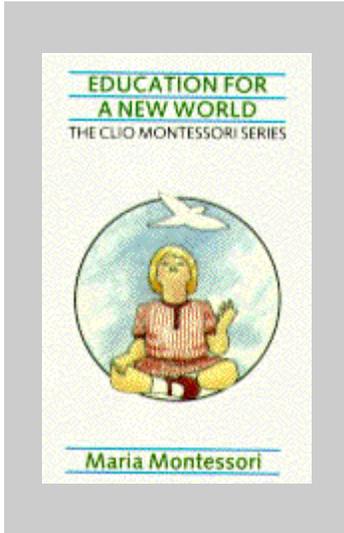




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From the Clio Montessori Series Summary:

"The purpose of this book is to expound and defend the great powers of the child, and to help teachers to a new outlook which will change their task from drudgery to joy, from repression to collaboration with nature. Already the psychic life in the new-born has aroused great interest, scientists and psychologists having made observations about babies from three to five days after birth. The conclusion is that the first two years of life are the most important. So here begins a new path, wherein it will not be the professor who teaches the child, but the child who teaches the professor."

EDUCATION FOR A NEW WORLD

THE CLIO MONTESSORI SERIES

Maria Montessori

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Dedicated to the memory of GEORGE SYDNEY ARUNDALE who called me to India and gave me the opportunity to know this wonderful country and to contact his great personality.

1. INTRODUCTORY

The purpose of this book is to expound and defend the great powers of the child, and to help teachers gain a new outlook which will change their task from drudgery to joy, from repression to collaboration with nature. Our world has been torn to pieces, and is in need of reconstruction. In this a primary factor is education, the intensifying of which, no less than a return to religion, is generally recommended by the thoughtful. But humanity is not yet ready for the evolution that it desires so ardently, the construction of a peaceful and harmonious society that shall eliminate war. Men are not sufficiently educated to control events, so become their victims. Noble ideas, great sentiments have always found utterance, but wars have not ceased! If education were to continue along the old lines of mere transmission of knowledge, the problem would be insoluble and there would be no hope for the world. Only a scientific enquiry into human personality can lead us to salvation, and we have before us in the child a psychic entity, a social group of immense size, a veritable world-power if rightly used. If salvation and help are to come, it is from the child, for the child is the constructor of man, and so of society. The child is endowed with an inner power which can guide us to a more enlightened future. Education should no longer be mostly imparting of knowledge, but must take a new path, seeking the release of human potentialities. When should such education begin? Our answer is that the greatness of human personality begins at birth, and affirmation full of practical reality, however strikingly mystic.

Already the psychic life in the new-born has aroused great interest, scientists and psychologists having made observations of babes from three hours to five days after birth. The conclusion of these is that the first two years of life are the most important. Observation proves that small children are endowed with special psychic powers, and points to new ways of drawing them out literally educating by cooperating with nature. The child's constructive energy, alive and dynamic, has remained unknown for thousands of years, a mine of mental treasure, just as the men who first trod this earth knew nothing of the immense riches that lay hidden in its depths. So far is man from recognising the riches that lie buried in the psychic world of the child, that from the beginning he has continued to repress those energies and grind them into the dust. Now for the first time a few have come to suspect their existence, a treasure which has never been exploited, more precious than gold, the very soul of man.

Observation of the first two years of life has thrown new light on the laws of psychic construction, which, in childhood, are completely different from the psychology of the adult. So here begins the new path, where it will not be the professor who teaches the child, but the child who teaches the professor.

This may seem absurd, but it becomes clear when the truth emerges that the child has a type of mind that absorbs knowledge, and thus instructs himself. This is easily proved by the child's acquisition of a language a great intellectual feat. The child of two speaks the language of his parents, though none has taught him. All who have studied this phenomenon agree that a certain period of life the child begins to use names and words connected with his environment, and soon masters the use of all the irregularities and syntactical constructions that afterwards prove such obstacles to adult students of an alien tongue. So within the child there is a very scrupulous and exacting teacher, who even adheres to a timetable, and at three years produces a being whose acquisitions are already such that it would take an adult sixty years of hard work psychologists assure us to achieve as much.

