

DYNAMIC FACTORS IN EDUCATION

BY

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PREFACE

ONE does not have to go back very far in order to reach the time when such terms as "motor activity," "dynamic education," "fatigue," and the like were quite strange to educational literature. It was not then thought that teachers should concern themselves with the matters denoted by these terms. It was their business to "train the mind," to "fashion character," to "develop thought," and to "awaken and nourish ethical feeling." The active side of child nature was little heeded, except to repress it, because it was not regarded as a vital or important phase of the "spiritual self." Similarly, while it was more or less generally appreciated that a sound body aided in preserving a sound mind, still it was believed that the spirit could if it would resist the ill effects of a depleted nervous system. Sufficiently aroused, it could overcome all unfavorable material influences, and keep the mind keen and ready and the heart pure and well-disposed even if the flesh were weak.

But we are entering upon a new era for educational theory. Some among us are saying that the dynamic side of human nature is the really important thing to

be looked after in the schoolroom, and outside, too, for that matter. I find myself in sympathy with the view that the motor and physical factors in teaching should receive more attention than they now do in most places, and this will account for the appearance of the present volume. I have aimed to show herein, in the first part, that in the early years, at any rate, motor expression is essential to all learning; and I have endeavored to indicate, in outline mainly, how the requirements of dynamic education can be provided for in all departments of school work. I have sought to point out further that there is a definite order in which the motor powers develop, and that in our instruction we will achieve the highest success only as we conform quite closely to this order. In the second part of the book the relation between fatigue and activity is considered. On the one side the nature and causes of fatigue are discussed, and then the effects upon mind and body are traced. I have gone into considerable detail in pointing out ways and means of carrying forward the work of education without overtaxing the pupil.

Many, perhaps most, of the principles presented in this volume are, I think, becoming familiar to students of mental development, but they are still very hazy, to say the least, in the minds of the majority of those who are charged with the immediate care and culture of the young. So in the preparation of this volume I have kept in mind these latter persons, and have aimed to

avoid technicalities and all purely theoretical discussion. I have endeavored to show concretely the changes which take place with development in respect of various activities, and so it has seemed to me best to start back at the beginning in most cases. To get any just notion of the power of motor coördination, for instance, of a child of five or older, we must see what he can do at the outset when everything is comparatively simple; and then we must give an account of what happens as he moves on in his course.

It has been my purpose, in the first place, to summarize the investigations that have been made upon the different topics discussed. I have, of course, and often without special mention of the fact, constantly consulted the more important writers on Mental Development and Fatigue,—Preyer, Baldwin, Sully, Hall, Shinn, Moore, Perez, Mosso, Binet et Henri, and many others. Then it has been my aim further to give the results of my own observations in the schools and upon several children whose development from the beginning I have followed in detail for a number of years. These children have furnished me the largest number of my illustrations, which, I may say, I have tried to keep within reasonable bounds, contenting myself with one or two typical illustrations of a principle.

At the close of each chapter I have indicated a number of topics for investigation and discussion, which are designed to encourage the reader to make practical test

and application of the principles developed. It has been my thought that these topics would prove serviceable in study classes, and to the student working alone. For this reason I have sought to make every question and suggestion relate to concrete matters within the experience of most students and teachers, and with which they are concerned in their everyday work.

In the Bibliography I have indicated the general character of each reference, and where it has been referred to in the text, I have also suggested the classes of readers for whom it is best adapted. Throughout the text I have referred to the most important book and periodical literature treating of each topic considered, and it will be apparent in most cases, I think, what is the general point of view of any reference. It has seemed to me this would enable the student to choose his readings with greater definiteness than if lists of books had been given at the close of each chapter.

The substance of some of the paragraphs in the second part of the book appeared originally in a Bulletin published in the Science Series of the University of Wisconsin, but the matter is here presented from a new point of view.

