

PRINCIPLES OF EDUCATION

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PREFACE

THE present work is the outgrowth of actual class-room experience in teaching the subject for two years in the State Normal School at Milwaukee and ten years in the State University of Iowa. Previous to this experience, many of the ideas here expressed had been gradually shaping themselves while the author was teaching and supervising in public schools. All of the material has been carefully tested in junior and senior university classes, and much of it in advanced normal school classes. Portions of several chapters have been given many times in teachers' institutes and associations. The distinct aim, however, has been to produce a text-book of college grade for beginners in the study of educational science.

It is hoped that ten years of public school experience has given the book a practical flavor. No science or art is worthy of pursuit unless it has some relation—direct or indirect—to the every-day pursuits of life. The end of all science should be better and higher living. The science of education should contribute richly to the solution of the every-day problems of the teacher and the parent. This contribution should be in the form of underlying principles, rather than prescriptions and devices. The one who is seeking recipes for doing specific things will seek here in vain.

Parents and other citizens need an interpretation of life. A study of the principles underlying the great problems of education gives certain phases of interpretation in a singularly helpful way. I have been much encouraged by the numbers of students who have spontaneously spoken of the new interpretation of all their studies and of life which came through a study of the science of education. It is unfortunate that education and teaching have been regarded as synonymous terms. It is

hoped that this book may help to modify that notion. In reality, the study of educational principles, the function of education in society, and the history of education are important for lawyers, doctors, ministers, journalists, and parents, as well as for teachers. It is important that these phases of the study of education should come to be regarded as truly liberalizing as languages, literature, science, or mathematics.

During the last quarter of a century an unprecedented amount of attention has been devoted to the scientific study of educational problems. Much research and experimentation have been carried on and the results recorded largely in periodical literature. A rich and interesting literature of education has thus been accumulated. But very inadequate attempts have been made to gather the fruits of the old and the new into convenient hand-books. Consequently much valuable material has been practically inaccessible to beginning students, who are usually obliged to study in large classes. The author has felt keenly the handicap due to the lack of such manuals and hopes that this work may in some measure remove the difficulty which college teachers of education everywhere have recognized.

The chief claim made for this book is that it assembles the main, well-tested results of the scientific study of education from the psychological and biological view-points and presents them in a way which secures continuity, correlation, and a unified interpretation of them. It was originally planned to include a discussion of the sociological phases of education, but the magnitude of the task and the limits of the size of the book have prevented. It is not assumed that all of the possible or valuable principles of education are discussed in this book. Neither is it claimed that they are stated in the most critically logical order. From the stand-point of apperception and interest the order here given has seemed to be justified by experience. Doubtless the order of chapters may be varied considerably with equally satisfactory results. There has been no attempt at making a "comprehensive system" which should excite only the interest of the "logic chopper." It is believed

that every principle set forth is of such vital importance that its expression in a convenient hand-book will be welcomed. Additions and rearrangement will need to be made subsequently. It is hoped that this book will be regarded as a pioneer which may be useful in blazing a new trail into the land so full of promise.

The author's plan in the class-room has been to make the lectures very informal. In writing them out for a larger audience it is hoped that the informality has been to some extent retained. That will account in some measure for the size of the book. One great defect of pedagogical text-books heretofore has been their exceeding brevity and abstractness. They have contained summaries instead of substance. Such books prove unintelligible to beginners and unnecessary to advanced students. To teach well one must have an abundance of concrete details and illustrations. The first chapter is intended merely as an introduction and differs from all the rest in being necessarily abstract and condensed rather than concrete and expanded. The beginner should read it on first approaching the subject for the purpose of orientation rather than with the expectation of mastery. The broad generalizations can only be fully comprehended after various subjects treated in the subsequent chapters have been studied. The student is advised to reread the chapter after the rest of the book is mastered.

An attempt has been made to guide the reader to the rapidly growing literature of education. To this end direct quotations are frequently given and references appended. In this way the author has hoped also to give credit wherever due and to acquaint the reader with some of the many who are contributing so richly to the great work of education.

F. E. B.

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PRINCIPLES OF EDUCATION

CHAPTER I

THE NEW INTERPRETATION OF EDUCATION

Popular View of Education.—Education is commonly measured by the number of years of schooling one has had, the institutions attended, the subjects pursued, degrees conferred, and by other similar conventional measuring units. One whose school training has been abbreviated, who has not been through the traditional mill and ground out according to a standard pattern, is often said to be uneducated. Even many scholarly people think of the science or the philosophy of education as dealing wholly with methods of teaching the various school subjects or with school management. While the subject of education may be properly concerned with principles underlying methods of instruction and management, it is by no means restricted to them. This popular conception of education as something confined to schools and school-rooms, the acquiring of book facts, formal drill and discipline, is altogether too narrow.

