# EDUCATION FOR THE NEEDS OF LIFE

A TEXTBOOK IN THE
PRINCIPLES OF EDUCATION

FOR USE IN ELEMENTARY CLASSES IN NORMAL SCHOOLS AND COLLEGES AND IN INSTITUTES AND READING CIRCLES

BY

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New York
THE MACMILLAN COMPANY
1922

# PREFACE

THE preparation of this book is the direct outgrowth of the generous appreciation given to the writer's "Psychology of Thinking." The dominant point of view of that book is here applied more widely to the interpretation of education. Although treating of principles and fundamental ideas rather than of details, nevertheless the attempt has been made to express the thought simply enough to make the book useful as a text in elementary courses in Normal Schools and Colleges and as the basis of discussion for groups of students who are working together in reading circles and teachers' institutes.

Education is conceived as an integral phase of the life process. Everything that lives has needs to be met. In so far as any living being actually modifies its own behavior in the light of experience, learning occurs. Conscious, or intentional, education gives guidance and direction to the natural learning processes. It does not substitute something else for the principles, laws, and methods of nature; it works in harmony with them and facilitates nature in the attainment of her goal in the lives of individuals. The outcome is that the needs of life are met better, more fully, and at higher levels. Education, to be efficient, has to know what the needs of life are, under what

conditions children normally undertake to meet them, by what processes they are met, what subject matter is suited to meet needs, and what sort of people are best fitted to assist children in meeting their needs. After giving the scientific background upon which this functional conception of education rests, the writer applies the idea to the interpretation of the nature and function within the educative process of the aim, the pupil, the curriculum, the method, and the teacher.

In the matter of organization the book contains one new feature, a series of questions at the head of each chapter. They are not put there with the idea that they are to be asked by the teacher of the class. Their function is to focus the mind of the reader upon the outstanding problems of the chapter in advance of its study. It is hoped that readers and students of this text will take the time to give their minds the "set" which Professor Thorndike emphasizes as a condition favorable to learning, or the grasp of thought.

The preparation of this text would have been impossible without the sympathetic interest of Professor Paul Monroe. I am indebted also for criticism to my wife, Lily R. Miller; to Mr. Sterling A. Leonard, Professor of English in the Lincoln School of Teachers College; and to Mr. Herman C. Henderson, Professor of Psychology and Education in the State Normal School, Milwaukee, Wisconsin.

IRVING E. MILLER.

New York City,
June 1, 1917.

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# EDUCATION FOR THE NEEDS OF LIFE

## CHAPTER I

### THE BIOLOGICAL POINT OF VIEW IN EDUCATION

Why is it appropriate to conceive of education in biological terms? What are the outstanding characteristics of an organism that are most suggestive for educational thought? Will these characteristics apply to the social group as well as to the individual? What is the meaning of adjustment? What are the significant factors in human adjustment? What conditions make education a necessity in its attainment? What are the implications of the biological point of view as to the relations between body and mind in education? as to the relations between intellect, feeling, and will? How does the idea of function grow out of the biological conception? What are its various meanings and applications? Does the mathematical conception of function also have meaning for education? [1]

#### Education for the Needs of Life

When the backbone of winter is broken, the lover of growing things begins to get the gardening fever. One of the first things to be planned is the row of sweet

[1] See the statement in the preface for the significance and use of these questions.

peas. He wants to make sure of a profusion of large, showy blossoms. To attain this end he has to know the nature of sweet peas and to do all that he can to meet their needs. As early as possible in the spring, he digs a wide, deep trench in the ground. Into this he throws an abundance of fertilizer and stirs it in thoroughly. He sows the seed and covers it deeply. Why does he take this mode of procedure rather than some other? He knows that sweet peas require a rich soil and the chance for the development of an extensive system of rootage. The seeds are planted early because it takes a long time for them to sprout and to get well rooted. If they are planted while the ground is still cool, the root system is likely to get well started before the stalks thrust themselves up through the soil; hence they will grow vigorously when they do come up. Sweet peas need an abundance of moisture; hence the gardener plants them deep in the ground so that they will not be so likely to dry out during the heat of summer. For the same reason, he watches the vines carefully through the hot weather and waters them frequently. He knows that vigorous plants such as are necessary to the growth of large blossoms must have adequate room for their roots and the vines must receive an abundance of sunshine; so he thins out the young plants until they stand not less than an inch apart. Sweet peas need some sort of

support to which their tendrils can cling and carry the vines up into the sunshine; so the gardener provides an upright wire screen upon which the vines may run. Now the gardener cannot create according to his will either the seeds, the vines, or the blossoms. He can only provide the conditions most suitable for their growth and give the care that will meet the needs of the growing vines as fully as possible at every stage of their life. The stockman, in like manner, is successful with animals in so far as he knows their nature and is able to assist them most effectively in meeting their needs.

