Early + Often = Forever

I began my education career as a Montessori teacher of 3-, 4-, and 5-year-olds prior to my tenure at WMS. I had selected Montessori education for my children, liked what I saw, and when given the opportunity to take a teacher education course and intern in a classroom, I accepted. After being in the classroom with these young children for a week, I was transformed. I looked around at children eagerly and happily engaged in learning—something that I remembered as drudgery. I have never forgotten my “aha” moment. I knew that Montessori education would be my passion and that the most important time for learning is in those early years.

Since that time, research on the development of the brain has affirmed the significance of early learning. Jill Skilton, our Director of Communications, researched and prepared the following piece.

Pat Werner,  
Head of School

Through years of research and careful observation, Dr. Maria Montessori declared that education from birth to 6 was the most important in a child’s life. “Children taking in knowledge now retain it for the rest of their life,” she asserted in her book “Absorbent Mind.” She describes the importance and power of a child’s subconscious memory—mneme, as psychologists call it. “The impressions made there,” she explained, “remain engraved as characteristics of the individual.”

Decades later, teachers here at Washington Montessori School can attest to these claims based solely on classroom observations and on the annual graduation speeches recounting early years at WMS. Graduates often fondly recall their “biggest” triumphs—whether it was the sense of accomplishment they felt upon completing the world map or the thousand chain. What they most comment on is how—at the time—these projects seemed so ambitious and how deeply satisfied they felt for having completed such “important work.” We love to
hear that because that is all, our goal—to install an excitement for learning.

Current advances in neuroscience lend solid evidence to what Montessori claimed decades ago and what we observe on a daily basis here at WMS—lessons learned early and repeated often stay with an individual for life. We now know that a 3-year-old brain has 1,000 trillion synapses—adult brains have about half as many. Beginning at age 11, our brains undergo a process neuroscientists call “synaptic pruning.” Connections that have been used regularly become stronger; connections that aren’t are eliminated based on our brain’s “use it or lose it” principle.

Not to say that babies and toddlers should be learning abstract math or computer science. The activities that form the foundation of a Montessori curriculum are extremely important exercises for growing minds. “The development of the senses indeed precedes that of superior intellectual activity,” explained Montessori. Successful students must first hone their senses by being allowed to explore and experience the world around them. “This sense training will prepare the ordered foundation upon which he classes with Matilda, much of the day is spent in the classroom—or the outdoor classroom—working with materials independently and with teacher guidance. A child can choose to sit quietly in the loft looking at books, while other students are working together on the thousand chain in the hallway, while another carefully spoons beans from one small container to another, and another works on initial letter sounds using the sandpaper letters.

Much of the work in Lower School is largely sensorial and practical but, as Montessori explains, all this work will lead to more successful academic learning down the road. A classic example is the knobbed cylinders work, which includes four sets of 10 wooden cylinders of varying dimensions. Using the thumb and the index and middle fingers, a student gently lifts all ten cylinders by the small knobs. Using the same grasp, they replace the cylinders back into the correct slots. This work is an exercise in dimensions and the ability to discriminate subtle differences. It also refines fine motor skills and prepares very young children for the task of writing since the grasp needed to lift the small knobs mimics the grasp needed to hold a pencil.

The knobbed cylinder work also allows a child to explore complex concepts by using their hands, as do all Montessori materials. Montessori believed strongly that hands-on learning was best. She philosophized in *Adult Mind about the hand-intelligence connection citing the handwork of great cultures as her evidence. “We might say that, when man thinks, he thinks and acts with his hands and almost as soon as man appeared on the earth, he left traces of work done by his hands.” She continued, “really it would seem that the purpose of having intelligence was almost to have hands, because if the intelligence of man had merely built up his spoken language in order to communicate with others, nothing would have been left behind when that race of me died out.”

Today we can actually see the brain-hand connection Montessori suggests thanks to the work of Dr. Wilder Penfield who, using electrical probes on conscious patients, created maps of the sensory and motor cortices and the correlating limbs and organs of the body. If we were to draw a human based on his sensory maps, the hands would be disproportionately large. The scientific term for this representation is cortical

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Of course, Lower School students aren’t aware of any of that. They only know how good it feels to fit that last cylinder into place—which could be argued is the ultimate goal of all Montessori materials. “Because of their visibility, the Montessori materials tend to be overemphasized in relation to the other elements in the Montessori method,” explains Paula Polk Lillard in her book *Montessori: A Modern Approach*. “They are not learning equipment in the conventional sense, because their aim is not the external one of teaching children skills or imparting knowledge through ‘correct usage.’ Rather, the aim is an internal one of assisting the child’s self-construction and psychic development.” “When the day arrives that the child is motivated to write, he can do so with a minimum of frustration and anxiety,” explains Lillard. “This principle of indirect preparation enables the child to experience success in his endeavors much more readily and aids the development of self-confidence and initiative.”