

**REPORT OF THE COMMISSION ON
INDUSTRIAL EDUCATION SUBMITTED TO
THE SENATE AND GENERAL ASSEMBLY
OF THE STATE OF NEW JERSEY IN
ACCORDANCE WITH JOINT RESOLUTION
NO. 11, APPROVED APRIL 14, 1908**

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Report of the Commission on Industrial Education Submitted to the Senate and General Assembly of the State of New Jersey in Accordance with Joint Resolution No. 11, Approved april14, 1908 by Various

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REPORT.

To the Senate and General Assembly of the State of New Jersey:

The Commission on Industrial Education begs leave to submit the following report:

A Joint Resolution of the Senate and General Assembly of the State of New Jersey, approved April 14, 1908, provided for the appointment, by the Governor, of a Commission on Industrial Education. The resolution read as follows:

BE IT RESOLVED by the Senate and General Assembly of the State of New Jersey:

1. The Governor is hereby authorized to appoint a commission of five persons, citizens of New Jersey, to inquire into and report to the next Legislature upon the subject of promoting industrial and technical education; the commissioners to be appointed by virtue of this act shall serve without compensation, but shall be repaid their expenses actually incurred in and about the performance of their duties, and may employ a secretary and all necessary and clerical and other assistance; provided, however, the total expense of said commission shall not exceed three thousand dollars.

2. The Commission shall investigate the needs for education in the different grades of skill and responsibility in the various industries of the commonwealth. They shall investigate how far the needs are met by existing institutions and what new forms of educational effort shall be advisable, and shall make such investigations as may be practicable through printed reports as to similar educational work done by other States, by the United States Government and by foreign governments.

3. All expenses of the Commission as herein provided for shall be paid out of moneys specially provided therefor.

4. This resolution shall take effect immediately.

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Governor John Franklin Fort appointed the members of the Commission on May 26, 1908, naming June 2 as the date for organization.

REQUIREMENTS OF THE JOINT RESOLUTION.

From the terms of the resolution under which the Commission was constituted it was evident that what was desired was (1) a thorough investigation of the needs of the industries in respect to industrial or technical training; (2) a statement of the extent to which those needs are met by existing institutions; and (3) as the result of a searching examination of conditions in this State and elsewhere, some definite suggestions for the promotion of industrial education in such manner as might best serve the interests of the commonwealth and its citizenship.

ASCERTAIN NEEDS AND DEMANDS.

The Commission early realized the necessity of going directly to those engaged in the industries for information. The recommendations in its report have grown out of the demands of the State, as made known by those occupied in the various industries—this information being supplemented by the facts as to what is accomplished in existing educational institutions, at home and abroad.

EXTENT OF INDUSTRIAL INQUIRY.

Inquiries designed to bring out both the needs and practical suggestions looking toward the improvement of conditions, were addressed by the Commission to employers and workers everywhere in the State. This correspondence was supplemented by interviews with the representatives of a large number of firms, located in every section of the commonwealth. Replies were received from over 2,000 firms engaged in manufacturing, building, or other productive industries in the State, and employing upwards of 250,000 workers, male and female. The results of

this inquiry doubtless form the most comprehensive collection that has ever been made of authoritative statements as to industrial conditions and needs in New Jersey.

RESULTS OF INDUSTRIAL INVESTIGATION.

The results of the investigations indicate clearly: (1) As the direct outcome of modern industrial conditions—factory organization, the introduction of machinery, and “piece-work”—the apprenticeship system has been virtually abandoned as a means of instructing the young in the various trades. (2) There is a lack of skilled and efficient workmen, and this will be largely increased unless a better means of vocational training is found. (3) Although the compulsory attendance period in the public schools has been extended gradually in New Jersey (as elsewhere in the United States), the schools have not been able to offer vocational training. Fully ninety-five per cent. of the pupils leave school between the ages of fourteen and seventeen, and without having formed any idea as to what trade or vocation they should follow; in consequence, they drift into occupations, rather than select those which might be most nearly suited to their aptitudes, and their progress is generally arrested at an early age, because of the restricted character of their experience, and the failure to receive supplementary instruction. (4) The trades have become so specialized that there is but little chance for a learner to go beyond the narrow limits of the work to which he is assigned, unless he has supplementary training. (5) The workers, mechanics, or craftsmen in the several trades are deeply sensible of their lack of opportunities for vocational training during the early years, and grown men among them would gladly take advantage of industrial schools, if these institutions were established. (6) Although business conditions are such that the employers, in most instances, have neither the time nor the inclination to conduct vocational schools within the factories, they would gladly welcome any suitable means of providing the workers with the instruction which the latter require. (7) There is an urgent demand for facilities for industrial education to supplement the training of the shops.