The human being is not an exception to other living things in the fundamental laws of life. From the biological point of view, we must think of him as a living whole, or organism. They who would see the child reach his highest perfection must know his nature and supply the conditions under which his needs can best be met. Education is not something apart from life; its nature and function can best be seen in the light of the living whole to the perfection of which it contributes. The fuller meaning and significance of this point of view will be brought out in the study of the outstanding characteristics of an organism and the process of adjustment of human beings to their environment.

## The Outstanding Characteristics of an Organism

The organism has many characteristics which mark it off from a mere thing. For our purposes, it will be sufficient to emphasize four of these.

**An organism has needs.**

A stone, a piece of iron, a pan of water cannot be said to have any needs. They are just what they are. No problem confronts them of maintaining their status. Except from an outside point of view it doesn't matter at all whether they remain as they are, whether they are broken into bits, or whether they are entirely disintegrated. But it is of the essence of an organism to live, and this means that it must be continually satisfying needs. The lower forms of plant life need light, air, water, and nutrition. As we ascend the scale of life, particularly in the animal series, needs multiply. In man they are exceedingly varied and complex. To live a human life involves the satisfaction of all sorts of physical, mental, and social needs.

**An organism is capable of behavior.**

By behavior we mean any kind of activity in response to stimuli from without or to tendencies from within. A stone, a piece of iron, a pan of water cannot be said to respond to stimuli. They do not act, they move

when acted upon. What they do is the result of mechanical and physical forces. But a plant tends to bend toward the light, a frog to jump into the water, a man to respond in thousands of specific ways to the situations of life by which he is confronted. In speaking of human beings, we include under the head of behavior not only motor processes but also those that are mental. I see an apple under the tree; I respond by focusing my eyes upon it, walking toward it, picking it up, and eating it. In this case behavior is dominantly motor, but not without some mental activities. My behavior might be simply an emotional response in the form of pleasure at the beautiful color and form of the fruit; or it might be an intellectual response in the form of curiosity as to the species of apple and its characteristic qualities. In the case of human beings we might appropriately speak of tendencies to social and spiritual behavior also, — tendencies to act in coöperation with others and with reference to the needs of the higher life.

**The organism is capable of adaptive behavior.**

By adaptive behavior we mean such action as meets the needs of the organism. The stone, the piece of iron, the pan of water have neither needs nor modes of action suited to meet them. But the house-plant, when it bends toward the window, meets its need of

light by an adaptive mode of behavior. The frog in need of food can meet that need by snapping at flies. The man who is in need of shelter can meet this need by building a wigwam, a tent, or a house. Man is capable of more numerous and more complex modes of adaptive behavior than any other living thing. These correspond to his more numerous and complex physical, mental, and social needs.

**In the adaptive behavior of an organism all parts, organs, and specialized structures are interdependent and interrelated.**

In the plant, root, stem, and leaf each has its function to perform in the life of the whole. No one of them exists for its own sake; no one of them can live independently of the others. In the human body, we find specialized structures such as the heart, the lungs, the muscles, and the nervous system. Each has its own function to perform, but it is also dependent for its life upon the activity of the other organs. The meaning and significance of each is found in the part played in the life of the whole. Mind and mental processes are subject to the same principle of interpretation. Mental functions, like sense perception, memory, thinking, feeling, and willing, are not ends in themselves but means whereby the needs of the entire organism are better met.[1]

[1] Miller, "Psychology of Thinking," pp. 17–21.

## The Social Group as an Organic Whole

Society is sometimes spoken of as an organism. In the strict biological sense this is incorrect. At the same time, the analogy is so striking that it has great value. In the four respects that we have just discussed, the parallelism is complete. It is correspondingly appropriate to speak of any social group as an organic whole. This is true both of natural social groups such as the family and the tribe and also of artificial social groups such as the business or industrial corporation. The organization of people for coöperative ends means both the existence of needs that can be attained better through organization and also the emergence of new needs due to that organization. Among these are the needs of leadership, obedience, larger human sympathy, coöperative ideals. The family, the tribe, the church, the school, the bank, the manufacturing corporation, all develop new modes of behavior; and in so far as these coöperative modes of behavior accomplish the legitimate ends of the social whole, meeting its needs, they may be called adaptive. It can also be said of any one of these social groups that the individuals composing it are mutually interrelated and interdependent. In any social organization, the individual ceases to be merely an end in himself, he becomes also the means to the realization of the ends of

others. The same thing may be said about the specialized organizations within the group. In the large business concern, there are special departments of advertising, of salesmanship, of accounting, etc. These have their meaning and significance only in their relationship to the primary purposes of the entire organization within which they perform certain functions.

## Education as Adjustment

### Meaning of adjustment.

The mental and social sciences are using the term "adjustment to environment" so freely that it may become familiar to us without our really thinking or knowing what it means. We are apt to pick it up from current usage and adopt it as a part of our scientific jargon without realizing that it is merely a conventional catch phrase without meaning to us. Such terms as this, familiar in sound, but not expressing any real thought or conveying thought to others, become very dangerous in the discussion of education, politics, and religion. Hence it will pay us to spend some time in clearing up the whole idea of adjustment.

