

We must come to realise the fact that, unless we assign to eye and hand and ear their proper place in each subject, the path of progress is closed to us. This is quite obvious in regard to skill in the industries, technical or agricultural, and, on careful thought, in regard also to commercial or professional knowledge; hence the demand for technical education, which is a projecting, out of the realm of general education into that of special education, of the principles already enunciated.

It has been said that "manual training includes all processes that train the muscles and the mind to work in harmony." At the same time that the hand is being practised in movements of dexterity, there are stimulated in the mind the observation of form and the appreciation of beauty, which are the elements of artistic taste. The first step towards actually realising this would be the improvement of drawing in the schools, so that it might become truly a mode of expression rather than a mere slavish imitation of drawing-book copies. This, on the side of the arts, would give rise to original design; while the constructive instinct would concentrate the ideas of measurement, the perception of the relations of form, and of the properties of matter, into creative effort.

One of the healthiest effects of manual training, and a sufficient justification for its inclusion in a scheme of general education, is that it trains the judgment to deal with practical life; it thus fosters the constructive instinct, and counteracts the tendency of a too exclusively bookish school system towards sedentary occupations and town-life; while, by opening out new avenues for the natural activities, it enables the teacher or the parent to discover more easily the natural bent of a boy or girl. The same ideas that prompt manual training will lead to making concrete teaching the basis of all mathematical instruction; to the greater use of open-air teaching in geography and the natural sciences in preference to the use of books; to work in physical and chemical sciences that is experimental and based on individual effort; to teaching in history that does not separate it from the political and social life of the present; possibly also to methods of language-teaching in which emphasis is laid not on the dry bones of grammar, but on the actual use of a language for speaking, reading, and writing. Fallacies die hard; were it not so, it would never be contended that these new methods give an intellectual training inferior to that given by the old bookish methods. On the contrary, we have lost the full value even of books, because they deal so much with what are to us abstractions; if the things they treat of were actually known to us, how many books would live that now are nothing but *words*! Slavery to formal examination tests has perhaps been one of the greatest obstacles to progress, and should accordingly be guarded against in the future.

In short, in order that the introduction of manual training into our primary and secondary schools may have its full beneficial effect, this training should be an organic part of the education of the schools; and, that being so, it should be given within the school-hours, and as far as possible by the ordinary teacher, who should be trained for that purpose. Unless co-ordinated naturally with the other "subjects," and therefore inevitably influencing the methods generally throughout the school, manual instruction must more or less fail. Technical education, which is specialisation in the direction of a trade after a certain stage in intellectual development has been reached,—probably even technical education will partially fail if altogether dissociated from a continued advance in general education, although the want of that has very little influence on mere manual dexterity.

The larger and more comprehensive measures referred to above should therefore include provision for manual instruction in primary and secondary schools; for domestic instruction; for the better teaching of drawing and science; for technical education in special classes, industrial, mechanical, or agricultural in character; for continuation classes; for workshops and art schools; for commercial education; for technology in university colleges; for the training of teachers; with further provision for scholarships, and for the proper direction and inspection of the whole system. Moreover, the plea for manual training and technical instruction, and, in general, for the greater use of concrete