

THE INTELLECTUAL PHASE of MANUAL TRAINING.

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Today we find instruction in manual training in some form or other introduced into the schools of most of our progressive cities. It has not come like many educational fads which are of a short duration, but has established its value in developing the powers of observation, in calling for the use of judgment in much the same manner as that of the teaching of the sciences.

Arguments have been advanced in favor of manual training from three standpoints - namely that of the pedagogue, the sociologist and the utilitarian. The utilitarian and sociological benefits of education in manual training were the earliest reasons advanced in favor of such instruction but it remained for the pedagogue to advance the strongest arguments for such education, arguments that will hold good for all time.

Let us glance briefly at the sociological and utilitarian standpoints before taking up that of the pedagogue.

From the sociological standpoints the new education has been looked upon with favor. The sociologist has discovered that it promotes the growth of the child both individually and in a social way. "The girl who has learned the theory and practice of cooking and who can make her own garments will be a more sympathetic and tolerant woman because of such knowledge and skill." The boy who studies the classics "has as much need, physiologically and psychologically, of this training as has the boy who must earn his own living, and society

is equally concerned with both cases. The laboring man has found that it breaks down caste prejudice. It arouses a proper appreciation of the important place of the productive laborer in the world's work. This results in a better recognition of the rights and needs of the productive laborer in the way of sufficient compensation and leisure to allow him to be a good citizen and to educate his children to become such.

"Fitting the child to be a definite, efficient force in society is the end of education by the state." As at present constituted the schools are directed almost wholly towards a literary outcome. We need to make education more real, in doing this we shall not make it less noble and refining, but we shall give to the children a wider vision and a brave heart, and we shall send them forth into the world better able to deal with the realities of life and to discharge its duties fitly and successfully.

The arguments from the utilitarian standpoint appeal strongly to a great proportion of our people and they have been very effective in helping the cause of manual training. Among educators there is a tendency to cast aside as unworthy of consideration those claims for manual training based upon utilitarian considerations. Yet these very considerations have been most effective in securing the support of business men. If a system of education is valuable not only from pedagogical and sociological points of view, but is also instrumental in increasing national wealth and prosperity, these last considerations should neither be overlooked nor despised on account of "traditional professional contempt for money getting." It must be understood that greater material prosperity brings with it more widespread and better education for the rich as well as the poor.

From the pedagogical standpoint it has been found that manual training is so attractive to the pupils that the tendency to drop out of the course has been decidedly checked by its introduction. In one instance the attendance of a high school doubled within a few years after the introduction of manual training. We all know how difficult it is to keep boys and girls in school at a certain age. The enthusiasm of discovery which belongs to infancy and has carried him through the previous years is gone. The period of adolescence comes on with its new hopes and ambitions making over the nature of the child, and finds little to satisfy itself in the ordinary school exercises, hence it is a period of truancy and bad associations, when the boy is a puzzle and we wonder if he will ever come out right.

Acquisition is not so active a mental trait at this stage as a little earlier in life. Creation is becoming dominant. The boy is intensely practical, his ideals must take a definite, clear, tangible form. At this age the box of tools at home, the manual training shop at school supply the needed stimulus and interest to the great relief of anxious parent and teacher.

The child like any other animal must investigate his material surroundings and be able to master them. "This is the first mastery in the young life, and if properly directed, becomes the key to all the greater and wiser and wider masteries of the future." Manual training aids and encourages this mastery of mind over matter.

Dr. Seaver has said "Manual training is essential to the right and full development of the human mind, and therefore no less beneficial to those who are not going to become artisans than to those who are." "Manual dexterity becomes the evidence of a certain kind of mental alertness and power. There is here a correlation of the

powers of the mind and body that makes for the mastery of freedom toward which all education leads." Nothing stimulates and quickens the intellect more than the use of mechanical tools, when used under the direction of competent teachers. "The boy who constructs is the one who thinks, deliberates, reasons and concludes. "

The real object of manual training instruction is to get the brain and the hand to work in harmony. It is not the purpose to make the boys and girls artisans and seamstresses but simply to help them to be able to help themselves. If the mind and the muscle work together, they both realize their highest efficiency.

