

ELEMENTARY PRINCIPLES OF EDUCATION

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PREFACE

THIS volume is intended for use as a textbook in a first course in principles of education. The authors have endeavored, first, to select those general facts and principles which will be of most service to typical elementary and high school teachers. They have tried, secondly, to present these facts and principles in a form intelligible to students who have had few or no other courses in education and little or no professional experience. They have attempted, thirdly, to offer an account based, as far as possible, upon the findings of scientific study.

To satisfy the first two requirements, it was found advisable not to introduce as full discussions of certain philosophic, biological, and sociological speculations as are sometimes found in more advanced books on the subject. It was found advisable also to devote relatively little space to the history of educational theories and practices and to descriptive accounts of the financial, administrative, and legal aspects of the school, its teachers, and pupils. The book is devoted primarily to the purpose of establishing sound principles for guidance of teachers in their most important daily tasks. Its chief topics are, therefore, the major objectives of education, the most insistent needs of education at the present time, the special functions of the school, the characteristics of children from birth to maturity, and the principles which underlie the learning and teaching process and the selection and organization of materials and activities for the school curriculum.

Although the writers have sought to present views which the results of scientific study most fully justify, they have found it impossible, without making the volume too long and difficult, to present much detail concerning scientific methods and results. The account, although made more simple and straightforward by this policy, may seem dogmatic. It is expected, however, that the instructor will encourage the students to read additional materials and to take a critical attitude toward the text. To facilitate outside reading and thinking and class discussion, a list of references and a group of problems and questions are appended to each chapter.

E. L. T.

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ELEMENTARY PRINCIPLES OF EDUCATION

CHAPTER I

THE PROVINCE OF EDUCATION

Man, compared to other animals, is the foremost producer of change. His life may be viewed as a continuous and determined effort to change the world in which he lives. He changes the earth's form, whether he merely scrapes out a hole in which to hide or removes mountains to join oceans. He changes its living beings when he destroys flies and breeds cows or when he exterminates weeds and cultivates corn. He changes his fellow men when he teaches or preaches, and he changes himself when he goes to school or joins the church. Whatever he may do, he brings about, directly or indirectly, changes in the world which includes his fellow men and himself.

GENERAL CHARACTERISTICS OF EDUCATION

Education Concerned with Making Changes.—The art and hope of human life is to change the world for the better—to make all things, animals, plants, other men, and oneself, more serviceable for life's ends. Rivers flow without regard to man's intent, but he may change their courses and deepen their channels to make them more serviceable. Insects grow regardless of man's welfare, but

he may exterminate the mosquito which infects him with disease and cultivate the bee which provides him with food. Children, too, develop in part by inner impulses apart from man's direction, but man tries to change their original natures into forms which better serve some human needs. Each man singly tries, by promoting certain changes and resisting others, to make the world of things and men better for himself; a group of men living together, so far as they possess wisdom, try to make things and men better for the group as a whole.

Education an Art and a Science. — All of the sciences, arts, and industries are concerned, directly or indirectly, with the production of changes in the world. Science is concerned with the accumulation of knowledge which may enable men to understand and thereby to control changes that are deemed desirable. Arts and industries are concerned with putting the desired changes into effect. Education, which includes both a science and an art, is likewise concerned with understanding, controlling, and effecting changes which promote the general welfare.

Classification of Arts and Sciences. — Sciences, arts, and industries are usually classified and defined on the basis of the objects which they seek to understand or in which they seek to effect changes. Thus astronomy is a science concerned with the nature and changes of the heavenly bodies; meteorology, with atmospheric conditions surrounding the earth; geology, with the earth's crust; biology, with the plants and animals on the earth; physiology, psychology, sociology, and others, with changes in animals, especially human beings. Education, as a science, is closely allied with the latter group. It is primarily concerned with the nature of changes in human beings. It is not, however, identical with other

sciences which study human beings nor is it confined entirely to the study of mankind.

Relation of Education to Other Arts and Sciences.— Human beings possess many aspects worthy of study, and the changes going on in men are of many sorts. Thus a man is a mass of matter subject to the laws of gravitation, electrical conduction, and the like, so that some of the changes in him are for physics to study ; he is also a concretion of elements of nitrogen, oxygen, hydrogen, carbon, and the like, so that some of the changes in him are for chemistry to study ; other changes in men belong under anatomy ; still others under physiology. While each of these sciences deals primarily with one aspect of man, each also overlaps and borrows from the others. Education is interested primarily in the general interrelation of man and his environment, in all the changes which make possible a better adjustment of human nature to its surroundings. While education is thus interested primarily in man's instincts and native impulses, his capacity to learn, his intellect, skill, and character, it borrows heavily from all other sciences dealing with the nature of man and is also intimately concerned with the sciences, arts, and industries which deal with other things and events in the world.