New Interpretation.—Education is not a new process, but it is receiving new interpretation. Many of the means of education are of very recent origin; but education is in reality a process as old as the race itself. Whatever influences one in such a way as to determine his future conduct is a means of education. This is true whether the influence comes from external forces or as a resultant of one's own actions. Education may thus be good or bad; may elevate or debase. The school, though conventionally regarded as the only institution of education, is of comparatively recent development. But

it is not the most fundamental means of education, even though society tends to relegate all educational functions to it. Reflection shows us that there are multitudes of influences which help to determine the character of every individual. A few of these factors will be considered.

The Home as an Educator.—First consideration may properly be given to the home. This is the first institution to touch the life of the individual, and in many ways it is the most influential of all the forces brought to bear upon him. Though the school and one's business or profession give more definite mastery of technical accomplishments which come to be regarded as the fruits of education, yet the use to which these will be put is largely determined by the ideals developed in the home. Religious creeds are gained at the mother's knee, political beliefs are absorbed in the family circle, and social ideals largely fixed by family customs. Honesty, veracity, politeness, good manners, clean living and temperance, are most easily inculcated in the home. Likewise, on the other hand, immorality and unrighteousness may be generally traced to undesirable home influences. In fact, the ideals which dominate life and character and give them significance owe more to home influences than to all others combined. So important is this early formative period that some of the churches say: "Give me the child for the first seven years, and the world may have him the rest of his life."

Institutional Influence.—Besides the home there are many specific institutions and activities that educate as really as do the schools. For the great mass they even provide the major portion of the training received. All forms of occupation furnish training and extension of one's horizon. Various scientific, historical and literary societies, clubs, lodges, labor organizations, and guilds, encourage the social instinct and give intellectual and moral uplift. Then there are special means employed to supplement the schools. Among these are lecture courses, public libraries, reading circles, chautauquas, and reading-rooms. The daily newspaper, the magazine, the

telephone, the telegraph, commercial intercourse, etc., all furnish knowledge and incentives for learning, and supply outlets for activities that contribute to the modification of the thoughts, taste, and conduct of the individual. Even plays, games, sports, and pastimes are of vast moment in the development of latent capabilities and in stimulating new ones. In determining a boy's moral action the neighborhood environment and the neighbors' boys are far more instrumental than the school.

President Butler says:¹ "The doctrine of evolution teaches us to look upon the world around us—our arts, our science, our literature, our institutions, and our religious life—as an integral part, indeed as the essential part of our environment; and it teaches us to look upon education as the plastic period of adapting and adjusting our self-active organism to this vast series of hereditary acquisitions." Dr. Harris² emphasizes the importance of the state in education, and maintains that indirectly it is the most influential of all. He writes: "The influence of the constitution of the state, and of its transactions with other states in peace and war, weaving the web of world history, is known to be more powerful in educating the individual and forming his character than any of the three phases of education mentioned (home, school, church), for it underlies them and makes possible whatever perfection they may have. Without the protection of the state no institution can flourish, nothing above savage or barbarous human life can be realized. . . . The state is the essential condition for history. . . . History commences with the evolution of man's substantial self and its realization or embodiment in a state."

Farm Life.—The duties and environment of the farm are often thought to be directly opposed to education. But well-ordered farm life offers the most advantageous sort of environment and discipline that childhood and youth could have. At its best, when made significant through books, good schooling,

¹ *Meaning of Education*, p. 13.

² *Psychologic Foundations of Education*. p. 266.

and the intelligent leadership of parents, it affords certain educative means that money cannot purchase in crowded cities. To be deprived of its advantages and pleasures is almost calamitous. The outdoor exercise and healthful recreations develop firm muscles and red blood, healthy brains, and vigorous constitutions, without which mental development can proceed only indifferently. The farm duties bring a sense of responsibility, so often lacking in city-bred children, and also secure motor training invaluable for all future accuracy of work and for will development. President G. Stanley Hall says: "Of all work-schools, a good farm is probably the best for motor development. This is due to its great variety of occupations, healthful conditions, and the incalculable phyletic re-enforcements from immemorial times. I have computed some threescore industries, as the census now classifies them, that were more or less generally known and practised sixty years ago in a little township which not only in this but in other respects has many features of an ideal educational environment for adolescent boys, combining as it does not only physical and industrial, but civil and religious elements in wise proportions and with pedagogic objectivity, and representing the ideal of such a state of intelligent citizen-voters as was contemplated by the framers of our Constitution." Because of its opportunities for immediate and prolonged contact with nature there is offered the best possible preliminary nourishment for the understanding and appreciation of science, literature, and art. Here is offered the chance to find "tongues in trees, books in the running brooks, sermons in stones, and good in everything."

