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CHAPTER FOURTEEN

ACTIVITY AND THE TRAINING OF THOUGHT

In this chapter we shall gather together and amplify considerations that have already been advanced, in various passages of the preceding pages, concerning the relation of action to thought. We shall follow, though not with exactness, the order of development in the unfolding of a human being.

I. THE EARLY STAGE OF ACTIVITY

"What Is the Baby Thinking About?"

The sight of a baby often calls out the question: "What do you suppose he is thinking about?" By the nature of the case, the question is unanswerable in detail; but, also by the nature of the case, we may be sure about a baby's chief interest. His primary problem is mastery of his body as a tool of securing comfortable and effective adjustments to his surroundings, physical and social. The child has to learn to do almost everything: to see, to hear, to reach, to handle, to balance the body, to creep, to walk, and so on. Even if it be true that human beings have even more instinctive reactions than lower animals, it is also true that instinctive tendencies are much less perfect in men, and that most of them are of little use till they are intelligently combined and directed. A little chick just out of the shell will after a few trials peck at and grasp grains of food with its beak as well as at any later time. This involves a complicated coordina-
tion of the eye and the head. An infant does not even begin to
reach definitely for things that the eye sees till he is several
months old, and even then several weeks' practice is required
before he learns the adjustment so as neither to overreach nor
to underreach. It may not be literally true that the child will
grasp for the moon, but it is true that he needs much practice
before he can tell whether an object is within reach or not.
The arm is thrust out instinctively in response to a stimulus
from the eye, and this tendency is the origin of the ability
to reach and grasp exactly and quickly; but nevertheless
final mastery requires observing and selecting the success-
ful movements and arranging them in view of an end. These
operations of conscious selection and arrangement constitute
thinking, though of a rudimentary type.

Mastery of the Body Is an Intellectual Problem

Since mastery of the bodily organs is necessary for all
later developments, such problems are both interesting
and important, and solving them supplies a very genuine train-
ing of thinking power. The joy the child shows in learning
to use his limbs, to translate what he sees into what he
handles, to connect sounds with sights, sights with taste and
touch, and the rapidity with which intelligence grows in the
first year and a half of life (the time during which the more
fundamental problems of the use of the organism are mas-
tered) are sufficient evidence that the development of physi-
cal control is not a physical, but an intellectual, achieve-
ment.

Social Adjustments Soon Become Important

Although in the early months the child is mainly occu-
pied in learning to use his body to accommodate himself to
physical conditions in a comfortable way and to use things
skillfully and effectively, yet social adjustments are very
important. In connection with parents, nurse, brother, and
sister, the child learns the signs of satisfaction of hunger,
of removal of discomfort, of the approach of agreeable
light, color, sound, and so on. His contact with physical
things is regulated by persons, and he soon distinguishes
persons as the most important and interesting of all the
objects with which he has to do.

Speech, the accurate adaptation of sounds heard to the
movements of tongue and lips, is, however, the great in-
strument of social adaptation; and with the development
of speech (usually in the second year) adaptation of the
baby's activities to and with those of other persons gives
the keynote of mental life. His range of possible activi-
ties is indefinitely widened as he watches what other
persons do, and as he tries to understand and to do what
they encourage him to attempt. The outline pattern of men-
tal life is thus set in the first four or five years. Years, cen-
turies, generations of invention and planning, may have
gone to the development of the performances and occupa-
tions of the adults surrounding the child. Yet for him their
activities are direct stimuli; they are part of his natural
environment; they are carried on in physical terms that ap-
peal to his eye, ear, and touch. He cannot, of course, appro-
priate their meaning directly through his senses; but they
furnish stimuli to which he responds, so that his attention is
focused upon a higher order of materials and of problems.
Were it not for this process by which the achievements of
one generation form the stimuli that direct the activities of
the next, the story of civilization would be writ in water,
and each generation would have laboriously to make for
itself, if it could, its way out of savagery. In learning to
understand and make words, children learn a great deal
more than the words themselves. They gain a habit that
opens a new world to them.
The Rôle of Imitation

