

## The Educational Wisdom of Maria Montessori

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*“One day Montessori was observing a child of three who was occupying herself with some graded wooden cylinders which had to be slipped in and out of corresponding sockets in a wooden block. She was amazed to find this tiny girl showing such an extraordinary interest: she showed, in fact, a concentration so profound that it seemed to have isolated her mentally from the rest of her environment. To test the intensity of this concentration – which seemed so unusual in a child of three – Montessori asked the teacher to make the other children sing aloud and promenade round her. But the child did not even seem conscious of this disturbance; she went on just as before, mysteriously repeating this same exercise (ie. taking the cylinders out, mixing them, and replacing them in their sockets). Then Montessori gently picked up the armchair on which the child was sitting, with her in it, and placed her on a table. The child, who had clung on to her precious cylinders during this interruption at once continued her task as if nothing had happened. With her scientific habit of measuring phenomena Montessori counted the number of times the child repeated the exercise; it was forty-two. Then quite suddenly she stopped ‘as though coming out of a dream.’ She smiled as if she was very happy; her eyes shone and she looked round about her. And, strangely enough, after all that long concentration she appeared to be rested rather than fatigued.” [From Maria Montessori – Her life and work, by E. M. Standing, p. 40].*

The incident described above was one of the awakening events in Maria Montessori’s epic discovery of “the absorbent mind,” the energy of the human soul in its quest for growth during the early years of childhood. Montessori created a series of “works” -- lessons -- which captured distinct features of our cultural, mathematical, symbolic, linguistic, scientific, physical, practical, and social world, and she demonstrated that children would naturally and enthusiastically take up these works with amazing concentration and sense of purpose under the right conditions.

Born in 1870 in Chiaravalle, Italy, Maria Montessori was a pioneer in so many ways. She decided to become an engineer early in her life. After she finished technical school she decided to go on to medical school. She was refused admission because she was a woman. She went to see the Pope, and was eventually admitted to the University of Rome Medical School. There she distinguished herself as an outstanding scientist and scholar. When she graduated from medical school in 1896 she was the first woman in Italy ever to have done so.

Her early work was with children who were institutionalized for mental illness or retardation. While in this work she studied the techniques developed by Jean-Louis Itard (the doctor who had tried to educate the so-called “Wild Boy of Avignon”), and Edouard Sequin, whose “sensorial school” in Paris was already well known. Both men promoted the notion that the foundation of learning was development of the senses. Montessori went even further, though. In addition to materials designed to enhance the whole range of a learner’s sensory experience, Montessori began to think carefully about how complex tasks like reading and writing are actually based upon combinations of simpler actions and skills. She figured out how to isolate those simpler skills and how to capture them in various types of hands-on learning modules. She was tireless in her efforts, working from Eight in the morning until seven in the evening, every day. When the “retarded” children she had worked with were tested, they scored as well in

reading and other tasks as did “normal” children. Her conclusion was that the public schools were operating from extremely low standards for this to be able to happen, but it did raise an interesting question: What would happen if her methods of teaching were used on normal children? Would their learning increase? She would have to wait a few more years to find out. Finding herself at somewhat of a dead end professionally, and intrigued by the questions raised by her experiences at the State Orthophrenic School, she returned to university in 1901 to study philosophy, psychology, and anthropology.

In 1906 Montessori was approached by a group of bankers who had a problem. They had built a complex of high-rise apartment buildings for working class families in the San Lorenzo quarter of Rome. But when the parents went off to work, their children were left to roam the halls and streets and do as they pleased. This lack of supervision took a mounting toll in violence and vandalism. The financiers’ solution was to build a school to warehouse these children during working hours. This was the original *Casa dei Bambini* – the Children’s House. At the opening ceremony for this school Montessori surprised the audience by telling them that this place would become famous throughout the world. She had already developed a clear sense of the possibilities of childhood and understood how to go about getting that human potential to blossom. It was no idle boast. Within a few years the fame of this first Montessori school had spread.

The subsequent history of the Montessori movement is interesting. More schools were established in Italy. In 1922 she was made Government Inspector of Schools. Schools based on her methods were established all over Italy under Mussolini, but were shut down in 1934 when Maria Montessori refused to support what was happening to Italy under fascism. She moved to Spain, but left for Holland when the Spanish Civil War broke out in 1936. Holland remains the permanent headquarters of the Association Montessori Internationale (AMI).