The Playground.—The function of play as an educative factor is only just beginning to be realized. It is not long since play was very generally regarded by serious-minded people as sinful. We now know that through play the child not only gains necessary relaxation and invigoration, but the forms of play are instinctive expressions of the unfolding potentialities gained through race experience. Play not only retraces ancestral experiences, but anticipates future adult experiences.

To work properly in adult life there must be natural and abundant play in childhood. Bagehot wrote: "Man made the school, God made the playground. Before letters were invented or books, or governesses discovered, the neighbor's children, the outdoor life, the fists and the wrestling sinews, the old games (the oldest things in the world), the bare hill, the clear river,—these were education; and now, though Xenophon and sums become obsolete, these are and remain. Horses and marbles, the knot of boys beside the schoolboy fire, the hard blows given and the harder ones received,—these educate mankind."

Influence of Chance Environment.—Not only purposive influences educate, but also all chance environment. The slums educate as forcibly as do Grand Avenue, the church, and the school; a candidate for the penitentiary helps to educate our boys no less than does the Sunday-school teacher. Sometimes the chance and baneful education is more forceful than the designed and elevating. According to Spencer's definition the purpose of education is to prepare for complete living. This even is a conception of an ideal education. Dewey has defined the term in a much more fundamental sense by declaring that education is not solely a preparation for something in the future. It may include that, but there is something more basal. Education, he says, is life itself; and conversely life is education. Here is the only conception which is broad enough, even when we consider ideal education. According to this conception every individual becomes educated, in fact, none can escape it. Even the lower animals, as well as man, undergo education, for do not their experiences bias their future conduct?

Influence of Primitive Arts and Occupations.—Shall we not consider the stride from savagery to civilization as education? But through the long struggle there were no schools except the effective school of experience. In this struggle with the elements, with wild beasts, and with each other, were men not taught some things? Whenever one is taught anything or learns anything there is education. Were not primitive men

for long ages learning how to make implements for warfare, for the hunt, and the chase; learning to make fire, how to cook, and how to spin and weave; how to clothe themselves, provide shelter and protection; how to plough, plant, and harvest; how to cure disease and avoid pestilence; learning methods of transportation, barter, and exchange; learning how to dig, smelt, and fashion the ores; how to utilize the wind and water, and employ the simplest mechanical principles? And when learned were these things not taught? And have they not influenced profoundly the whole character of subsequent history?

We are prone to forget that the school of experience has been in session since the world began and there have been no vacations. Nature has not missed assigning a single lesson. The credits received for the training have been recorded with absolute fidelity. The education which man has received in this wise is incomparably greater and the results are much more enduring than the results of a few centuries of formal education since schools began. In cudgelling his brains for some new school arts which might interest and profit the children it would be well for the school-master to take a retrospective glance and pass in review the school arts which mother nature has employed. If he can discern anything which is related to getting a living, providing food, clothing, shelter, amusement, or advantages, there he will find an interesting and effective school instrument. Utility has been the watchword of nature; it should be the school-master's.

When considering the function of school training it is important to remember that the development and progress attained since the invention of systematic schooling might be represented by a dot, while that achieved in the pre-school period through the exercises gained in connection with the everyday occupations in providing food, shelter, clothing, protection, and recreation would have to be represented by a line of infinite length. If the educational values of industrial activities were correctly understood, we should utilize them far more than we now do in formal education instead of bringing forward something far

removed from the basal instincts of mankind. The school ought to be the most effective instrument of evolution, and should co-ordinate all means that have proved valuable in phylogenetic development instead of discarding them and using only the latest discovered means.

Bain wrote¹ that, "in the widest sense of the word man is *educated*, either for good or evil, by everything that he experiences from the cradle to the grave. But in the more limited and usual sense the term education is confined to the efforts made, of set purpose, to train men in a particular way—the efforts of the grown-up part of the community to inform the intellect and mould the character of the young; and more especially to the labors of professional educators or school-masters."

School an Interpreter of Experience.—The school should be the educational institution *par excellence*. It should be, and is coming to be, the institution which co-ordinates all the best educational processes of life and adds its own special forms. The school studies principles of life rather than mere mechanical modes of immediate use in gaining a livelihood or deriving momentary pleasure and happiness. It thus furnishes an interpretation of life and gives significance to all other modifying influences. It looks to the future more than to the immediate present. The school is the standard-bearer of the highest ideals of the present and of the past. Advanced forms of schools, also, seek to discover new truths and new ideals, and thus become not only guidons of established forms of conduct, but heralds of new ideals. Universities have been the greatest factors in advancing civilization that the world has ever known.