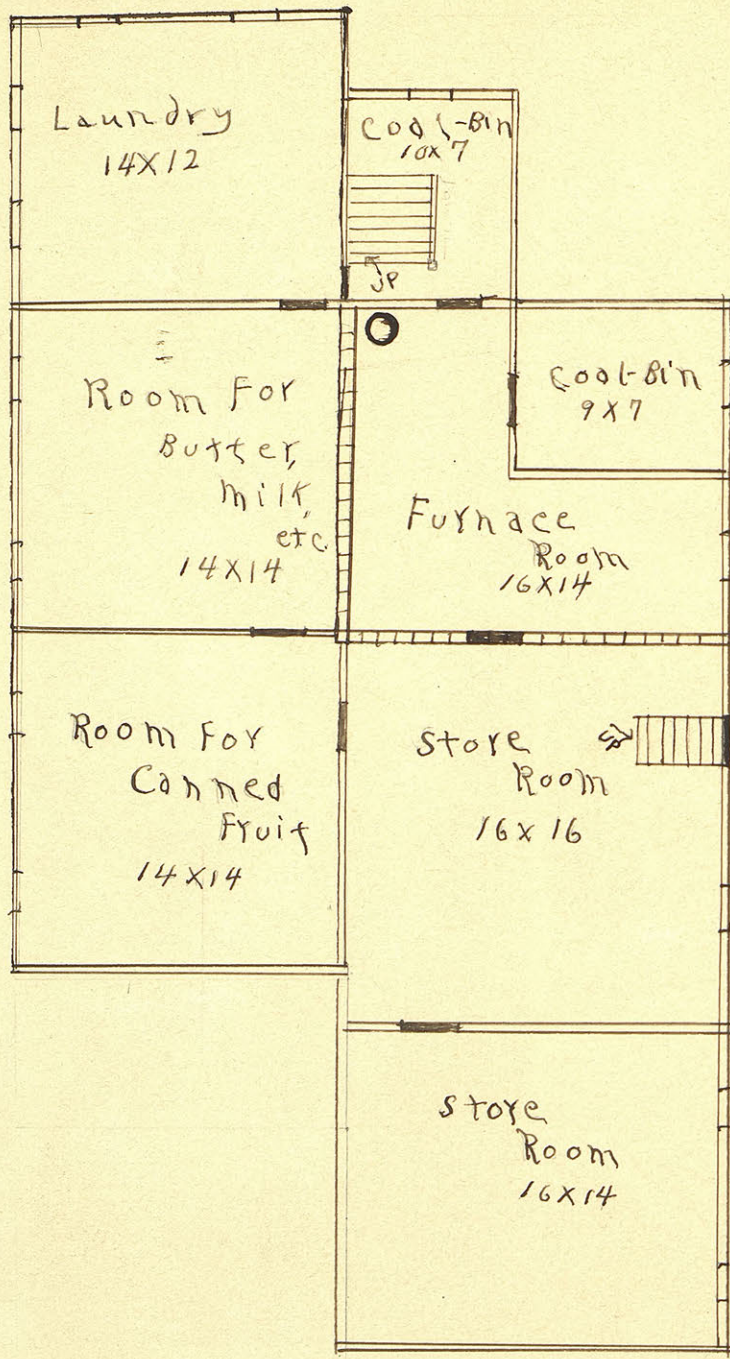
We need at the present the reunion of mind and muscle, not trained hands, but trained minds with hands subject to them.

The highest activity of the mind is creation, the conceiving a new thing and carefully working out in detail the conception, and then putting it into actual realization.