Scientific observation then has established that education is now what the teacher gives; education is a natural process spontaneously carried out by the human individual, and is acquired not by listening

to words but by experiment upon the environment. The task of the teacher becomes that of preparing a series of motives of cultural activity, spread over a specially prepared environment, and then refraining from obtrusive interference. Human teachers can only help the great work that is being done, as servants help the master. Doing so, they will be witnesses to the unfolding of the human soul and to the rising of a New Man who will not be the victim of events, but will have the clarity of vision to direct and shape the future of human society.

2. THE DISCOVERY AND DEVELOPMENT OF THE MONTESSORI SYSTEM

If education is to be reformed, it must be based upon the children. No longer is it enough to study great educators of the past, such as Rousseau, Pestalozzi and Froebel; the time for that is over. Further I protest against myself being hailed as the great educator of this century, because what I have done is merely to study the child, to take and express what he has given me, and that is called the Montessori Method. At the most I have been the child's interpreter. My experience is based on forty years beginning with the medical and psychological study of defective children whom I tried to help. These were found to be capable of so much, when approached from the new standpoint of cooperation with their own subconscious minds, that it was decided to extend the experiment to the normal, and the Houses of Children were started in some of the poorest districts of Rome for little ones from three years of age. Visitors to these houses were amazed to find children of four years writing and reading, and would ask a child, "Who taught you to write?" The little one would answer, looking up in wonder at the question "Taught? No one has taught me; I did it myself!" The press began to be full of this "spontaneous acquisition of culture," and psychologists were sure that these were specially talented children. For some time I shared that belief, but extended experiments soon proved that all children possessed these powers, and that the most precious years were being wasted, and development was largely thwarted by the fallacious idea that education was possible only after six. Reading and writing are the basic items of culture, for it is impossible to acquire other items without them, and neither is natural to man as the spoken language is. Writing especially is generally considered so arid a task as only to be given to older children. But I gave the letters of the alphabet to four-year-olds, repeating upon normal children experiments first tried on defectives. I had found that just presenting single letters in contract, day after day, made no impression; but when I had caused the forms of the letters to be cut in grooves on wood, and had let them pass their fingers round the grooves, the children recognised the letters immediately. Even defectives, by means of this apparatus, were able after some time to write a little. So I realised that the sense of touch must be a great help to children who had not yet fully develop, and I made simple letters for them to follow round with the times of their fingers. Quite unexpected phenomena revealed themselves when normal children were given these aids; the letters were presented to the children in the latter half of September, and the children wrote Christmas letters that year! Such rapidity had been undreamed of. The children then began to ask questions about the letters, connecting each with a sound; they seemed to be little absorbing machines for the whole of the alphabet, as if there had been a vacuum in their minds which attracted it. This was surprising, yet it is easy to explain. The letters were a stimulus which illustrated the language already in the mind of the child, and helped him to analyse his own words. When the child possessed only a few letters, if he thought of a name which included sounds other than those he could represent, it was natural for him to ask for them. There was an inner urge for more and more knowledge, and he went about spelling to himself words that he knew how to use in his speech. No matter how long and difficult the word, the child could represent it after one dictation by the teacher, by picking out from the prepared compartments of a box the necessary letters. A teacher said a word rapidly in passing, and on return saw that it had been written with the moveable letters. For these mites of four once was enough, though a child of seven or more requires much repetition before he grasps the word correctly. All this was obviously due to that special period of sensitivity; the mind was like soft wax, susceptible at this age to impressions which could not be taken at a later stage, when this special malleability would have disappeared.

