

## **The Four Planes of Development**

### **Introduction**

From Aristotle<sup>1</sup> to “No Child Left Behind,” society has struggled with the task of educating children. There are as many ideas as there are champions behind them. But Dr. Montessori did not set out to revolutionize education; what fascinated her was human development - the seemingly miraculous growth and transformation of the human being. How was it possible for a tiny, helpless babe in arms to become a fully integrated member of society? Why do humans, unlike any other creature on earth, have such a long, involved maturation process? Unraveling this mystery would become the key to understanding the natural rhythm of human development. With this understanding, the idea of “education” becomes an “aid to life” - a natural process all children undertake spontaneously, guided through ever evolving stages of development.

Montessori had a profound respect for the child. She marveled at the constructive possibilities within the child, and hope for humankind that resided within each little person. She regarded children as fellow human beings, not as inferiors, and this freed her from the typical adult prejudices towards young children still commonly held today. Eventually, this open-minded and humble attitude allowed her to discover the true function of childhood in the development of the human being. Montessori wrote,

***I have found that in his development, the child passes through certain phases, each of which has its own particular needs. The characteristics of each are so different that the passages from one phase to another have been described by certain psychologists as ‘rebirths’.*** (Montessori, “The Four Planes of Education”, p.1, reprinted in 2004)

Montessori termed the stages from birth to adulthood “**The Four Planes of Development.**” While other developmental theorists focused on one particular aspect of development, or stage of development, Montessori’s view is holistic; it takes into account the social, cognitive, moral, and biological changes of the individual from birth to maturity, around age 24. These stages address the ways that personality, cognitive ability, and behavior change during each distinct phase. It is important that we fully understand this framework because it explains and justifies Montessori’s idea of education as “an aid to life.” Understanding the characteristics and needs of the child at each stage allows the adult to support the natural unfolding of life. The child becomes the active agent, and the adult the support.

The concept of stage theory is not an original idea or recent distinction. Today, as it was in Montessori’s time, it is widely recognized that children pass through distinct periods or phases of development. In chapter 3 of the *Absorbent Mind*, “Periods of Growth,” (Kalakshetra, 9<sup>th</sup> edit.)

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<sup>1</sup>Aristotle - “Consideration must be given to the question, what constitutes education and what is the proper way to be educated...with a view to the virtue, or with a view to the best life...for all these views have won the support of some judges.” The full quote can be found in Miss Stephenson’s lecture. (Margaret Stephenson, “Montessori, An Unfolding – The Child From 3-6”, AMI pamphlet, 1971)

Montessori cites others who researched stage theory: William Stern (1871-1938), a German psychologist and philosopher noted as a pioneer in the field of the psychology of personality and intelligence; American psychologist, Arnold Gesell (1880-1961), a pioneer in the field of child development; and, J.S. Ross, who wrote *Ground Work of Educational Psychology* (1931). In another arena, Austrian neurologist, Sigmund Freud (1856-1939), presented a theory of psycho-sexual developmental stages.

Later stage theorists included the Swiss psychologist, Jean Piaget (1896-1980) who focused on stages of cognitive development in children, and Erik Erickson (1902-1984) who proposed an eight stage theory of psycho-social development that extended through adulthood.

More recently, American psychologist Lawrence Kohlberg extended Piaget's ideas to include stages of moral development. Kieran Egan (born 1942) is a contemporary educational philosopher who has written on issues in education and child development, with an emphasis on the uses of imagination and the intellectual stages that mark different ages from birth to adulthood.

### Overview of the Four Planes of Development

Montessori's stages of development are grouped in six-year cycles – infancy/early childhood from birth to age six, childhood from ages six to 12, adolescence from 12-18, and early adulthood from 18-24. She did not think of these as a rigid chronological pattern, rather, the ages are approximate. Although the child is moving from birth to maturity, the stages should not be thought of as entirely linear; they are more like the tide ebbing and flowing within each plane. Each plane starts anew, bringing forth a new set of characteristics, needs, and behaviors. As a plane reaches its peak, it begins to recede, making way for the beginning of the transition to the next stage. Montessori called this the "constructive rhythm of life." The sensitivities of each stage guide the development and determine the rhythm of movement through the planes. (Camillo Grazzini, "The Four Planes of Development", p. 31, *Namta Journal*, Vol. 29, No. 1, Winter 2004)

Although each plane is distinct, there are parallels between the four planes. The first plane and the third plane, early childhood and adolescence, are thought of as the most dynamic or creative stages. The second and fourth planes are more stable, calm periods of development. The first and second planes form the years of childhood, and the third and fourth planes form the passage into adulthood. The first plane is for the formation, or *creation*, of the individual and the second plane is for the *development* of the individual. The third plane brings another creation, the adult in society and the fourth plane develops that creation.