Imitation is one, though only one, of the means by which the activities of adults supply stimuli that are so interesting, so varied, so complex, and so novel as to occasion a rapid progress of thought. Mere imitation, however, would not give rise to thinking; if we could learn like parrots by simply copying the outward acts of others, we should never have to think; nor should we know, after we had mastered the copied act, what was the meaning of the thing we had done. Educators (and psychologists) have often assumed that acts that reproduce the behavior of others are acquired merely by imitation. But a child rarely learns by conscious imitation, and to say that his imitation is unconscious is to say that it is not, from his standpoint, imitation at all. The word, the gesture, the act, the occupation of another, falls in line with some impulse already active and suggests some satisfactory mode of expression, some end in which it may find fulfillment. Having this end of his own, the child then notes other persons, as he notes natural events, to get further suggestions as to means of its realization. He selects some of the means he observes, tries them on, finds them successful or unsuccessful, is confirmed or weakened in his belief in their value, and so continues selecting, arranging, adapting, testing, till he can accomplish what he wishes. The onlooker may then observe the resemblance of this act to some act of an adult and conclude that it was acquired by imitation, while as a matter of fact it was acquired by attention, observation, selection, experimentation, and confirmation by results. Only because this method is employed is there intellectual discipline and an educative result. The presence of adult activities plays an enormous rôle in the intellectual growth of the child because they add to the natural stimuli of the world new stimuli that are more exactly adapted to the needs of a human being, that are richer, better organized, more complex in range, permitting more flexible adaptations, and calling out novel reactions. But in utilizing these stimuli, the child follows the same methods that he uses when he is forced to think in order to master his body.

II. PLAY, WORK, AND ALLIED FORMS OF ACTIVITY

The Significance of Play and of Playfulness

When things become signs, when they gain a representative capacity as standing for other things, play is transformed from mere physical exuberance into an activity involving a mental factor. A little girl who had broken her doll was seen to perform with the leg of the doll all the operations of washing, putting to bed, and fondling, that she had been accustomed to perform with the entire doll. The part stood for the whole; she reacted, not to the stimulus sensibly present, but to the meaning suggested by the sense object. So children use a stone for a table, leaves for plates, acorns for cups. So they use their dolls, their trains, their blocks, their other toys. In manipulating them, they are living not with the physical things, but in the large world of meanings, natural and social, evoked by these things. So when children play horse, play store, play house or making calls, they are subordinating the physically present to the ideally signified. In this way, a world of meanings, a store of concepts (so fundamental in all intellectual achievement), is defined and built up.

Moreover, not only do meanings thus become familiar acquaintances, but they are organized, arranged in groups, made to cohere in connected ways. A play and a story blend
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The most fanciful plays of children rarely lose all touch with the mutual fitness and pertinency of various meanings to one another; the freest plays observe some principles of coherence and unification. They have a beginning, middle, and end. In games, rules of order run through various minor acts and bind them into a connected whole. The rhythm, the competition, and the cooperation involved in most plays and games also introduce organization. There is, then, nothing mysterious or mystical in the discovery made by Plato and remade by Froebel that play is the chief, almost the only, mode of education for the child in the years of later infancy.

Playfulness is a more important consideration than play. The former is an attitude of mind; the latter is a passing outward manifestation of this attitude. When things are treated simply as vehicles of suggestion, what is suggested overrides the thing. Hence the playful attitude is one of freedom. The person is not bound to the physical traits of things, nor does he care whether a thing really 'means' what he takes it to represent. When the child plays horse with a broom and ears with chairs, the fact that the broom does not really represent a horse or a chair a locomotive is of no account. In order, then, that playfulness may not terminate in arbitrary fancifulness and in building up an imaginary world alongside the world of actual things, it is necessary that the play attitude should gradually pass into a work attitude.

The Significance of Work

What is work—work not as mere external performance, but as attitude of mind? In the natural course of growth, children come to find irresponsible, make-believe plays inadequate. A fiction is too easy a way out to afford contentment, not stimulus enough to call forth satisfactory mental

response. When this point is reached, the ideas that things suggest are applied to the things with some regard to fitness. A small cart, resembling a 'real' cart, with 'real' wheels, tongue, and body, meets the mental demand better than merely making believe that anything that comes to hand is a cart. Occasionally to take part in setting a 'real' table with 'real' dishes brings more reward than forever to make believe a flat stone is a table and that leaves are dishes. The interest may still center in the meanings; things may be of importance only as furthering a certain meaning. So far the attitude is one of play. But meaning becomes of such a character that it must find embodiment, or at least expression, in actual things.