World War II began while Montessori was traveling and teaching in India. Because she was an Italian national in a country controlled by the British, she was required to remain in India until the end of the war. But for this reason Montessori’s work is well known and established in India.

War and totalitarianism strongly influenced Montessori’s educational philosophy. She recognized that the schools were part of the social mechanism that conditioned people toward an acceptance of war, prejudice, hatred, and violence. The social ethos in Montessori schools reflects a concern for civic virtue, and incorporates this concern by teaching peace, respect, grace, courtesy, and the skills needed to discuss and arbitrate conflicts in an orderly and dignified manner.

It is interesting that Montessori, perhaps more than any other educational philosopher, has influenced the course of education all over the world. Her methods transcend culture, class, and other socially constructed differences and appeal to whatever is fundamental in human learners. Thousands of schools on every continent serve children of every social background.

For a while, beginning around 1912 when Montessori made her first trip to the United States, she enjoyed tremendous popularity and interest in this country. When she returned to the United States in 1915 a demonstration school was set up at the World’s Fair in San Francisco. Her influence increased all the more. But an orchestrated campaign was already being conducted by professional educationists to discredit her. Her approach did not square with contemporary educational theories (though its successes presented an obvious threat to the credibility of those theories). William Heard Kilpatrick, one of John Dewey’s supporters and an educational professor at Columbia University, was especially aggressive in his attacks. His book, The

Montessori System Examined (1914) helped to turn the tide of public opinion against her. Kilpatrick claimed there was nothing new in Montessori's approach, and that newer (and presumably better) theories were available to guide educational practice. Nor can it have helped that she was a woman, an Italian, and Catholic in an age that was not especially subtle in its prejudices. Montessori's influence in the United States declined almost completely for forty years. She was rediscovered in the 1960's and has enjoyed a steady increase in importance ever since.

In some respects, Montessori built upon a tradition in education that dates back at least as far as Jean Jacques Rousseau, who in 1762 wrote a scathing criticism of child-rearing practices common in the late 18<sup>th</sup> century and recommended instead an approach based upon the freedom of the learner to follow his or her own instincts for growth. Rousseau created an original vision, emphasizing careful study of the learner, minimal intervention by the teacher, educational experiences based upon the direct experience of nature and of things rather than words and talk. Rousseau emphasized the intrinsic goodness of human beings, and insisted that the process of civilization itself was responsible for much of human perversity, depravity, and wickedness. Rousseau's Emile provided a wealth of ideas which have been developed by numerous 'progressive' educators over the past two hundred and forty years, including Pestalozzi, Froebel, Fichte, and Herbart among others in the nineteenth century, and such luminaries as Piaget and Montessori in the twentieth.

Common to all of these thinkers was the conviction that children are far more capable and complex than common opinion gave them credit for, and the belief that education is a natural unfolding of latent abilities, rather than a process of forcing knowledge onto a child. In fact, Montessori provided a scientifically respectable account of the conditions under which a child's innate drive to grow socially, aesthetically, and intellectually can be facilitated, but she was no mushy libertarian. She insisted upon rigorous standards, but with teaching strategies that located much of the effective control in the child. This is no easy task to accomplish.

It is, of course, conspicuously noble to proclaim "the wisdom of the children," and to present oneself as their defender. It brings about warm feelings to be seen as their champion for freedom. Some teachers become so drawn to this role that they never accept responsibility for creating order in the classroom or for promoting the processes necessary for growth. Rousseau notwithstanding, children do not naturally learn complex, formal academic disciplines on their own. Such learning must be guided, yet the motivation to learn cannot be forced.

Montessori's approach was and is successful precisely because she had a clear, comprehensive, and very sophisticated understanding of what children need in order to become consistently centered in that absorbent, active learning mode. She recognized that the personal life and space of most children is constantly being violated by adults whose demands, schedules, and psychological intrusiveness cause a kind of protective shut-down in the child or outright rebellion. Her study of anthropology helped her to realize that most traditional societies incorporate children in the social life of the group, in the company of adults, in a kind of on-going apprenticeship in which they are constantly engaged in genuine work, and that misbehavior, aberrant behavior, and rebellion are often non-existent in those traditional societies. Only in modern civilizations, where adult life has grown increasingly complicated and specialized, are children put aside into schools and forced into patterns of expectation created by adult fiat rather than permitted to follow more natural patterns of adjustment and growth. The shift to an industrial model of schooling clearly takes its toll.

