticeship at its best existed under an individual-craftsman system of production; each master workman had his own shop or working place and, to assist him, one or two or a very few apprentices and sometimes a journeyman or two. It was always production

¹ SEYBOLT, ROBERT FRANCIS, "Apprenticeship and Apprenticeship Education in Colonial New England and New York," p. 42, Teachers College, Columbia University, New York, 1917.

² *Ibid.*, p. 44.

on a small scale. The master knew the whole of the trade, and he taught the whole of it to his apprentices. Often his shop was in his home, and his home was also the place where his products were sold direct to the consumer. As soon as production on a large scale began by grouping many workers in one room, the master could not give the same personal attention to his apprentices; he could not teach them effectively. Instead of continuing to be a master craftsman, he gradually became merely an employer, and the apprentices were managed by the journeymen—five to ten apprentices to a journeyman. And as the division of labor became more common, the apprentices were kept busy on the work that they could do best or that was most profitable to the employer, and little or no thought was given to their instruction. The father-son relationship had given way to the employer-employee relationship. The apprentices became mere “hands” working for an employer at apprentice wages.

It is common to think of the factory system of production as having originated with the invention of power machinery, but there is evidence that as early as the fourth century B.C., the idea of division of labor and quantity production had taken root in Greece. Xenophon, in referring to the manufacture of shoes, says that in the large cities where many shoes of the same kind were needed, one man might get a living by doing nothing but stitching, another by cutting them out or by cutting out upper leathers only, while another would merely put the pieces together. This system of production is said to have resulted in a large increase in the number of slaves.¹

Quantity production by division of labor or specialization in work, or what is known as the “factory system,” received a tremendous impetus when, through the inventions of Kay, Hargraves, Arkwright, and Compton, power machinery became a commercial success in making cloth, and textile manufacturing on a large scale began in England. Textile factories sprang up where there was adequate waterpower.

Instead of working in their homes under their own masters, the makers of cloth were now obliged to work in mills “under

¹ ANDERSON, L. F., “Some Facts Regarding Vocational Training among the Ancient Greeks and Romans,” Vol. XX, p. 193, *School Rev.*, Chicago.

masters who made them work for what wages they chose to give, and during what hours they chose to dictate."¹ Competition between manufacturers became keen. The demand for cheap labor was so great that children as young as eight years of age were brought into the factories and allowed to work twelve and even thirteen hours a day. Indeed, the demand for child labor was so great that the pauper children of the workhouses in the large cities were bargained for by the owners of factories and delivered in droves, the workhouse authorities being glad to get rid of them. These children were often housed in sheds or in the factories and given the poorest kinds of food, and the beds in which they slept were no sooner vacated by a day shift than the night shift took possession of them. The children were entirely at the mercy of those who regarded them solely as implements of labor.² And this form of slavery was legal under the Poor Law of 1601. The children could be thus "apprenticed" until they were twenty-one years of age, if they lived that length of time. Many of them did not; the death rate was appalling. In 1796, the Manchester Board of Health, while investigating the spread of contagious diseases, pointed out some of the monstrous evils of the system. The heart of Britain was touched. Agitation against the inhuman treatment began. Sir Robert Peel, a manufacturer, championed the cause of the children in Parliament. Through his influence, the first Factory Act was passed, in 1802. This limited the hours of labor to twelve between 6 a.m. and 9 p.m. It required that instruction in the three R's should be given to apprentices and included certain sanitary regulations and a system of inspection. This law, which required the factory owners to live more nearly up to the requirements of the old apprenticeship system, very naturally turned these owners against the system. They wanted child labor without the apprentice restrictions.

Meanwhile, James Watt had invented the steam engine, and with this available, the factory owners began to leave the isolated water power sites and move their mills to centers where

¹ HADDER, EDWIN, "The Life and Work of the Seventh Earl of Shaftesbury," p. 76, Cassell & Company, 1888.

² JONES, LLOYD, "The Life, Times and Labors of Robert Owen," p. 37, Swan, Sonenschein & Co., London, 1890.

they could secure child labor without indentures and, consequently, without being required to feed, clothe, and provide schooling for the children. In 1814, the apprenticeship law was abolished. Then conditions became about as bad as they had been before the first Factory Act was passed. Sir Robert Peel again came to the relief of the children, and in 1819 an act was passed by Parliament which provided that "no child under nine years of age should be allowed to work in a cotton factory, and no young person under sixteen to work more than twelve hours a day exclusive of meals."¹

In 1825, through the efforts of Sir John Hobhouse, the age limit was increased from sixteen to eighteen, and the number of hours reduced to sixty-nine. In 1830, a comprehensive movement to better conditions began under the leadership of Lord Ashley (later the Earl of Shaftesbury) who made the fight for the ten-hour law. Southy, the poet, said of the conditions in the factories, "I do not believe that anything more inhuman than the system has ever disgraced human nature in any age or country."² Charles Dickens, after visiting the cotton mills of Manchester, wrote, "What I have seen has disgusted and astonished me beyond all measure. I mean to strike the heaviest blow in my power for these unfortunate creatures."³

Lord Ashley failed to get the ten-hour law, but the effort forced the Government to pass a new Factory Act in 1833 "which in respect to education was immensely in advance of all provision for the working class at the time,"⁴ and it established "the principle that labor and education should be combined."⁵

Under this statute children between nine and thirteen might only be employed if they had a voucher of having attended school two hours on six days in each preceding week. The Inspector might require the employer to make a deduction of one penny in the shilling from a child's

¹ HADDER, EDWIN, *The Life and Work of the Seventh Earl of Shaftesbury*, p. 78.

² *Ibid.*, p. 85.