The dictionary does not permit us to call such activities work. Nevertheless, they represent a passage of play into work. For work (as a mental attitude, not as mere external performance) means interest in the adequate embodiment of a meaning (a suggestion, purpose, aim) in objective form through the use of appropriate materials and appliances. Such an attitude takes advantage of the meanings aroused and built up in free play, but controls their development by seeing to it that they are applied to things in ways consistent with the observable structure of things themselves.

The word 'work' is not very satisfactory. For it is often used to denote routine activity that accomplishes useful results with but a minimum of thoughtful selection of means, deliberate adjustment to produce desired consequences. We view work from the outside when we think of it as simply doing things that need to be done. But it may also be looked at from the inside; it must be so looked at when we are thinking of it in relation to education. Then work signifies activity directed by ends that thought sets before the person as something to be accomplished; it signifies ingenuity and inventiveness in selecting proper means and
making plans, and thus, finally, signifies that expectations and ideas are tested by actual results.

A child, like an adult, may make or do something following the dictation of others, working mechanically from oral or printed instructions, or stereotyped blueprints. There is then next to no thought; his activity is not truly reflective. But as we have already noted, the means-consequence relation is the heart of all meaning. 'Work,' in the sense of intelligent action, is therefore highly educative, because it continually builds up meanings while at the same time it tests them by application to actual conditions. It is necessary, however, that the adult do not judge the value of such an activity on the part of the young by his familiar adult standards about the value of the product; if he does, the activity will usually seem to him to amount to little. He must judge from the standpoint of the planning, invention, ingenuity, observation, exercised by the young, remembering always that what is an old story to him may arouse emotion and thought in the child.

The True Distinction between Play and Work

The point of the distinction between play and work may be cleared up by comparing it with a more usual way of stating the difference. In play activity, it is said, the interest is in the activity for its own sake; in work, it is in the product or result in which the activity terminates. Hence the former is purely free, while the latter is tied down by the end to be achieved. When the difference is stated in this sharp fashion, there is almost always introduced a false, unnatural separation between process and product, between activity and its achieved outcome. The true distinction is not between an interest in activity for its own sake and interest in the external result of that activity, but between an interest in an activity just as it flows on from moment to moment, and an interest in an activity as tending to a culmination, to an outcome, and therefore possessing a thread of continuity binding together its successive stages. Both may equally exemplify interest in an activity "for its own sake"; but in the one case the activity in which the interest resides is more or less casual, following the accident of circumstance and whim, or of dictation; in the other, the activity is enriched by the sense that it leads somewhere, that it amounts to something.

Were it not that the false theory of the relation of the play and the work attitudes has been connected with unfortunate modes of school practice, insistence upon a truer view might seem an unnecessary refinement. But the sharp break that so often prevails between the kindergarten and the grades is evidence that the theoretical distinction has practical implications. Under the title of 'play' the former is rendered unduly symbolic, fanciful, sentimental, and arbitrary; while under the antithetical caption of 'work' the latter contains many tasks externally assigned. The former has no end; the latter an end so remote that only the educator, not the child, is aware that it is an end.

There comes a time when children must extend and make more exact their acquaintance with existing things, must conceive ends and consequences with sufficient definiteness to guide their actions by them, and must acquire some technical skill in selecting and arranging means to realize these ends. Unless these factors are gradually introduced in the earlier play period, they must later be introduced abruptly and arbitrarily, to the manifest disadvantage of both the earlier and the later stages.

Correlative False Notions of Imagination and Utility

The sharp opposition of play and work is usually associated with false notions of utility and imagination. Ac-
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However prosaic this world may be to the adults who find its duties routine affairs, to the child it is fraught with social meaning. To engage in it is to exercise the imagination in constructing an experience of wider value than any the child has yet mastered.

Second, educators sometimes think children are reacting to a great moral or spiritual truth when the children's reactions are largely physical and sensational. Children have great powers of dramatic simulation, and their physical bearing may seem (to adults prepossessed with a philosophic theory) to indicate they have been impressed with some lesson of chivalry, devotion, or nobility when the children, themselves, are occupied only with transitory physical excitations. To symbolize great truths far beyond the child's range of actual experience is an impossibility, and to attempt it is to invite love of momentary stimulation.