DESCRIBE LOCAL NEEDS.

The returns indicate the foregoing, and much more. They furnish an extensive fund of information as to local conditions throughout the State. They show, in detail, the educational problems of the industries, and point strongly to the need of a system of industrial schools adapted to local requirements. There is not space in this report to include the detailed returns, but a few illustrations of the needs will suffice. Workers in the building trades are numerous in every locality. The need of these is greatest for industrial education, and the opportunity the least. Comparatively few can read or understand a drawing, and as for expressing their ideas on paper by means of sketches, it is generally out of the question. In the important machine industries, a knowledge of workshop mathematics, or applied mechanics, ability to follow working drawings, and to make a suitable sketch, as well as familiarity with the practices of the trade, are matters in which many are found wanting. Industrial drawing, industrial mathematics and industrial English are required by the workers in any industry, whereas in special lines, industrial chemistry, industrial art, or other particular courses are demanded.

INDUSTRIAL EDUCATION DEMANDED.

There is a remarkable unanimity of opinion on important points in the replies to the Commission's queries, and this agreement is shared by the workers as well as the employers. Almost unanimous is the demand for more industrial schools, and the expansion of those now established in the State. Quite unanimous, likewise, is the opinion that manual training, as taught in the public schools at present, is a valuable preparation for the industrial-vocational schooling which should follow, but does not fulfill the requirements of the present movement for industrial education. Manual training is not vocational in its aim. It does not prepare for a specific vocation, or trade. Its purpose is purely cultural, and it is of value to all alike, whether a trade or a profession is entered upon.

INDUSTRIAL IMPROVEMENT SCHOOLS DESIRED.

Evening industrial improvement schools, under boards chosen largely because of the connection with the industries, are the quite unanimous choice of the non-agricultural industries of this State. Short courses for farmers, given at numerous convenient centres in the State, represent the form of practical vocational instruction chiefly desired by the agricultural industry. The industrial improvement schools would afford the workers from each industry the theoretical instruction necessary to that particular industry, but the shop attachment would be restricted, if not omitted altogether. The practical experience would be gained in the daily employment. However, those not employed would not be debarred from attendance. For an industrial improvement school, neither an expensive building nor costly equipment is necessary. In its simplest form, a room, some drawing utensils, vocational text-books, a skilled instructor and the students, are the chief requisites. The importance of this kind of school may be measured not only by the demand from this State, but by the fact that throughout the civilized world the evening (or partial time day) industrial improvement school enrolls twenty pupils to every one who attends the other types of industrial vocational schools.

TRADE SCHOOLS UNDESIRABLE AT PRESENT.

Although the majority of industrialists in New Jersey look with favor upon trade schools—meaning, thereby, those schools for specific industrial training in which the shop work predominates—the consensus of opinion shows a well-defined opposition to their introduction on the grounds (1) that they are too expensive a form of education for the present; and (2) even if trade schools were provided, at great expense for equipment and maintenance, it would be difficult to reach any large number of individuals through them. The average person leaves school early in life to go to work, and the necessity of earning his daily bread prevents him from attending a day trade school. He

might be induced to remain in the public schools by the offer of vocational instruction during the high school period, but it is questionable if at that early age he would have formed an idea of the vocation he should follow. The schools are fully occupied in giving the necessary general training up to the time when the majority leave school. Nowhere in the world, for instance, can a system of schools be found where vocational instruction is given, throughout the State, to pupils under the age of fourteen.

OBJECTION TO PARTIAL-TIME DAY INDUSTRIAL SCHOOLS.

The New Jersey investigation shows that the agency of the State having in charge the industrial schools will await the cooperation of the manufacturer before attempting to introduce partial-time day schools, that is, schools which would take pupils from among those at work, and give them industrial instruction in one or two half-day sessions during the week. Although the partial-time day school may become popular in the future, at present only a small percentage of the manufacturers of New Jersey favor this form of instruction, which, it is said, would tend to disorganize the factories and shops.

RUTGERS AND AGRICULTURE.

Having presented briefly, in the above, the needs and demands, as to training, of the industries of the State, it is now in order to review the provision for industrial education which already has been made in the commonwealth. Rutgers College, at New Brunswick, receives the quota for New Jersey of the Congressional grants for agricultural instruction, the total amounting to \$59,800 annually, at present. A department, known as the "U. S. Agricultural Experiment Station," is associated with the college. Rutgers is destined to be the chief centre for the maintenance of short courses in agriculture and horticulture. In this connection, the Commission invites attention to a paper on the needs of the agricultural industries of this State, prepared by Dr. Edward B. Voorhees, director of the U. S. Agri-