

in manual work any mysterious transformations of personality due to the connected training of body and mind, movements and thought. And for the very good reason that all such talk would be rhetoric, not science. What happens to the person who performs intelligently an act of manual skill is a simple matter summed up in the words harmless occupation, technical skill, knowledge of material, movements and tools, general ideas and ideals, habits, powers, and interests. Nothing more wonderful happens to him than when he speaks or writes or reads or plays. Comprehension of the effects of hand work upon the worker has been hindered by the failure to see that in their general nature and influence, movements of the hands in the manual training class work were nowise different from movements of the eyes, throat, muscles and legs, from movements of the hands in writing, or playing the piano, or juggling. The physical and mental processes involved in a piece of hand work are in their general constitution precisely similar to those involved in reading, writing or arithmetic. In all cases there is control of movements by feelings, and acquisition of feeling through the movements. In all, movements occur as expressions of the person's mind and as agents which provide new experiences for it. No generally different sort of result will come from one that doesn't from another. The differences will be in the particular skill, particular knowledge, particular habits, etc. In the olden time it was fashionable to adore those forms of life where the body was little

in evidence. Now we are zealous to have as obvious bodily expressions as we can. But the bodily expression was and is always present, the mind never worked apart from it. We require no separate and new psychology for manual training.

So much for the reaction upon the mind of the hand work process taken by itself alone. It is, however, generally a process that is engaged in making something which shall express some knowledge or feeling gained elsewhere. The boy does not draw lines or nail nails; he draws a canoe or nails together a house. The act of thus constructing a presentation of some idea or feeling tends to clarify the idea, make it permanent and vigorous, and to show in high light any obvious inadequacies or errors in it. But we must not forget that children can know things without being able to draw or model them and they can often draw or model them excellently and know little about them. We must not forget that many a pupil can learn far more of an object in an hour spent over other people's drawings than by drawing for an hour himself. Drawing, modelling, etc., as a means of expression of the ideas and feelings acquired in other courses are not panaceas, but specific drugs, to be used only under certain conditions. They are excellent servants but very bad masters.

Let no one think that this entire analysis of ours implies anything in the least derogatory to hand work. If we find that, after all, the process is in line with all of mental life, has no mysterious private