Third, just as the opponents of play in education always conceive of play as mere amusement, so the opponents of direct and useful activities confuse occupation with labor. The adult is acquainted with responsible labor upon which serious financial results depend. Consequently he seeks relief, relaxation, amusement. Unless children have prematurely worked for hire, unless they have come under the blight of child labor, no such division exists for them. Whatever appeals to them at all appeals directly on its own account. There is no contrast between doing things for utility and for fun. Their life is more united and more wholesome. To suppose that activities customarily performed by adults only under the pressure of utility may not be done perfectly freely and joyously by children indicates a lack of imagination. Not the thing done, but the quality of mind that goes into the doing, settles what is utilitarian and what is unconstrained and creative.
III. CONSTRUCTIVE OCCUPATIONS

The Sciences Grew out of Occupations

The history of culture shows that mankind's scientific knowledge and technical abilities have developed, especially in all their earlier stages, out of the fundamental problems of life. Anatomy and physiology grew out of the practical needs of keeping healthy and active; geometry and mechanics out of demands for measuring land, for building, and for making labor-saving machines; astronomy has been closely connected with navigation, keeping record of the passage of time; botany grew out of the requirements of medicine and of agronomy; chemistry has been associated with dyeing, metallurgy, and other industrial pursuits. In turn, modern industry is almost wholly a matter of applied science; year by year the domain of routine and crude empiricism is narrowed by the translation of scientific discovery into industrial invention. The trolley, the telephone, the electric light, the steam engine, with all their revolutionary consequences for social intercourse and control, are the fruits of science.

School Occupations Offer Intellectual Possibilities

These facts are full of educational significance. Most children are preeminently active in their tendencies. The schools have also taken on — largely from utilitarian, rather than from strictly educative, reasons — a large number of active pursuits commonly grouped under the head of manual training, including also school gardens, excursions, and various graphic arts. Perhaps the most pressing problem of education at the present moment is to organize and relate these subjects so that they will become instruments for forming alert, persistent, and fruitful intellectual habits. That they take hold of the more primary and native equipment of children (appealing to their desire to do) is generally recognized; that they afford great opportunity for training in self-reliant and efficient social service is gaining acknowledgment. But they may also be used for presenting typical problems to be solved by personal reflection and experimentation and by acquiring definite bodies of knowledge leading later to more specialized scientific knowledge. There is indeed no magic by which mere physical activity or deft manipulation will secure intellectual results. Manual subjects may be taught by routine, by dictation, or by convention as readily as bookish subjects. But intelligent consecutive work in gardening, cooking, or weaving, or in elementary wood and iron, may be so planned that it will inevitably result not only in students' amassing information of practical and scientific importance in botany, zoology, chemistry, physics, and other sciences, but also (what is more significant) in their becoming versed in methods of experimental inquiry and proof.

That the elementary curriculum is overloaded is a common complaint. The only alternative to a reactionary return to the educational traditions of the past lies in working out the intellectual possibilities resident in various arts, crafts, and occupations, and reorganizing the curriculum accordingly. Here, more than elsewhere, are found the means by which the blind and routine experience of the race may be transformed into illuminated and emancipated experiment.

Conditions to Be Met to Render 'Projects' Educative

Constructive occupations have in recent years found their way increasingly into the schoolroom. They are usually known as 'projects.' In order that they may be truly

*See page 52.
educative, there are certain conditions that should be fulfilled.

The first condition, that of interest, is usually met. Unless the activity lays hold on the emotions and desires, unless it offers an outlet for energy that means something to the individual himself, his mind will turn in aversion from it, even though externally he keeps at it. But interest is not enough. Given interest, the important matter is what kind of object and action enlists it. Is it something transitory or is it enduring? Is the interest mainly one of excitement or is thought involved?

Hence the second condition to be met is that the activity be worth while intrinsically. This statement does not signify, as we have just seen in another connection, that its outcome be something externally useful from the adult point of view. But it does mean that merely trivial activities, those that are of no consequence beyond the immediate pleasure that engaging in them affords, should be excluded. It is not difficult to find projects that are enjoyable while at the same time they stand for something valuable in life itself.

The third condition (really only an amplification of the point just made) is that the project in the course of its development present problems that awaken new curiosity and create a demand for information. There is nothing educative in an activity, however agreeable it may be, that does not lead the mind out into new fields. The new field cannot be entered unless the mind is led to ask questions that it had not thought of before and unless the presence of these questions creates a thirst for additional information to be obtained by observation, by reading, by consulting persons expert in that particular field.

Finally, as a fourth condition, the project must involve a considerable time span for its adequate execution. The plan and the object to be gained must be capable of development,