In addition, each plane contains two sub-phases, each lasting about three years. These sub-phases also parallel the movement of creation and development. In general, the first three years of each plane are for *creation*, and the last three years for *development*, or "*crystallization*." Although the creative phases of the second and fourth planes may not be as dramatic, the personality is still forming, and there is still creation. During the second sub-phase, the last three years of each plane, what has been created is developed and solidified. Think of the process of "crystallization," what

solidifies *must already be there*. The sub-phases emphasize the movement of progression and recession within each plane, and are of particular importance in preparing an environment best suited for the needs of the young person.

The planes of development can also be thought of in terms of a type of metamorphosis. If we think of the appearance, needs, and life of a caterpillar, we see a completely different creature than the butterfly it will later become. The caterpillar crawls along eating leaves, the butterfly flies from flower to flower in search of nectar. We cannot aid the caterpillar by providing a garden full of flowers, nor will the butterfly benefit from green leaves.

The child, too, is quite different at each stage of development, and needs very different conditions in order to thrive. There are identifiable mental and physical characteristics at each plane, and the child's environment must change to respond to those characteristics. Each plane has specific developmental objectives. The child develops certain sensitivities or abilities at each plane in order to meet these objectives.

Although each plane has its own unique characteristics and needs, each plane depends upon the previous one. Just as an acorn sprouts and grows roots, which grow and support the massive oak tree, so does the adult life have roots in the first plane. If the child has not satisfied all of his needs at one stage, he moves into the next with a deficit. This deficit cannot be made up naturally, but only with conscious effort using the characteristics of that plane. We cannot say, "The butterfly looks small, let's feed it more leaves." Some creations, such as learning a language, will never be the same as if they were learned in the optimal developmental plane for that particular ability.

At each plane of development, a particular level of independence is attained. In the first plane, the child strives for functional independence. Dr. Montessori told the story of a young child who actually said to his teacher, "Help me to do it by myself." (Montessori, "Four Planes of Education," p.4, reprinted in 2004) At the second plane, this changes to, "Help me to think for myself," as the child works towards intellectual independence. At the third plane, the adolescent moves toward social/emotional independence; "Help me find myself." At the fourth plane, early adulthood, the young adult strives for economic independence; "Help me to support myself."

As the child moves from one plane to another, the adult must recognize the physical and mental manifestations at each stage and prepare an environment suited to those needs. In this environment, the child can act freely, performing the work necessary for his own self-construction, guided by his own inner laws of development. In the introduction to her book *From Childhood to Adolescence*, (Clio, 2003 edition) Montessori writes,

***My vision of the future is no longer of people taking exams and proceeding on that certification...but of individuals passing from one stage of independence to a higher, by means of their own activity, through their own effort of will, which constitutes the inner evolution of the individual.***

## The First Plane of Development

The first plane of development occurs from birth to around six years of age. It is divided into two sub-planes, (birth-3) and (3-6). At birth, a human baby is virtually helpless, and yet in only a span of two or three years she has gone from basically being inert to running and dancing, from crying and cooing to chattering and singing. This is really quite astonishing, when you think about it. The child is not born with a small vocabulary that she just needs to build upon; she actually *creates* language – whatever language she hears. The newborn is not able to stand or walk a little bit and needs only to practice, she must *create* movement by building up her muscles and coordinating motions and balance in order to roll over, sit, and crawl. At this stage, **“it is not a question of development, but of creation from nothing”** (Montessori, *Education for a New World*, “Periods and the Nature of the Absorbent Mind,” p. 16, Kalakshetra, 6<sup>th</sup> edition) It is even more astonishing when we consider that from birth to around age three, the child is not *conscious* of learning anything.

Montessori refers to child in this first sub-plane, from birth to around age 3, as the *“Unconscious Creator.”* During this most important period of life, the child is not conscious of learning, but creates the person she is to become. She remembers little of this time, and yet what happens during these early years becomes part of her forever. She has a **“type of mentality that is unapproachable by the adult, who can exercise no influence on it.”** (Montessori, *Education for a New World*, “Periods and the Nature of the Absorbent Mind,” p.14, Kalakshetra, 6<sup>th</sup> edition) Her mother does not “teach” her baby how to walk and speak; the baby independently develops the mental and physical powers for language, movement, and sensory perceptions. She waves her limbs and puts her fist in her mouth before she can move intentionally. She intently studies the human face and listens to the sounds of speech, and then begins to babble and coo. She experiences tastes and smells before she has words to describe these ideas. When these separate components are complete, she begins to coordinate these independent skills into a unified function. It is not unlike the period in the womb when the physical organs grew independently and then began to work in harmony. This is the **creative** period of the first plane.

