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THE COOPERATIVE SCHOOL

DEPARTMENT OF THE INTERIOR,
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THE COOPERATIVE SCHOOL.

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During the school year 1906-7, under the direction of Dean Herman Schneider, the college of engineering of the University of Cincinnati inaugurated what has since come to be widely known as the "cooperative system" of education. As applied to the work of the college of engineering, the plan provides, in brief, that the students in any class shall be divided into two groups, one group being in school while the other is at work in industrial plants. At the end of each period of two weeks the groups exchange places and thus alternate between school attendance and practical productive work. The student workers are arranged in pairs in order to secure continuity on the job in the place of employment.

The essential features of the plan seem to be:

1. A definite cooperative arrangement between the educational institution and one or more industrial plants, by which the theoretical instruction is given by the institution and the practical experience is given by the industries, and both are coordinated in a systematic and progressive educational program.
2. Willingness on the part of the industrial plant to make such adjustments in equipment, and processes, and methods as are necessary for promotion of the educational aims.
3. Willingness on the part of the educational institution to eliminate nonessentials and to base theoretical instruction on what actually happens, and sufficient skill in organization to secure "realization of theory through its practical applications."
4. Careful selection of employees, instructors, and student workers, who are capable of being inspired with a vision of the responsibilities as well as the possibilities of the plan.

5. Administration of the devices of alternating periods in such a way as to secure continuous and progressive action on the process or job in the factory, as well as in the work of the student and the instructor in the school.

An account of the plan as developed in the college of engineering of the University of Cincinnati may be found in "The Cooperative System of Education," by Prof. C. W. Park, published as Bulletin, 1916, No. 37, by the Bureau of Education.¹

THE COOPERATIVE PLAN IN SECONDARY SCHOOLS.

The cooperative plan has been successfully adapted to high school conditions in a number of cities. The first of these experiments to attract wide attention were those at Fitchburg, Mass., York, Pa., and Spartanburg, S. C. An account of the first of these may be found in "The Fitchburg Plan of Cooperative Industrial Education," by M. R. McCann, published by the Bureau of Education, Bulletin, 1913, No. 50.²

A report of the second is given in "The Cooperative Course of Study in the York High School," published, 1916, by the Board of Education, York, Pa. See also other references at the end of this circular.

THE COOPERATIVE PLAN IN NEWARK, N. J.

The College of Technology, 367 High Street, Newark, N. J., proposes to organize a cooperative industrial course, beginning in September, 1919. From a statement outlining the proposed plan, and the mission of the cooperative school, issued by the director, Dr. Daniel Russell Hodgdon, the following paragraphs are quoted:

The plan of the course is to bring into the engineering school, shopwork actually done, not merely studied. Actual contact with the industry is essential and the cooperative basis provides for it. It gives the student training in the industry, at the same time that he is getting theoretical training in the college.

The students are divided into two groups. One group is sent into the industry for two weeks, while the other group remains in the institution. At the end of this period the group that was in the industry returns to the school to take up the theory work, and to prepare for the next period of industrial activity. This system of alternating two weeks of industrial activity and college work is maintained throughout the course.

Only one or two men are placed in any industrial department or industry, in order to avoid any conditions which might arise to do the industry an injustice. The student performs such duties as will not only aid the industry, but provide him with knowledge necessary to make a working engineer. The plan

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² No longer available for free distribution; send 10 cents in coin or money order to the Superintendent of Documents, Government Printing Office, Washington, D. C.

works no hardship on industry, but, on the contrary, renders vital assistance now and in the future.

The cooperative plan provides that the student spend 22 weeks of his time each year in the industry and the rest of the time in the college. His work is so closely correlated with industrial activity that upon his return to the institution special lectures and laboratory work are provided to prepare him for the next two weeks in the industry. In other words, the electrical, chemical, and sanitary laboratories and other fields of activity are the laboratories of the college.

At the end of four years the student receives a degree of B. S. After spending two years in an industry having the special activity for which he fitted himself as a working engineer, the college will grant him an engineering degree. For this degree he must present a thesis showing that he has done some constructive work for the industry, and must also receive a recommendation from the heads of the industrial plant.