As a further result of the inner work going on within the child came the phenomenon of writing. In

realising the formation of the word from its sounds, the child has analysed and reproduced it externally by means of the moveable alphabet. He knew the form of the letter because he had touched it again and again. So writing came suddenly, an explosion like that into speech. When the mechanism has been formed, when it is ripe, the whole of language comes forth, not as usually happens in ordinary schools, first a letter and then a combination of two. If one or two come, then the rest can come; the child knows how to write, and therefore can write the whole language. He now writes continuously, not as a matter of cold obedience to duty, but in enthusiastic obedience to impulse. Those children used everything that they could lay hands on for writing, such as chalk on a road or wall; wherever there was a free space, suitable or not, there would be found writing, even once on a loaf of bread! Their poor illiterate mothers, with no resources of pencil or paper, came for help to satisfy their children's need.

We gave help, and the children fell asleep pencil in hand, writing until the last moment of their day.

At first we thought to help them by giving specially ruled paper, with double spacing gradually diminishing in size; but soon we found that these children could write with equal facility in any ruling, and some liked to make their writing as minute as was compatible with legibility. The strangest thing of all was that they wrote beautifully, better than third-year pupils in other schools. Handwritings were all alike, because all had touched the same letters, and so the same form was fixed in their muscular memories.

Now these children knew how to write, but not how to read. This seems at first extraordinary and absurd, but on reflection it was not absurd. Generally children learn first reading and then writing, but our children had first analysed words in their minds, and reproduced them in letters of the alphabet placed side by side, each letter attaching itself to a sound in the language existing in the child's mind. This union between letter and language had taken place during the child's sensitive period, and language had multiplied itself, and was now expressed by means of the hand through writing, instead of only by the lips through speaking. But he could not yet read, and we thought that an obstacle might be the difference between printed letters and the cursive form used in writing. We were thinking of introducing different types of letters to surmount this difficulty when suddenly the children began to read by themselves, and to read any form of print, even the Gothic, which was to be found in calendars. It was five months later than the first attempt to compose with moveable letters, but again an inner urge had been at work in the child, causing him to make an effort to understand the meaning of those unknown letters.

He was doing a work similar to that of scientists, who study prehistoric inscriptions in strange languages, and by comparison and close observation derive meanings from unknown signs. A new flame was lit in the heart of the child. Parents complained that they could not take their children for a walk without their stopping before every little shop to puzzle out the signs displayed. At the end of their fifth year, these children could read every book.

There is another side of culture which is not so easily explained as writing: the field of mathematics. We consider mathematics from three points of view:

1. Arithmetic the science of number.
2. Algebra the abstract of number.
3. Geometry the abstract of abstract.

Under the guidance of our experience with children we have given these three together, and at an age almost incredibly early.

Uniting the three has been found to be a great help and very effective; it is as if, instead of balancing the subject on a precarious pole, we placed it on three strong feet, which joined together to give great stability. For example, in giving numbers, we group them in geometrical forms, and mathematical material has been built up to give the three subjects almost at the same time. Young children have shown a particular liking, almost a passion, for the study of numbers and their geometrical disposition. Soon after, the abstract of these quantities and their relationships could be made by means of algebra. This also was a matter of great surprise, for at first the child did not show the interest that he had shown in writing. It was easy to say that the child was interested in language, but not in mathematics, which was too dry for him, too abstract! The fact was that we also had

prejudices, and had limited mathematics to the four basic rules and within the first ten numbers. It was the child himself who revealed the truth, for when the decimal system was presented to older children, it was the children of five or six who took to it and learnt it with great enthusiasm, which they had not shown for numbers up to a mere ten. To our surprise, the four-year-olds approached this also, to take it in with zest, and now children of three carry out operations involving millions, and we have had to introduce algebra and geometry. If these are introduced as materials to be handled, children take to it with delight, and the latest excitement has been to find a child occupied in working out for himself the cube of the trinomial, $(a+b+c)^3$; he had argued within himself that if a and b could be used, why not the other letters of the alphabet, for the child does not like limitations!