Education as Adjustment to the Environment.— It is often said that a man's life consists in continual efforts to adjust himself to his environment. Education is often said to be concerned with the process of an individual's adjustment to his surroundings. According to this definition, education would be limited to the study of the human individual who is to conform himself to fit external conditions as well as he may. Such a definition would be correct as far as it goes, but it would be incomplete and misleading. It is true that education involves efforts to change human nature in such a way as to bring man into

more harmonious relations with his surroundings. He *must* learn to live under conditions that exist. But this is only part of the truth. Education is not merely the process of changing human nature to fit into an unchangeable world ; it is quite as fully concerned with changing the world to harmonize with human nature. Man is most conspicuously the animal that refuses to be dominated by the environment. The human will rebels against mere passive adjustment to a stable world. If we look about us, it may appear that more of life is spent in changing the world than is expended in changing human nature. And, as we said in the opening paragraphs, man is not busied with changing the world for the world's sake, but to improve his own condition in it. He is interested and active not only in changing his nature to fit his surroundings, but also in modifying the environment to suit his nature.

Education Concerned Both with Changing Human Nature and Changing the World. — There are, then, three ways in which man may improve his intercourse with or adjustment to his environment. He may change himself, or the external world, or both. The task of the science of education is to discover which of these changes should be made and how to make them. The art of education is the technique of bringing about the changes in human nature when they are found to be desirable. Other arts and industries, such as painting, agriculture, engineering, transportation, are concerned with changing the environment when this is found to be preferable. Education is concerned with any change which influences the interaction of a man and his world. It is concerned with every question of choice between changing nature and changing the environment. If the fruits are poisonous, shall we teach the children to avoid them, or shall we destroy the

plants? If the children are by nature disposed to theft, shall we change the world and its institutions or teach the child to adjust himself differently to the world as it is? Sometimes we elect to change the environment, sometimes to change human nature, sometimes each in some degree. In any case, the problem should be considered by the science of education.

The Educationist Must Know the World as Well as Human Nature. — To solve such problems, what facts must education take into account? First of all, education must know human nature as it is and the limits within which it may be changed. It would be unwise to simplify all commercial and industrial operations to the point where they required no reading of directions and no skill beyond a simple twist of one hand, and equally foolish to have all tasks so complicated as to require knowledge of calculus, or the skill of a juggler, which few could acquire. Secondly, education must take into account the external world — its industries, institutions, nations, customs, resources — as it is and the limits within which it can and may be changed. It would be as unwise to neglect education concerning infectious diseases, if many of these are unlikely to be completely abolished in a generation, as to instruct children in methods of defending themselves against packs of wolves that no longer invade their world. The fact that education is charged with taking into account both the individual and his world as it is and as it may be is responsible for the extreme difficulty and complexity — yet, at the same time, the attractiveness — of the science.

Education Requires Broadest Information. — Education, then, is concerned with far more than mere methods of teaching reading, writing, and arithmetic. It is concerned with the interaction of human individuals and their en-

tire world. Education must survey and understand the world as it is — its physical features, its climate, its useful and dangerous products, its peoples, its governments, its institutions, its customs, its moral codes — since it is charged with assisting people to adjust themselves to the world as it is now. Education should be concerned with proposed changes in any phase of the world, as well as in human beings themselves, since it should be able to offer valid opinions concerning the possibility and advisability of changing human nature to conform to new conditions. Education must be alert to all changes in the world, however caused, whether deliberately with or without its approval, or by war, calamity, invention, or what not, since it is charged with assisting people to adjust themselves properly to new conditions. No science requires a broader range of information; no science is in a position to contribute more to human welfare than education.

Distinction between Education as Art and as Science. — Education, as a science, is concerned with the discovery of the most satisfactory adjustments of an individual to the people, things, and conditions in the world. As an art, education is concerned with bringing about those changes in human nature, as distinguished from changes in the outside world, which result in the desired adjustment. Even as an art, education is concerned with far more than teaching school subjects. It is concerned with producing changes in human knowledge, skills, feelings, emotions, morals, in habits of every type. But before elaborating this fact, let us inquire why the art of education is needed.