³ *Ibid.*, p. 120.

⁴ BALFOUR, GRAHAM, "The Educational Systems of Great Britain and Ireland," p. 47, The Clarendon Press, Oxford, 1903.

⁵ HADDER, EDWIN, "The Life and Work of the Seventh Earl of Shaftesbury," p. 89.

wages, and pay the same for the schooling of the child according to his direction.¹

This law was not satisfactory. It did not insure good schools for the children and did not wholly divorce the employer from educational responsibility. In 1844, a new act was passed permitting the employment of children for half-time at eight instead of nine years of age, but the hours of labor were reduced. "The parent or person having direct benefit from the wages of the child employed on alternate days was forced to cause the child to attend school for at least five hours between eight in the morning and six in the evening on the weekday preceding each day of employment. Children employed otherwise than on alternate days were to attend school for three hours in each working day of the week during any part of which they were employed, or two and a half hours on winter afternoons."² This new law accomplished two important things: It definitely placed the responsibility for the general education of working children upon their parents or guardians instead of upon the employer, as had been the case under the old apprenticeship law. It inaugurated the half-time schools for factory workers which, until 1870, were, in large measure, England's substitute for an adequate compulsory-education law.

While this substitute for the general education of the old-time apprenticeship was taking place in England, an important movement among workmen and their friends was striving to provide a substitute for the "mysteries" of the apprenticeship system. This movement found its most popular expression in the mechanics' institute movement. Fabian Ware gives the following account of its origin:

The pioneer in this movement was Dr. George Birkbeck . . . While engaged as professor of Natural and Experimental Philosophy at the Andersonian Institution in Glasgow, Birkbeck was obliged to employ ordinary workmen to make his scientific apparatus, for there were no specialists in this branch of work in the town. On one occasion he employed a tinman to construct a model of a centrifugal pump. It was

¹ BALFOUR, GRAHAM, "The Educational Systems of Great Britain and Ireland," p. 47.

² *Ibid.*, p. 48.

in the cellar which was the tinman's workshop that, surrounded by the workmen who were making the pump, he was struck with their ignorance as to its uses, and at the same time with their desire to obtain enlightenment. It was here that he first conceived the idea of giving a course of gratuitous lectures for the scientific instruction of the working classes. In the programme for this course which he drew up shortly after, he announced his intention of establishing classes "solely for persons engaged in the practical exercise of the mechanical arts, men whose education early in life had precluded even the possibility of acquiring the smallest portion of scientific knowledge." And he added that "greater satisfaction in the execution of machinery must be experienced when the uses to which it may be applied, and the principles upon which it operates, are well understood, than when the manual part alone is known, the artist remaining entirely ignorant of everything besides."¹

Dr. Birkbeck's lectures became immediately popular. Seventy-five persons attended the first lecture; two hundred, the second; three hundred, the third; and five hundred, the fourth. This was in the year 1800. In 1804, Dr. Birkbeck moved to London where, in 1824, he was instrumental in establishing the London Mechanics' Institution. Its object was "the instruction of the members in the principles of the Arts they practice and in the various branches of science and useful knowledge."² The institution included a reference library, circulating library, reading room, and a museum of machines, models, minerals, and so forth, and provided lectures on a great variety of scientific and practical subjects and classes for teaching, especially mathematical subjects and their applications. The membership rose to its highest point in 1826 when there were 1,477 members. Similar institutions were opened in all the larger centers of Britain and in such American cities as New York, Boston, Philadelphia, Baltimore, and Cincinnati. By 1841 there were 216 such institutions in Great Britain with a membership of more than 25,000. After a few years, the membership grew smaller, because many of the men whom they were intended to help most were unable to profit by the lectures. They had received too little fundamental education to be able to compre-

¹ WARE, FABIAN, "Educational Foundations of Trade and Industry," p. 16, D. Appleton & Company, 1901.

² Rules and Orders of the London Mechanics' Institution, p. 5, London, 1823.

hend the lectures unless given in the simplest possible way. Demonstrations and illustrated lectures, therefore, became the most popular.

While the mechanics' institutes did not accomplish all that was hoped for them, they did render a real service in stimulating an interest in acquiring knowledge—especially of the natural sciences and their applications in industry—in pointing out the need of public elementary schools, and in laying the foundations for many of the present technical schools and colleges. To give proof of the value of the mechanics' institute movement in America, one hardly needs do more than name the Franklin Institute in Philadelphia, the Mechanics' Institute in Cincinnati, the General Society of Mechanics and Tradesmen in New York City, and similar institutions in other cities. These have rendered a great service, especially in the direction of providing a modern substitute for the “mysteries” of the old apprenticeship.

In order to find the best examples of early efforts to substitute school instruction for the apprenticeship method of teaching the trade processes, it is necessary to cross the English Channel to France. For several centuries, entrance to the handicrafts in France, as well as in England and other European countries, had been regulated largely by the guilds. In France, the guilds, controlled by a few well-to-do masters, held a monopoly of trade privileges. It became extremely difficult and expensive to gain admission to apprenticeship. For these reasons, toward the end of the eighteenth century, the guilds were very unpopular. The result was that, when the Revolution came, one of the early acts of the Constituent Assembly was definitely to abolish the guilds. Under this act, every person was at liberty to work at any trade or craft he desired, provided he could obtain a license and would conform to certain regulations. Thus, the regulation of apprenticeship was suddenly transferred from the guilds to the government. It was only natural that this action should result in damage to apprenticeship and a lowering of the standard of workmanship. Early efforts were made to remedy these defects by further legislation, but the advent of power machinery and the factory system of production made them ineffective. So, to train her craftsmen, France began to look in another direction.