M. V. O'SHEA.

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~~PART I~~

THE MOTOR FACTOR IN EDUCATION

CHAPTER I

THE DEVELOPMENT OF INHIBITION

It is a matter of common remark that the typical child gives way easily to his feelings. His tears flow freely upon the slightest pretext; he becomes hilarious over mere trifles; he gabbles incessantly when he ought to maintain silence; he flies into a passion whenever he is crossed; and so one might go through with a long list of excesses. Judging from what one hears and reads, the chief problem of most parents perhaps is to restrain these annoying expressions of the young. How frequently a mother says of her boys, "They will drive me to distraction." Compared with ourselves our children seem impulsive, willful, heedless. They struggle with almost malicious persistence to carry on their own enterprises regardless of the desires of their governors. A sensitive adult, or one who craves quiet, may expect little peace in the company of children from two to ten, say, who have been indulged in their spontaneity. They will be con-

Children's
lack of
inhibition.

tinually striving to perform tasks in emulation of their elders, for which they lack size or strength or ingenuity, and they will use every means at their command to secure help from those who can aid them. They will be running here and there, jumping, climbing, pounding, throwing, shouting, handling everything novel within reach, teasing one another and every living thing from which they can get some reaction; in brief, a normal child is incessantly active in a muscular way, and much of this activity is not in accord with the demands of his environment.

Literature, and especially that of our own day, the day of stories and sketches of the young,¹ is replete with references to the restless hands and feet of childhood.² Aristotle tells us that the child craves exercise of all his motor powers, and the same view in substance is taken by Plutarch, Quintilian, Rousseau, Locke, Pestalozzi, Froebel, Spencer, and their disciples. The characteristic of child life which stands out most prominently in

¹ What I have in mind here is the large amount of book and magazine literature about child life which has been appearing these past few years, — such as Graham's "The Golden Age"; Nesbit's "The Would-Be-Goods" and "The Treasure Seekers"; Martin's "Emmy Lou, Her Heart and Her Book"; and stories similar in general plan by Josephine Dodge Daskam, Stephen Crane, R. R. Gilson, Mary E. Freeman, Eden Phillpotts, Ruth McEnery Stuart, N. A. White, Rudyard Kipling, *et al.*

² There is some good philosophy beneath the mirth of such pictures of child life as Hood gives us in his "Ode to an Infant Son," Habberton in his "Helen's Babies," and the like.

the testimonies of modern students of the subject, such as Preyer, Dewey, Baldwin, Compayré, Sully, Hall, Moore, and many others is motor activity. They all find that the infant tends to be continually in action during most of his waking moments. As Baldwin puts it,¹ "... the child acts, and act it must, on the first suggestion which has the faintest meaning in terms of its sensations of movement." Mr. Bell has kept a record of the activities of his two children for a single day, and a paragraph or two from his report may help to impress the point here under consideration. He says,² speaking of the speech activity of a normal five-year-old for one day: "When I counted the total number of words which the child had used, I was not surprised to find them footing up to 14,996.

"On July 8th, just one week later, a similar observation was made upon the younger child. Her record for the day was a total of 15,230 words. Numerous observations conducted upon different children for shorter periods lead me to the conviction that these records are not exceptionally large.

¹ "Mental Development, Methods and Processes," p. 5.

² *Independent*, Vol. 55, p. 911. Compare with Mr. Bell's record the observations which Mr. Dresslar made upon his child during a half day, — *Ped. Sem.*, December, 1901, pp. 469-481. Here is one sentence from his conclusions: "External stimulus is immediately answered by motor activity, even though at first these responses are uncontrolled and purposeless." (Reprint, p. 12.)

"As to the other activities involved in the day's record, I wish to say that although I followed each child about the house, barn, yard, garden, sidewalk, across the street to playmate's yard, swing, sandpile, etc., I went through fewer than one fifth of the number of movements of body, legs, arms, hands, feet, head, which the child under observation went through."¹

The effect
of motor re-
straint on
mental ac-
tivity.