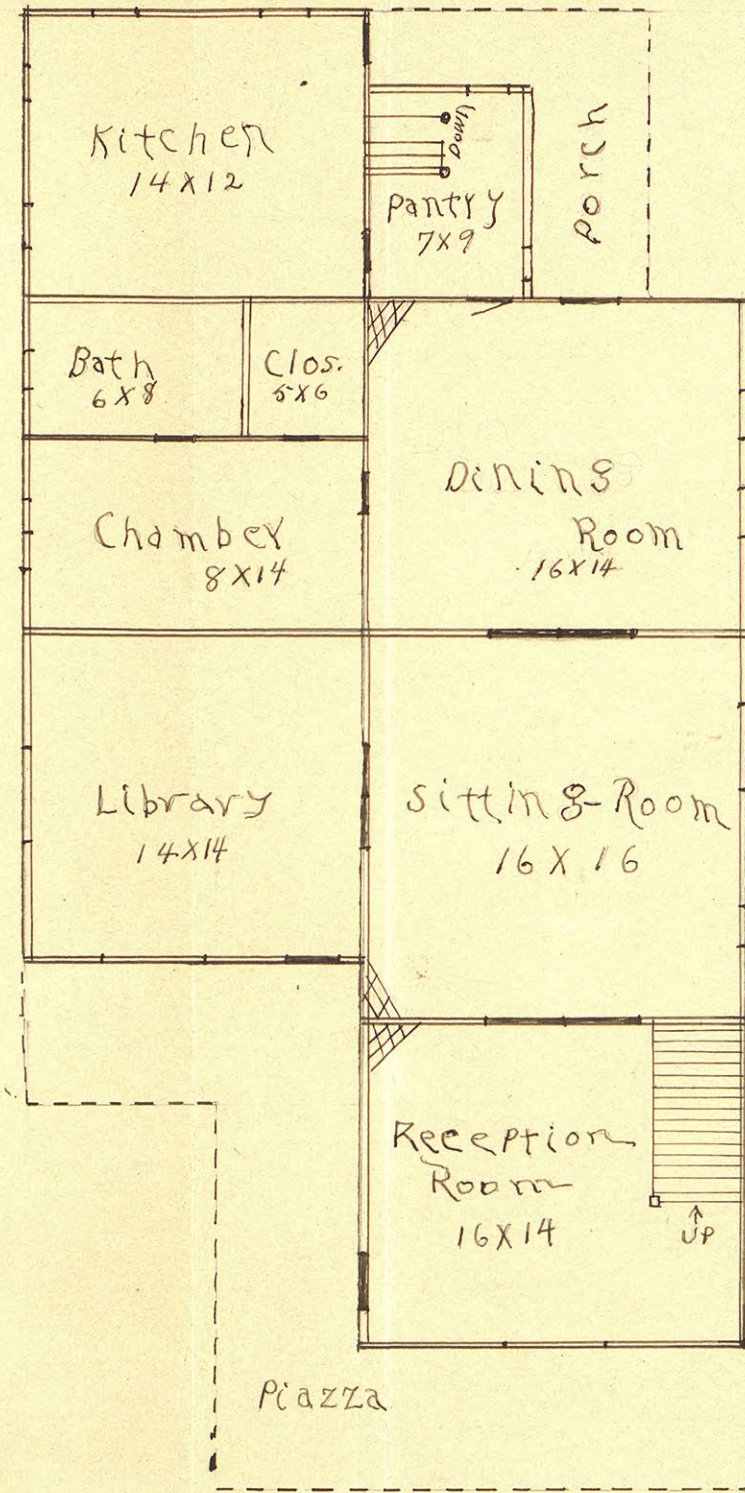
The man who conceives, designs and makes things is performing the highest function of the mind.

The boy has ideas , but words for their expression fail him, he is embarrassed and unable to express himself, but give him tools and things to work with and he is in possession of his powers at once. The boy who has thought out a tool, or a machine and then has made it, has really accomplished more and has gotten more power than he could have obtained through any amount of learning about things.