This is why Montessori emphasized the dignity of the child, even in infancy, and why

peace, order, and kindness are elevated to a special status in environments under Montessori's influence. Montessori teachers undergo an impressive regimen of training, learning how to observe children without disturbing them, learning the order in which development normally takes place, acquiring an educational philosophy unique to Montessori schools, and understanding how to introduce children to various processes which are conducted independently by the children once the initial introduction has been absorbed. Most important pedagogically, perhaps, is the fact that complex cultural skills such as are required for reading, for mathematics, for science, etc, can be shaped by a sequenced series of learning tasks, each progressively more advanced, building one upon the other. Montessori analyzed each discipline and created "works" that captured in concrete learning tasks the essence of each successive step, each conceptually significant building block on the way to a fully deployed mathematical, scientific, literate, musical, and artistic mind. It is these cleverly derived "works" that form the discrete steps or lessons in a Montessori unit of study. These works are deceptively simple to the uninitiated observer. Nevertheless, their conception is brilliant.

It takes time for a new child to become "normalized" to a Montessori environment, to learn how to approach the use of these works in a constructive manner. They have to be used as intended, hooking the child into a repetitive cycle of experience that progressively builds a particular set of skills. The works are designed for the most part to be engaged in a particular sequence. Most children are not accustomed to working independently or being responsible for their own personal space and personal growth. There are rules of conduct and order that everyone must follow if the environment is going to promote the kind of sustained attention needed by children to engage in their learning tasks as deeply as the child described at the beginning of this article. But that is how children need to work if they are to master the inner logic of the elements of the natural world and the cultural environment.

*"Montessori believed that the child must have certain conditions in his environment or he will not develop normally; and, further, when periods of disruptive behavior occur, it is because the child is trying to tell us that some great need of his is not being met. His reaction is often violent because he is literally fighting for his life. She found that this type of behavior disappeared when the child began to concentrate on his work, and, thereby, developed self-confidence and self-acceptance through the discovery of himself and his capacities." (From Montessori – A modern approach, by Paula Polk Lillard, 1972, p. 20).*

While there are rules of conduct, these are not imposed upon the child, but the child is led to experience the way these rules define an environment that brings out the intrinsic love of learning for each child. There are no grades, no rewards, no punishments, no competition. Motivation is intrinsic and natural.

A typical Montessori education focuses on four areas: Practical Life, Sensorial Development, Academic (language, reading, writing, mathematics, geography, and science) and Cultural and Artistic. Practical life primarily involves domestic skills, such as being able to dress oneself, prepare a snack, clean up a mess, sweep a floor, set a table, and so forth. No child has to be convinced of the usefulness of these skills, and as they are mastered the child gains self confidence because these are the skills needed in order to "take care of oneself." Brooms and dustpans, mops and sinks and everything else have been scaled down to a child's size. The

knives are sharp, the glasses are made of glass, and the iron is a real iron that gets hot. It is real life, not make-believe.

Sensorial learning involves the kinds of tasks Montessori first learned about from Itard and Sequin. Textures, tastes, smells, sounds, and so forth are experienced by the child and the names of these experiences and their qualities are learned. It is not obvious to us that the senses have to be educated, or that sensorial experience can actually become more refined, more exact, more acute, and can span greater ranges and the child can learn to identify differences with ever finer degrees of acuity, but that is the case.

The ability to describe personal experience is built upon a foundation of experiences having clear boundaries. The child's natural love of order comes from the psychological need to organize experience into clear categories, to build up a coherent conceptual framework that helps the child to make sense of his or her world. Children engage eagerly in genuine work when it serves to bring out the conditions of their own psychological growth. The "works" that Montessori developed were designed to elicit these patterns of internal growth and provide an occasion for them to be rehearsed, studied, experimented with, and creatively played with by the learner. The exact role these works play in the learning process takes time to understand. Montessori grasped their role with a clear intuition and a deep appreciation.

