are made by the workman or minder in charge of it, and adds weight to the arguments already adduced for giving technical instruction to persons of all grades employed in manufacturing industry. To these advantages of technical education, as affecting the workmen themselves as well as the progress of the industry in which they are engaged, must be added the general improvement in the character of the work produced, resulting from the superior and better-trained intelligence of those who have had the benefit of such instruction.

It will be seen from the foregoing that a complete system of technical education must make provision for the training of those who are to be occupied as journeymen or foremen in different branches of trade or industry, and also for those who aim at becoming managers or masters or heads of manufacturing firms, scientific advisers or professional engineers. As technical education necessarily implies specialized teaching, the curriculum and methods of instruction adopted in the elementary and secondary schools, where students receive their preliminary training, arc matters closely related to any scheme of technical instruction, and the trend of educational opinion is in favour of associating the gene­ral instruction given in those schools with the specialized teaching of the technical institutions. Indeed, it is daily becoming more difficult to draw any hard-and-fast line between professional and general education. It is now universally recognized that the foundations of technical instruction must be laid in the elementary and the secondary schools, and many of the changes which have been made in the organization of those schools had their origin in the requirements of technical institutions.

A short survey of the methods adopted in different countries to provide the specialized teaching applicable to different pursuits, and of its relation to the general school system of those countries, will serve as a fitting introduction to the con­sideration of the legislative and other changes which have gradually been made in the British school system with a view to modern industrial conditions. The study of foreign systems of education is serviceable, as showing the relation of such systems to the indus­trial needs of each country and to the genius and character of the people. In the organization of technical education in England, full advantage has been taken of foreign experience, although no attempt has been made to imitate too closely foreign methods. Detailed information as to what has been done abroad is found in the published reports of the several English commissions which have been appointed to inquire into the subject, and in the valuable series of special reports issued from the Board of Education. From these reports, which show how varied have been the attempts to adapt school training to modern industrial requirements, certain general principles may be inferred, which are equally applicable to the conditions under which the trade and commerce of different countries is now carried on.

These general principles may be briefly enunciated as follows:—

1. The education of all persons who may expect to be occupied in some form of productive industry may be con­sidered as consisting of two parts, (*a*) general, (*b*) special.

2. The general education is the preliminary training pro­vided in elementary and secondary schools, and the curriculum of those schools should be varied so as to have some reference to the future pursuits of the pupils.

3. The special or supplementary instruction should be adapted to the requirements of different grades and classes of workers, and to different trades or occupations as practised in different localities.

A complete system of technical education would afford facilities of training adapted to every kind and grade of in­dustry; but, owing to the complexity of the problem, such a system is nowhere to be found. In every country the scheme of education and method of instruction have varied from time to time, as the conditions regulating trade and industry have changed. But recently in all civilized countries, the effort has been made to provide a general and specialized education adapted to different pursuits for each of these great classes of workers: (1) operatives, (2) foremen and overseers, (3) masters and managers.

1. *Workmen.—*Many attempts have been made to provide a substitute for apprenticeship, but hitherto with no great success. Two classes of workpeople have to be considered—(1) those engaged in manufacturing industries, and (2) those engaged in handicraft industries. The education of all classes of workpeople begins in the public elementary schools; and, in view of the future occupation of the children, it may be taken for granted that primary instruction should be practical, and should include drawing and elementary science. It should indeed be closely associated with manual training, consisting of workshop exercises and field work in the case of boys in urban and rural schools respectively, and of instruction in the domestic arts in the case of girls. The lessons in drawing and in elementary science should form part of the manual training, and the school curriculum should be unified so that all the subjects of instruction should be grouped together as parts of an organized system. The desired diversity should be found in the different kinds and grades of manual work. Reading, writing and arithmetic would be taught incidentally in close connexion with the practical exercises. In nearly every country of Europe, and in the United States, the trend of education practice is in this direction. In France, Belgium, Holland and Sweden handicraft instruction is generally included in the curri­culum of elementary schools. Rudimentary science is also taught in nearly all the primary schools of Europe. Modelling is taught both to boys and girls in many Continental schools; and in Sweden “ sloyd ” (Sw. *stöjd,* manual dexterity, cf. Eng. “ sleight ”), a system of manual training, in which simple and useful articles, especially of wood, are constructed with the fewest possible tools, is taught with considerable success to children of both sexes.

In Germany and Switzerland, there exists an excellent system of evening continuation schools, known as *Fortbildungs-* or *Ergänz­ungs-Schulen,* in which the instruction of the children who leave school before fourteen, and of those who leave at that age, is con­tinued. In all these schools drawing is taught with special reference to local industries. In England great progress has been made in recent years in developing evening classes in which the pupils' elementary instruction is continued with a view to the specialized teaching provided in the technical school. The teaching in these continuation schools is generally varied according as the pupil is occupied in trade or office work, and the practice is becoming general of requiring him to pass a qualifying examination to secure admission to classes in technology. It will be seen, therefore, that the training of most workpeople, and of nearly all those who are engaged in manufacturing industry, consists of:—(1) primary teaching in elementary schools; (2) practice in the factory or shop, supplemented by further elementary teaching; (3) evening instruction in technology.

In all the principal towns throughout Europe evening classes have been established for teaching drawing, painting and designing, and the elements of science in their application to special industries. The instruction, however, is less practical than that provided in the corresponding schools in England. The classes abroad are mainly supported by the municipalities, by the chambers of com­merce, by industrial or trade societies, by county boards, and in some cases by the fees of the pupils. They receive little or no support from the state. They are well attended by workpeople of all grades, who are encouraged by their employers to profit by these oppor­tunities of instruction. In England evening technical instruction is more systematically organized than in any other country. It is under the general direction of the Board of Education, and of the City and Guilds of London Institute.

The Board of Education prescribe the conditions under which grants are paid to schools providing technical instruction. In former years these grants were paid on the results of the examination of individual students; but this method of apportioning state aid has been almost entirely abandoned. The Board still hold annual examinations in science and art and in cer­tain branches of applied science; but the more specialized examinations in technology and trade subjects are held annually by the City and Guilds of London Institute, through its department of technology. These latter examinations are utilized by the Board, and the certificates granted on the results are recognized in the appointment of teachers. The technical schools in which these classes are held are under the direct control of the local educa­tional authorities, and are largely supported by grants from local rates. Year by year a larger share of responsibility is being thrown upon the local authorities, with a view to encouraging greater variety of instruction and further adaptation of the teaching to local needs. The Board continue, however, to indicate the range of subjects to be taught in preparation for their annual examinations, and the City and Guilds of London Institute issues each year a programme containing suggested courses of training in nearly a hundred trade subjects.