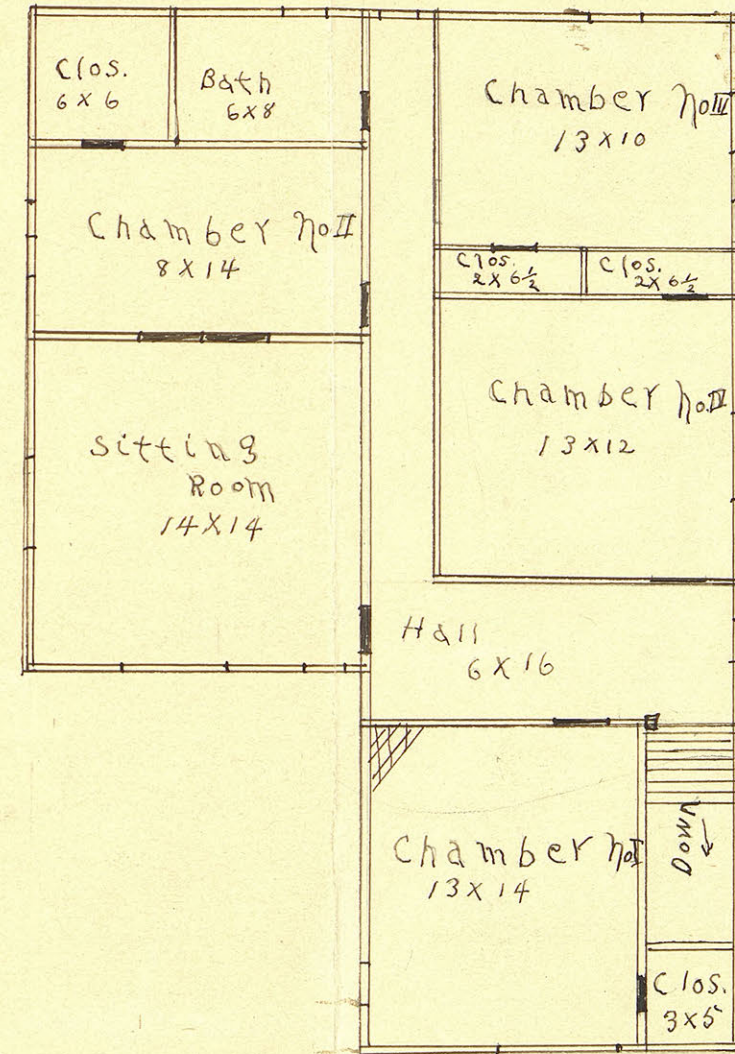
The aim of every subject is the development of habits. The aim of manual training expressed in a concise form is the development of useful habits of a general nature. The fact of repetition is admitted to be the corner stone of all theories of development.



Plan of Basement



First Floor



Second Floor

Scale $\frac{1}{8}$ In to 1'

Some of the habits formed by manual training by means of repetition are-

I. Habits of muscular control - Work should be such as will require a variety of muscular movements, with sufficient repetition of each to form useful habits.

II. Habits of order and neatness are secured by insisting that the pupils do their work seriously leaving the laboratories and shops in perfect order when work is completed.

III. Habits of accuracy and truth are formed if every exercise calls into action the very best effort that the pupil is capable of. The class should never be asked to do more than they can do well.

IV. Habits of self-reliance - Manual training is especially well adapted to further the development of this habit, because the success of the effort is apparent to the pupil himself. He does not have to be told as is the case in most other subjects.

There is another psychological foundation for manual training which should not be overlooked. All educators are of one mind that the first duty of the teacher is the cultivation of the perceptive powers. Knowledge begins in perceptions. The purpose of manual education is primarily the training of the hand and eye. Hence drawing as a means of cultivating visual perception, is made one of the prominent features. The introduction of tools in connection with wood, iron and other materials is simply for the purpose of so cultivating the hand as to enable the mind to attain to a larger and more exact knowledge of things as they exist in nature and are used in the industrial arts. It would therefore be easy to show that the introduction of manual work into the schools is important because of the effects it would have upon the mind itself.

The processes of manual training afford a better means of cultivating the faculties of reason and judgment than many things which now find a place in the courses of instruction. Measurements, comparisons, and adjustments of means to ends, the co-operation of mind, hand and eye, all conduce to a broader mental culture.

Memory - Manual training gives plenty of memory work but the impressions are so vivid on the mind of the child that it requires little effort to retain them. The things remembered being mostly in the relation of causes and effects.

Imagination - The cultivation of imagination in a laboratory differs much from that gained in literature, but it is no less valuable. By manual training they are enabled to grasp the conditions of new and useful problems much more quickly than those who have not had such training. Manual training cultivates the scientific imagination which is essential to the best work in scientific research.

Generalization - They begin to generalize from the first, the value of their generalizations being in proportion to their experience and hence arises one explanation of the practical advantage the manual graduate has over those who have not had this experience in dealing with real concrete things.

His work in manual training should be a line of continuous victories over difficulties gradually increasing but not surpassing his power at any stage. Continued failure is worse than no attempt. Success is a greater factor in the educational value of manual training than in any other subject.

REFERENCES.-

Woodward's Manual Training.
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