The Child the Centre.—But even after cataloguing all the ideals of education and all the institutions and agencies that have a modifying influence upon the individual during his life, we have considered education from only one side and that the least potent. Such a study is like a study of *Hamlet* with Hamlet left out. Modern educational inquiry has shifted the view-point to include not only ideals and agencies but the

¹ *Education as a Science*, p. 6.

central figure in the process—the child. Nature has been proceeding slowly, steadily, for eons in the production of the crowning product of evolution, and if we would educate wisely we must spell out at least the fundamentals of the secret. Though we may utilize artificial substitutes here and there, yet all must be in harmony with the almost indelible traditional ways found efficient in ages of experimentation. The modern educationist is admonished to go to nature, consider her ways and be wise. The latter part of the nineteenth century deserves lasting credit for centring the attention of educators upon the child instead of the curricula. Though not losing sight of ideals and means, yet an effort is made to understand these in relation to the developing being. The most suggestive history of education is not the history of man-devised practices and theories, but the history which nature has written in the human embryo, disclosing a long, circuitous march from the humblest beginnings to the present wonderful attainment. Every child comes into the world freighted with potentialities gathered laboriously during long past ages. These are so integrally woven that to devise inharmonious educational machinery which cramps or distorts is to produce monstrosities. This suggests that there is no fixity of powers. Evolution has not ceased. Where there is evolution there is plasticity. But the plasticity of the child is not that of a lump of clay, yielding, resisting, but passive when modified. Biological plasticity means in addition to mere modifiability that new lines of growth and development are possible. Through heredity there are strivings along old lines of growth, but with power for new growth. The education of the child is a problem of life, not of an inert lump of putty; a problem of biology, not of physics; a problem of kinetics, not of statics.

Hereditary Prepotentialities.—Donaldson, in his monumental work¹ says: "Education consists in modifications of the central nervous system. For this experience the cell elements are peculiarly fitted. They are plastic in the sense that their connections are not rigidly fixed, and they remember, or,

¹ *The Growth of the Brain*, p. 336.

to use a physiological expression, tend to repeat previous reactions. By virtue of these powers the cells can adjust themselves to new surroundings, and further learn to respond with great precision and celerity to such impulses as are familiar because important.

"In its size and development the central nervous system is precocious. Long before birth all the cells destined to compose it are already formed, though by no means all are developed in the sense that they have acquired the form and connections characteristic for those at maturity. At the close of embryonic life the sensory nerves rapidly extend, and the connection of the central cells with limiting surfaces of the body being thus established, all experiences become those of education. The act of living is thus the most important natural educational process with which the human body has to do, yet it is usual to restrict the term education to a series of formal events falling within the period of school life. . . . It appears probable that the education of the schools is but one, and that, too, rather an insignificant one, of many surrounding conditions influencing growth."

Heredity marks out in broad outlines the limits of the abilities of each individual. Formal educational processes will determine the extent to which latent possibilities are rendered kinetic, but they cannot create tendencies. For example, one devoid of genuine musical capacity cannot develop into a master any more than an oak shoot can develop into a pine, or a racing filly into a draught-horse. Mathematical power, linguistic capacity, or delicacy of touch which will give surgical skill, artistic imagination and execution, are inborn and not created through school training. Besides his physical inheritance of bodily form, size, appearance, his instincts, mental predispositions, and capacities, every child receives a social inheritance in the form of language, institutions, laws, customs, printed literature, and the results of scientific achievements, which at once put him a long way ahead in the march of civilization. Without them his physical heritage would be incapable of securing him much advancement.

In a word, the whole natural history of the individual has been operative in shaping his destiny. The given individual is the resultant of all forces acting upon the developing organisms from the time they began life as simple, one-celled congeners of an aqueous medium. By life is meant not only the individual's own life but all his ancestral life. One's education begins not only two hundred years before one is born, but eons before. A good share of the life of the given individual is a process of the unfolding of his potential capacities. Evolution has plainly taught us that in attempting to bring about any condition nature starts with what is, and utilizes the present conditions. To reform a criminal is a work of time, and all efforts toward that end must consider what his past has been. To reform a hardened criminal is a different proposition from rescuing juvenile offenders. In dealing with pupils in school, to lose sight of a boy's past life and his heredity is to fail completely to understand the means of further development. In attempting institutional reforms many failures result simply because unintelligent reformers attempt to graft alien measures upon stocks that are unrelated to them. An oak shoot cannot be grafted upon the apple-tree; neither can ideal social institutions be made to order; they must be the outgrowth of old conditions made to fit new times.

Many features of street life and even of home environment are out of harmony with all desirable educational ideals, and they cannot be utilized as agencies of ideal growth, but they must be considered and often combated. The farmer does not try to promote the growth of weeds, but he cannot ignore them. Much soil will not produce crops until the retarding agencies have been overcome or eradicated. Similarly in education, all native tendencies as well as environing conditions must be understood and reckoned with if wasteful methods are to be avoided. Education is concerned with the development of every desirable quality of body or mind which might be named. It is equally concerned with the suppression of every undesirable one.