From the very outset we must be very careful to understand that adjustment as we use the term in education implies not a mechanical process, but a dynamic one. We derive the term not from physics but from

biology. In the case of physical things, it is true that adjustment, or right working relations of things with one another, may be established by mechanical processes. You can adjust a belt to a wheel in the operation of a machine by tightening the belt until it is carried with the minimum of friction and the maximum of power. You can adjust a piano stool to the height of the player by screwing it up or down until it suits. But neither the belt nor the stool can have any active part in the matter. They are operated on from without. In the case of a living thing, however, the organism is itself an active, or dynamic, center of readjustment. It is a behaving thing as contrasted with the belt or the stool, and through its behavior it meets needs of its own.

If the function of education is to be found in any part which it plays in the process of adjustment, we have a right to say at this point that education is not a mechanical process but a dynamic one. It cannot be conceived as doing something *to* the pupil, or imparting something to him, whether of skill or of knowledge, from without. It is not a process of imposing something on him by the teacher or the school. His adjustment to the environment is something which he must effect for himself through his own activities. This he will accomplish to a certain extent without any aid from others. His knowledge, skill, and character

must come through the active process of meeting his own needs in the various situations that confront him. There is no escape from this conclusion. All that education can do in the matter, from the scientific point of view, is to facilitate the process of adjustment in two ways: first, by providing a rich environment as a basis of stimulation and of materials; and second, by giving a limited amount of guidance and direction to the activities involved.

**Factors involved in adjustment.**

The biological point of view can be cleared up still further by some discussion of the factors involved in human adjustment. Roughly speaking these are three: the environment, the individual, and the existing action system by means of which the individual reacts upon his environment. We need to know the meaning of these, if we are to define the educational problem more precisely and to formulate the function of education in more specific terms.

*The environment.* — In the popular sense of the word, the environment of anything is that which surrounds it. For our purposes this conception is inadequate. The surroundings of the dog and his master may be identical but their environments radically different. This may be true even of children of the same family. The newspaper, the paintings on the wall, the books

on the shelves, the striking of the clock do not enter into the environment of the dog in the same sense as they do into that of his master. To the dog they are limited largely to the physical; to the man they are things that have a large meaning and significance. It is this larger meaning and significance — largely non-existent for the dog — to which the man responds, or which influences his conduct. When we use the term "environment" in education we mean everything to which human beings respond or which is capable of influencing them. From this point of view the environment includes not only physical things and material forces but also things mental, moral, social, esthetic, and religious. The true, the beautiful, and the good are just as real in their influence on men as earth, air, fire, and water.

With the progress of civilization the environment of man has been tremendously enriched and expanded with the achievements of the mind and the spirit. The great personalities of all the ages still live in the vital ideas which they projected. The lives and teachings of Socrates, Moses, and Jesus are a very potent part of our environment. They even influence men who have never heard of them. So with the great painters, sculptors, musicians, writers, scientists, inventors, captains of industry, social reformers, statesmen, etc. By these and by millions of humbler folk the

face of the world has been transformed until it almost ceases to be physical, so charged is it with human achievements, hopes, ambitions, desires, aspirations, ideals, and interpretations. He is certainly not an educated man who has not achieved a large responsiveness to this enriched environment embodying the higher human values that distinguish civilization from savagery. From the point of view of adjustment to the environment, education must assist in meeting the needs of men who are "the heirs of all the ages in the foremost files of time." Man is to live and work in a world that has been reconstructed and enriched with the heritage of all the past.

Still further, the environment of which we must think when we are considering the problem of education is not a static one. Change is very rapid in the modern world. Adjustment is not merely to things-as-they-are. We must have regard to things-as-they-will-become and to things-as-they-ought-to-be. It is a progressive environment which confronts the product of our schools. Hence education must take account of those factors in the process of adjustment that make it possible for men to change their environment to meet new and changing needs. It must emphasize intelligence, initiative, originality, enterprise. It is not so much a fixed adjustment that we want as it is adjustability. This thought leads us naturally to the con-

sideration of the next factor in adjustment, namely, the individual who is to be educated.

*The individual.* — The human being is a dynamic individual, not merely the creature of circumstances. By heredity he brings with him a physical organism that represents a great complex, or tangle, of needs. He is a living bundle of impulses that seek expression, that press insistently for satisfaction. He is not merely waiting to be acted upon, molded, or fashioned; by his inherent nature he tends to act. As a baby he cries, kicks, squirms, thrusts with his arms, and manipulates with his fingers. Throughout his childhood he is "spilling over" with activities — with play, constructive impulses, tendencies to explore with eyes, hands, and mouth, tendencies to investigate, imagine, think, etc. These natural tendencies are, on the one hand, expressive of primary needs and, on the other hand, they determine the trunk lines of the earlier forms of behavior. They condition the process of adjustment to the environment, and hence they must be the starting point in the educative process.

*The action system, or mechanism of behavior.* — The third factor in adjustment is the mechanism of behavior by means of which the individual expresses his natural tendencies and reacts upon his environment to satisfy his needs. Now the striking thing