THE NEED OF EDUCATION

Education as an art, as a technique of changing human conduct, is needed for three reasons. It is needed, first, because the human being is born and grows up with an

inherited, or unlearned, equipment that provides an incomplete and unsatisfactory ability to adjust to *any* — even the simplest — environment. It is needed, secondly, because natural, unguided learning (as distinguished from education by means of guidance) is slow, wasteful, and often misleading. It is needed, thirdly, because the modern world is so exceedingly complex and changeable that rapid learning is required as long as man takes an actively serviceable part in it.

The Limitations of Original Nature. — Each new generation is born with the germs of a native equipment of intellect, skills, and interests which differ but slightly from that possessed by mankind before the dawn of recorded history. Of the products of a lifetime of learning, the masses of information, the multitude of habits, skills, attitudes, convictions, and ideals possessed by parents, nothing is transmitted to the offspring. They enter the world with the same meager equipment as infants born a thousand years ago.

Need of Utilizing the Gifts of Civilization. — If all human beings save newborn infants vanished to another planet, and if by a miracle the babies were kept alive for a score of years, preserving whatever knowledge and skill came from natural inner growth, and lacking only the influence of the educational activities of other men, they would, at the age of twenty-one, resemble a horde of animals. They would get a precarious living from fruits, berries, and small animals, would easily become victims of malaria, yellow fever, smallpox, and plague, and would know little more of language, mechanical arts, or provision for the future than the monkeys. They would be distinguishable from other mammalian species chiefly by a much greater variety of bodily movements, especially of the hands, mouth parts, and face, a much quicker rate of

learning, and a very much keener satisfaction in mental life for its own sake. But even under the simple conditions of a primitive environment, the life of the jungle, the learning of a lifetime would be limited largely to the simplest type of food getting and protective skills with scarcely any real understanding of themselves or the natural world in which they lived.

If these infants grew up in a deserted modern city, they would advance little if any further without education. They would be engaged mainly in the search of food, mates, and organic comforts like other animals. They would use the books, tools, engines, and other innumerable products of civilization as toys somewhat more intelligently than would apes, but they would not learn to read the books, to bake bread, repair the tools, or make of engines more than spectacles for amusement, wonder, and fear.

Limitations of Unguided Learning. — Should these infants grow up in a modern community in which men and women went about their business with no attempt to advise, guide, correct, or otherwise educate them, they would learn considerable by means of observation. Their development would consist mainly in learning to do what they could see others do. Much of what they could see others do they would not learn because of inability to understand its significance. Even the simpler activities closely related to primitive wants they would learn uneconomically and often in an inefficient manner by observation alone. At most, they would merely acquire some of the forms of civilized life; they would learn little of its meaning. They would learn to ape us, without learning to live our life. Without some education, the spoken word, the typewriter, the newspaper, the electric light, the medicine bottle would remain mysterious to them all their lives.

The surprise is not that we learn so little and slowly without tuition, but that with it we can learn so much and so rapidly even as infants. Our capacity to learn as adults is largely due to our education as infants. Our development depends more than we realize on acquiring early the most essential tools for learning.

Whatever charms the life of a man left to his own original nature would have, it is certain that no wise man would choose that life for his children. Indeed, the energies of men, as far back as we can trace them, have been spent in preventing that life by education. Even primitive man, in his few-sided existence, recognized the need of educating the young. Because it was so obvious, the value of education was one of the earliest discoveries. So it is not enough to change the face of the world with cities, mines, farms, and factories. Man must be taught to use them. *Advantageous changes in the world's things produce their benefits only when accompanied by changes in the human beings who are to live with them.*

Modern Life Requires Continuous Learning. — As civilization has advanced and as life has become more complex, knowledge more extensive, implements more numerous and complicated, social relations more rich and varied, the need of education has increased rather than decreased. Merely to participate with reasonable fullness in the life of a modern city — and the proportion of urban dwellers is constantly increasing — merely to react with understanding and propriety to the contacts of everyday life requires many skills of body and mind, much information, and millions of modifications of the primitive animals which we are by birth. The need for education, merely to adjust ourselves to conditions to our own satisfaction, does not cease at any time from the cradle to the grave. The motor helplessness of infancy, the emotional