Shut a boy up in a room to keep him out of mischief, and if he has no opportunity to climb or to use the furniture for constructive purposes, or to use his hands in any way in making or drawing or destroying, then his energies will escape through his vocal organs, or he will simply pound on the floor or walls or turn somersaults. Should these latter activities be repressed, he will in due course fall asleep. An adult could content himself, or at least busy himself, with *thinking*, but not so with the five-year-old. "Before fifteen is the time for action; after this will be time enough for reflection" — so nature

¹ Holmes has studied child nature, and he asks us to observe how the boy "loves to run, swim, kick football, turn somersets, make faces, whittle, fish, tear his clothes, coast, skate, fire crackers, blow squash 'tooters,' cut his name on fences, read about Robinson Crusoe and Sinbad the Sailor, eat the widest-angled slice of pie and untold cakes and candies, crack nuts with his back teeth and bite out the better part of another boy's apple with his front ones, turn up coppers, 'stick' knives, call names, throw stones, knock off hats, set mousetraps, chalk doorsteps, 'cut behind' anything on wheels or runners, whistle through his teeth, 'holler' Fire! on slight evidence, run after soldiers, patronize an engine company, or, in his own words, 'Blow for tub No. 11.'" — *The Professor at the Breakfast Table*, p. 224.

seems to say. One rarely detects children of a tender age deliberating upon a situation; he always finds them dynamic with reference to it. By eight, perhaps, this tendency to reflect, which means to review one's experience with situations resembling that which now confronts the individual, and which summons him to action of some sort, — by eight, possibly earlier in some cases and later in others, this tendency is beginning to be manifested; and it continues to gain in prominence and importance until maturity is attained. Development means, in large measure, the acquisition of experiences which in considerable part function inhibitably upon original impulses and tendencies to immediate reaction upon stimuli. Bagley¹ expresses this view in other terms when he says that education is "the process by means of which the individual acquires experiences that will function in rendering more efficient his future action."

At the outset the child acts largely for the pleasure of action as an end in itself, though the desire to excel and the joy in being a cause doubtless play a part in all his activities. When children begin to use a hammer, for instance, they pound away, not with the aim of making anything in particular, or even hitting a nail. The consciousness of being able to direct the hammer upon a box, or the floor even, is sufficient reward in the beginning. Try to get a child of three, say, to confine his pounding to

¹ "The Educative Process," p. 22.

driving nails, and you will find he is not ready for such specific and coördinated, or better *differentiated*, action. The aim of *making* something, of *achieving a definite end in his action*, cannot yet control his spontaneity to any marked extent. His muscles at this stage of development have a certain measure of independence and initiative; they have not yet become the obedient servants of the mind. In the course of development, ends which the individual desires to attain will come to determine all his activities; mere spontaneous muscular action will become subordinated to ideas, speaking in current phraseology; but it is otherwise at the start.

Restraint
comes with
development.

One who has observed children even casually must have noticed that as development proceeds the period during which motor action may be and habitually is restrained is gradually increased.¹ From five or six years on, children who have the opportunity spend a considerable part of their time in hearing and reading stories and enjoying pictures; and they may even sit quietly in their seats and "learn their lessons." It is probable, though, that the mental states established by a story or a picture tend to become realized readily in appropriate action. The whole

¹ Of course, children differ greatly in the rapidity with which they develop inhibition. V., a boy, is much less restrained at seven than H., his sister, was at that age. The so-called motor type of person does not acquire inhibition as readily or as completely as the so-called sensory or mental type. Cf. Baldwin, "Inland Educator," Vol. II, pp. 126-129; Vol. III, pp. 232-235.

organism is doubtless affected in characteristic ways, at least by those parts of any story that depict vital situations, regarded from the child's standpoint. A situation would not be regarded as vital if there were no marked organic effects produced in contemplating it. Feré¹ maintains that the whole body "thinks" when the brain is in action. Contemplation at any rate implies more than seeing or hearing or imaging in a narrow sense; it implies that the child gains an appreciation of what the eye and ear give, and what images mean, because of certain effects which these exert upon vital function. In telling H., during her fifth year, the story of Bluebeard, I could observe that her respiration was always affected at the tragical moments. Her muscles became rigid when I reached the place where the door was opened into the secret closet, and we got a sight of the remains of the women who had been killed there. And this is typical, I think, of much that may be observed in childhood, if one will look for it. With development this organic response, like so much else in human nature, gets subdued, checked down, generalized perhaps, but it probably never wholly disappears.

As soon as children begin to appreciate a picture or interpret the language of a story they try to "act out" more or less completely what they see and hear. Tell a child of three or four the story of the Three Bears, and he will be likely to growl as he imagines they do; he will show

¹ "Sensation et Mouvement," p. 25.