The course will continue throughout the year, since it is impossible to have long vacations. The habit-forming practice of shutting down such an educational institution for two or three months a year is antiquated and thoroughly unbusinesslike. It is apparent at once that any institution allied with the industries must be conducted on the same basis as the industries.

WORKING KNOWLEDGE OF INDUSTRIAL PROCESSES ESSENTIAL TO THE ENGINEER.

It was demonstrated over and over again during the great world-war that much of the so-called practical education was not effective in preparing the man for the emergency. Millions of dollars were wasted, thousands of workmen's precious hours were lost, spent uselessly, because of lack of knowledge and of cooperation between actual working conditions and engineering problems. Reports show that many times engineers have designed wonderful plans, only to learn later how easily the design might have been changed or modified to save time, energy, and money.

Engineers may be placed into two distinct classes: The office engineer and the working engineer. The crying need in industry to-day is for the real working engineer, for the man who not only knows how to put thoughts on paper, but who can translate those thoughts into the language of the mill, shop, or factory in terms of work, as well as to the executive in terms of investment and profit. The working engineer plans for the benefit of the producer, for better and quicker construction in the foundry, for an economy of the workman's time, for the reduction of operating expenses, and for utilizing the smallest space possible for practicability, because these practical processes are familiar to him.

COOPERATION BETWEEN THE ENGINEER AND THE WORKMAN.

Of late there has been some complaint that the engineer and the operative do not cooperate closely enough. This attitude is a result of the engineer's belief that his plans or his ideas are more or less absolute, and that it is the duty of the operative to follow them without question. The engineer may bring arguments to support his claim which the contractor may not be able to refute. The engineer simply takes the attitude that the contractor does not know so well as he.

Many an engineer has discovered too late that with a better knowledge of the constructor's point of view he would have modified his plans considerably.

Altogether too often does the engineer make the mistake of overlooking the fact that the operative who must make use of his plans has ideas born of practical experience, which, if crystallized, would greatly improve conditions. That the engineer has failed to make his work of the best grade is undoubtedly due to the lack of cooperation with the operative.

"The great lack of engineering education is failure to recognize the importance of values and cost in all engineering works," says Dr. Charles R. Mann. There is a rapidly growing feeling among industrial men that merely theoretical advisers to a board engaged in industrial projects are not needed by administrators as badly as men with business sense and practical engineering training who can aid and assist boards and directorates whenever and wherever engineering problems arise.

SPECIAL ADVANTAGES OF THIS PLAN IN SECONDARY SCHOOLS.

In considering the advantages of the cooperative plan in the high school it is necessary to recognize that the first appeal is made to boys and girls not now in school—to those who because of economic necessity or indifference have left school to go to work or to loaf. The number of these has been variously estimated by different authorities, but it can hardly be doubted that it is in excess of 75 per cent of all minors over 14 years of age. If any considerable number of these can be brought back into the schools it must be regarded as worth the effort.

In the next place, a strong appeal is made to many boys and girls who are in high school at the cost of much real sacrifice and self-denial. If some way could be found to meet a part of the cost, they can and will remain in school.

Again, some lessons can be learned only through practical experience in the ways of the world. Some of these include the proper relation between the material and the spiritual phases of life, the meaning and value of money, the meaning of work and wages and the relation between them, the importance of life motives. The learning of these lessons is of as much consequence to one individual as to another, irrespective of economic, intellectual, or social status. The cooperative plan is a contribution to the solution of some of the problems involved, and, hence, its advantages should be placed within the reach of all youth.

With these considerations in mind, the special advantages of the cooperative plan may be summarized as follows:

1. The safeguards thrown about the young people in their places of employment, through the supervision exercised by the school and the cooperation of employers, show an almost unbelievable improvement over the conditions hitherto characterizing the employment of minors in many places.

2. The cooperative plan makes it possible for some boys and girls to continue in school, because of wages earned on half time. Pro-

longing the period of active connection with the school, and of contact with sympathetic teachers and advisers, confers an incalculable benefit on growing boys and girls, and should lead to a permanent impetus to better things.

3. The plan would doubtless induce some to remain in school because the school work is thus made more interesting and the student can see a more direct relation between schooling and the promotion of his own interests.

4. The experiences involved promote a more earnest and thoughtful attitude toward work and the responsibilities of life.

5. The plan discourages idleness and unwholesome use of time, since the longer school day and year are fully occupied with interesting activities.