The Language area is a comprehensive domain, involving speaking, listening, reading, writing, vocabulary, grammar, and both practical and artistic uses of language. Her approach to language spanned the divide between phonics on the one hand and whole language on the other. Experts today are recognizing that both approaches play a crucial role in the development of reading and writing skills.

The sequence of language skills development is complex, and has many parts to it, but as those parts get mastered, even by three- and four-year-olds, we see what Montessori termed the "language explosion," the dramatic and often sudden consolidation of all these experiences and lessons into the ability to read and to write. All of a sudden, children "get it." And from that carefully laid foundation the child easily becomes a self-directed learner of language arts. The curriculum for elementary and middle school provides for an adaptation of this same basis of language learning, and builds upon it in developmentally appropriate ways.

The Mathematics area involves works that provide the learner with an experience of and an intuitive feel for quantity, proportion, shape, relationships, and so forth. Montessori observed that "mathematics is the language of order," and that children love order and willingly seek it in experience. A favorite work in every Montessori pre-school is the pink tower, a series of wooden cubes painted bright pink, proportioned in increments of 1 cm. The objective is to stack these ten blocks, beginning with the 10cm cube and ending with the little one centimeter cube. There is also a work in which wooden cylinders can be fitted into a long block, each cylinder larger in diameter than the one before. And another work in which ten cylinders all have the same diameter but range from 1 cm tall to 10 cm tall, and must be installed accordingly into their wooden holder. These works provide experience with seriation, with one variable at a time changing for each work. These two works are then followed by a third and fourth set of cylinders in which both variables, diameter and height, vary.

As quantity skills and counting skills develop, there are other works which capture the essence of number, and of base ten. The best known of these works consists of single glass beads, strings of ten beads wired together into a line, ten strings of beads wired together into a flat, and ten flats wired together into a cube – representing respectively single units, tens, hundreds and thousands. Children spend hours working through various exchanges with these,

and in the process they master the elements of arithmetic. At the end of the day, though, it is impressive to see a young child matter-of-factly inform a visitor that she has “three thousand, six hundred, fifty seven beads” on the table in front of her. But any child who can count to ten can also manage these seemingly enormous quantities in the manner just described.

And so it goes. Shapes, size, volume, proportion, and so forth are explored in concrete, hands-on experience because they have been cleverly captured in these beautifully constructed works. The materials are wood, and glass, metal... not plastic or foam. They are expensive, but they have a real world look and feel. They are seen by the children as tools of learning, not as toys. They evoke a sense of reverence in children precisely because they are of such lovely quality. Students are not permitted to just mess around with these works. When they are ready to be introduced to a new work, they tell the teacher, or the teacher makes a judgment to that effect, and the next work in the sequence is formally presented to the child. This is done by the child watching the teacher perform the work silently, and then the child tries it, and is given whatever minimal assistance is needed to get the learning sequence started.

The goal of this learning method is a kind of structured independence in which children are given new challenges when they are ready, shown how to perform the necessary tasks, and then given the freedom to work through the procedures and (importantly) rehearse these tasks over and over again until mastery is secured. Anyone who has watched small children knows they will get onto a task and repeat it many times before setting it aside, but the same is true of older children if the task manages to capture some important element of learning. The teenager hammering away at a video game is building a repertoire of skills (even if they are of dubious value).

Montessori recognized that there are “sensitive periods” in the progression of human development, periods in which the door opens for specific developmental tasks. She also believed these follow a set order. We now know that Montessori was essentially correct in this, and that sensitive periods are tied to the developmental sequence of the human brain and the order in which neural wiring is completed. Teachers trained in the Montessori method learn how to recognize each child’s state of readiness, and how to match that state with the next tasks in the sequence Montessori established in the various curriculum areas. They absorb a social ethic in which the child is accorded respect and personal space, and the teacher’s role is to coax the child’s energies to useful work in learning rather than impose her own power over the child’s.

### Conclusion

This brief essay is intended only to whet your appetite. Montessori was such a rich source of educational wisdom and her ideas have been so thoroughly tested all over the world, clearly it repays the effort needed to study what she had to say and, if possible, to visit firsthand a school in which the method she developed is being successfully implemented.