At around age three the child becomes what Montessori called the **“Conscious Worker.”** The child is able to interact with his environment consciously and deliberately. He begins to develop self-mastery and self-control. He is able to put to use the abilities he has been constructing unconsciously. He is *aware* of his work. His work is joyful, purposeful activity; he is always busy. His hand is the instrument of his mind, and he is busy perfecting and enriching the powers created in his first years of life. This is the period of **crystallization** in the first plane. (Montessori, *The Absorbent Mind*, “From Unconscious Creator to Conscious Worker,” pp.164-167, Kalakshetra, 9<sup>th</sup> edition)

In order to accomplish this remarkable self-construction, the child possesses a type of mind vastly different from our own. Montessori called this special type of mind the **“Absorbent Mind,”** because the child effortlessly takes in, or *absorbs*, sensory information and experiences from the environment. It was this quality that particularly captivated Dr. Montessori. It seemed miraculous to her that very young children, living simply and joyously, could learn and orient themselves to complex systems without any teaching, - just by *living*. Today, through brain imaging, we can see

how the child's brain is physically different, and we will examine brain development more thoroughly in the weeks to come. We adults need only to think about how difficult it is to learn a foreign language to realize that we no longer possess an "absorbent mind." We now learn quite differently.

Because the sensory information and experiences that the child takes in are so essential for his self-construction, nature gives the child what Montessori calls "**sensitive periods.**" Sensitive periods are windows of time when the young child is particularly drawn towards a certain aspect of development. The sensitive periods help focus the young child's constructive energies to what will most aid her development at that particular time.

When we consider how to aid this life that is unfolding during the first years, we begin by providing an environment in which the baby feels safe, secure, and loved. Generally, this means a home environment with a consistent caregiver. The baby's life must be calm, peaceful and allow for appropriate levels of exploration, both indoors and out of doors. The baby should interact with a small circle of family and close friends, so that he may develop trusting relationships with people, but not be overwhelmed.

Remember that the baby needs to explore and experience the world directly, through his senses, in order to develop as nature guides him to do. Most importantly, he needs to be present and a part of the normal, everyday life around him. His family must provide safe limits to his environment to facilitate his growing independence and exploration. The little child needs freedom to move and to use his hands to explore. He needs a rich environment because he absorbs everything around him through his senses. He needs opportunities for communication and exposure to language. He needs to be able to exercise simple choices and have opportunities to act for himself.

Think of a baby sitting in the grass...he is feeling the cool, damp grass, perhaps a breeze dusting his skin, seeing the bright green color, listening to the sounds around him, probably grabbing a handful of grass and putting it in his mouth, making a face... Perhaps his mother smiles and says, "Yes, that's grass," and gently removes the strands from his outstretched tongue and hand... The baby is receiving sensory input from the environment and coordinating his desire and muscles to grab that grass and get it into his mouth. This seems simple and ordinary but it is essential for his development. Montessori wrote, "**The ego, organizing and co-ordinating, is bringing his inner psyche and his organs for expression into unity by means of continual integrative experiences. It is, therefore, important that the child himself, acting spontaneously, should choose and execute his acts.**" (Montessori, *The Secret of Childhood*, "The Hand and the Brain," p.81, Orient Longman, 2006)

A friend of mine tells the story of how he and his wife, a Montessori teacher, arranged it so that he would stay home with their little daughter during the day while his wife continued teaching. They were committed to providing the ideal environment for their little child, and so she was involved in everything with her dad during the day; she helped with cooking, gardening, folding laundry... and every day they walked to the park. When she was around 2 1/2, her dad noticed a change in her. When they went to the park, she would look with excitement and longing at the other children and

whisper “Kids!” Her father knew that now she needed something he couldn’t provide for her at home: social interaction with other little children.

At around three years, the young child is ready to expand her environment. This is the time when she enters the Children’s House and continues her work in the company of new adults and children with whom she will form trusting relationships. The family continues to be of primary importance, but now she can continue to work and achieve independence within a larger social context. This new environment is designed especially for this work; everything is proportionate to the size and intelligence of the children. (Montessori, “Four Planes of Education”, p.2, reprinted in 2004)

As the first plane of development draws to a close, we should see a child who is confident, capable, and independent. He has command over his physical body and can exercise the self-control to make choices and the skills necessary to act on them. He has mastered his language and can use it in a socially relevant way. He has adapted to his particular time and place; he understands the nuances of his culture. He has developed and refined all five senses and uses them to build his intellect by ordering and classifying information gathered. He has united his physical and mental capabilities in service of his development, or self-creation.