6. The opportunity to engage in gainful employment on half time, under suitable auspices, has a definite prevocational value, assisting young persons to discover their tastes and probable aptitudes.

7. The successful operation of a cooperative school or class affords a convincing demonstration that a reasonable amount of work, under proper conditions, can be made to contribute definitely to the development of youth, instead of being, as frequently heretofore, a demoralizing, disheartening, and stunting influence.

8. The plan gives the student, at the very least, a foothold in some industry or occupation so that he does not feel lost when the time comes to leave school and take up the responsibilities of self-support.

9. It should be emphasized that this plan does not neglect the need for general education, but insures to each individual an amount of cultural and liberalizing education sufficient to serve as a foundation for further study if he finds it possible to continue his education—he certainly gets more of the cultural side of education than he would if he had left school entirely to go to work.

ADOPTION OF PLAN URGED.

During the past few months the leaders of thought and action in the United States have been urging their fellow citizens to adopt such measures as may be necessary to enable the schools to rise to the demands of the war emergency and the subsequent reconstruction. Of these appeals, the following may be noted here:

It would be helpful in cities, and especially in industrial communities, if for boys and girls over 14 years of age in or out of school, certain definite courses could be introduced looking toward a cooperative half-time plan of school attendance and employment throughout the year.

Wherever school boards can find the means, the present emergency is an opportune time for readjusting the schools on an all-year-round basis, with a school year of 48 weeks, divided into four quarters of 12 weeks each. The schools would then be in continuous operation, but individual teachers and

pupils would have the option of taking one-quarter off at prearranged periods for needed change. ("Government Policies Involving the Schools in War Time." Bureau of Education, Teachers' Leaflet, No. 3, April, 1918.)

Wherever practicable, the cooperative shopwork plan (part-time division between schooling and employment) should be introduced under the direct supervision of the public-school authorities. ("Industrial Arts in Secondary Schools." Bureau of Education, Secondary School Circular, No. 4, September, 1918.)

The attendance in the high schools should be increased, and more boys and girls should be induced to remain until their course is completed. A school year of four terms of 12 weeks each is recommended for the high schools, as for the elementary schools. In the high schools adopting this plan arrangements should be made for half-time attendance, according to the Fitchburg, Cincinnati, and Spartanburg, S. C., plans, for as large a proportion of pupils as possible. ("Suggestions for the Conduct of Educational Institutions. etc." Bureau of Education, Circular, May 22, 1917.)

The program of the National Education Association Commission on the Emergency in Education contains a strong plea for a more general development of the continuation school, on a broader and more serviceable basis than has hitherto been characteristic of this institution in this country. While the report does not especially emphasize that type of continuation school referred to herein as the "cooperative school" or class, it is evidently included within the scope of the recommendations of the commission, as the following paragraph indicates:

The continuation school is not an experiment in this country. In many of our industrial communities it exists and has proved its usefulness. But it needs extension upon a much larger scale than has as yet been contemplated if it is to counteract the danger that threatens. It needs a broadening of its scope, as well. With us the continuation school has developed as a phase of the movement for vocational education. As it exists in this country to-day, it is essentially a vocational school, limited in its instruction to those subjects that are directly related to employment of the student. This is a narrow conception—far narrower than the conception of the continuation school that has been taking root in England and France. Without sacrificing in any essential way its service to industry, the scope of the continuation school should be broadened to include those elements of general and liberal education that are so fundamental to sound democratic citizenship. It should supply to the boys and girls who must leave school and go to work something of the insight, something of the broader outlook, something of the stimulus to mental growth that the full-time high schools and colleges provide. It should be not a thing apart, a cheap makeshift for the unfortunate, but rather a recognized and well-supported unit in democracy's public school system—a temporary unit, let us hope, serving a useful purpose until the day when democracy decrees that every boy and girl to the age at least of 18 years shall have the privilege of attendance upon a full-time school, the work of which is adapted both to his or her capacities as a learner and to his or her needs as a citizen. ("A National Program for Education." A statement issued by the Commission on the Emergency in Education and the Program for Readjustment; National Education Association, Washington, D. C., June, 1918, pp. 24, 25.)

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