This vivid and flashing development does not possess a prehistory, as does language; we cannot trace its beginning and development in the mind before its expression, so we can only deduce that there is a special predisposition at this early age to mathematics. We observe that the acts which arouse in him not only interest, but even enthusiasm, are such as require of him the greatest exactness, and the more complicated the motive, the greater is the enthusiasm of the child. This exactness is seen not only in movement, in the exact manipulation required in some exercise, but also in the study of a flower or an insect. There is a predisposition to exactness and detail, and it may be directed to detail of quantity. Arithmetic is a sort of abstraction, and therefore brings this exactness to the abstract level. The child, starting from the material, passes to the abstract number, and thence to the more abstract stage of algebra, and he works with exactness in all three fields, material, abstract and algebraic, fascinated to be able to realise the play of the units. We are helped to this conclusion by the great philosopher and physicist, Pascal, who was immersed in number and quantity, and who asserted that the human mind has the characteristic of being mathematical, and that the path of progress is along this mental quality. This statement generally arouses hilarity, for the practical experience of ordinary teachers seems to show that of all subjects mathematics is most repugnant to the human mind. Now young children are proving Pascal right! Penetrating deeper into his own conclusion, Pascal said that the whole action of humanity was developed around the environment, and this activity was always within increasingly exact limitations. This exactness could be achieved only by the mind, and proved that the mind had this mathematical quality. The mind of man, as seen in history, is dedicated to the transformation of his environment, and to the interpretation of things around him and phenomena arising out of them. To achieve this, it is necessary to be exactly conscious of these things, and to be centred in the field of exactness. Two hundred years ago this quality of exactness was found by Pascal to be a fundamental characteristic of the human mind.

On the important question of fatigue, the child under six has revealed striking facts. In ordinary schools the child soon becomes tired and instruction difficult; hence it has seemed cruel to instruct at an early age, and loving parents want the little ones to do nothing but play and sleep. But there are clear signs that the children themselves get profoundly bored by this programme, and react to it vigorously by all sorts of naughtiness. Experience with our children aged from three to six, and even younger, has shown that not only is there no fatigue in learning at that age, but the children actually become stronger. Not all work brings fatigue; for example, we do much work, as with jaws, teeth and tongue when we eat, and such work results in renewed energy, we feel naturally also a need to exercise our muscles, in order to make them strong. It is the same with children in their mental development. Not only do they seem indefatigable, but by being intellectually active they acquire strength and health. Natural predisposition suits the young child to the reception of culture, but society abandons him mentally at this sensitive period, by its regime of play and sleep. He cannot stop absorbing or stop being active, but if there is nothing to absorb, he has to content himself with toys. Psychologists say that the child must play, for through play he brings perfection to himself. Also they admit that the child absorbs a special environment, and forges the historical link between the past and the future. They conclude that we must observe, without disturbing, the child absorbing the present by playing and living, and not help but abandon him to his own devices. But how can a child in such a complicated world absorb culture if he be left to play with toys and build sand castles? So there is a contradiction in the ideas of these psychologists, who say it is important to communicate with the child in his absorbent stage, and yet he must be left alone, continually to play, as thus he constructs and develops his powers. Play has become exalted as something mystical, and serious and dignified men stand with reverence before a child building and castles. But it is logical that there are in this period of three to six natural aptitudes to easy acquisition of culture, we should take advantage

of them, and surround the child with things to handle which in themselves convey steps in culture. When we place in his environment certain objects which allow him to imitate human actions around him, and the means to perfect acquisitions already made in the first period, we help him to achieve the complicated culture of today. These are no mere playthings which we give, to be sold along with dolls and tin soldiers. Which do children prefer? When the Montessori material is given, children take to it with vehemence, and to a degree hitherto considered fantastic. These starving minds, which have been thrown into an environment which, alone by themselves, they cannot understand or master, when given means to acquire mastery, hurl themselves on it like hungry lions, devour whatever will help them to survive, and adapt themselves to the civilisation that has evolved to date. Faced with this vision of great power in the child, and of its importance to humanity, we must observe that power minutely, and see in what way we can help it. Instead of placing mystic faith in the play of the child, the faith must be placed in the child himself, and we must do something to create a practical science to use those powers which our intuition has lately come to recognise.