Throughout this labor of life, in bringing his very self into being, it is love that unites the child. Not love in the common, emotional sense of the word, but a love that fills the consciousness of the child. This love is the spiritual energy that accompanies his self-construction, and it brings liveliness and joy to the child because he is free to do what his deepest nature guides him to do. (Montessori, *The Secret of Childhood*, “Intelligence of Love,” p. 98, Orient Longman, 2006)

### **The Second Plane of Development – Ages 6-12**

But, the story isn’t over. The years from ages six to twelve, the second plane of development, are a relatively calm and stable period. There is a great deal of intellectual work that takes place but not the intense amount of physical and mental growth that took place in the first plane. It’s rather ironic that the child has just passed through an intense, dynamic period of development and taught himself an incredible body of knowledge, but only at around six years of age does society say, “Okay, now you are educable.” Society does recognize that a change is taking place within the child for there are physical markers that clearly distinguish the transition into the second plane. The child’s baby teeth begin to fall out and are replaced by large, strong teeth. The soft, curly hair becomes darker, straighter, and coarser. The children lose their baby fat and become awkward and lanky. They are physically healthier and stronger, and have great stamina. (Montessori, “Four Planes of Education,” p.6, reprinted in 2004)

There are psychological changes as well. The sweet character of the little child becomes frank, direct, and sometimes downright rude. The intelligence they have built up becomes directed outward, and the children want to know the reason behind things. The question they asked in the first plane was, “What is it?” But now they ask, “Why is it?” “Why do these things happen?” “What if they don’t happen?”

These changes are often misread. It is not that the child is now intelligent enough to learn; rather, the child's mind is now something that adults can understand, approach, and influence. For as the first plane of development wanes, so does the special power of the absorbent mind. The child can no longer effortlessly *absorb* information in his environment; he must make a conscious effort to learn new material. Now the child learns in the same manner as adults - with one important exception; the child is still *driven by his very nature to learn, to develop*. There is an unconscious desire, or sensitivity to learn and grow because the child is not yet complete; so enters the second stage of childhood.

Think of the musical form of the sonata. In the first section, musical themes are introduced and presented. In the development section of the sonata, these early themes are elaborated rhythmically and melodically. In the first plane of development, the child "presented" himself, and now during the second plane, all of the ideas introduced can be explored and varied, adding to the complexity of the personality, and building up what the child understands about his world and his place in it.

The child's "absorbent mind" gradually changes to a "reasoning mind." His goal changes from functional independence to intellectual independence. The child is exploring all sides of issues. He wants to understand things for himself, not just accept facts as facts. He wants to use his own rationale, his own judgment and make his own decisions - which are generally different than those of his teachers and parents!

As the child begins to think and rationalize more independently, he also wants more independence from his family. He acquires a certain "toughness," and wants to venture out past the security of his family. His friends become ever more important, and there is a tendency towards "hero worship." Second plane children often form clubs and join organizations as they begin to find their identity as separate from their family.

Because her developmental nature is driving her to seek out knowledge, the child is intensely interested in learning about everything. Just as the first plane of development was for absorbing the environment through the senses, the second plane is for understanding how all of the components in the world work together. Montessori used the phrase, "the acquisition of culture" but she was not referring to "the arts." She wanted the young child to be introduced to the human culture, the whole of the universe: sciences, history, music, mathematics, everything that was included in human culture. She believed that if ideas as grand as the universe were introduced to the child, his interest, admiration, and wonder would propel him to want to learn even more. Montessori called her plan for the second plane child "Cosmic Education." This is the period when ***"the child's mind is like a fertile field, ready to receive what will germinate into culture."*** We sow as many seeds of interest as possible, for,

***There is no limit to what must be offered to the child...all factors of culture may be introduced to the six-year-old; not in a syllabus to be imposed upon him, or with exactitude of detail, but in the broadcasting of the maximum number of seeds of interest. These will be held lightly in the mind, but will be capable of later germination, as the will***

**becomes more directed.** (Montessori, *To Educate the Human Potential*, “The Six Year Old Confronted With the Cosmic Plan,” p. 5, Kalakshetra, 6<sup>th</sup> edition, 1985)

In the first plane of development, the child uses her senses to explore concrete aspects of the world. She actually holds a piece of silk fabric in her hand and feels that it is “smooth.” But in the second plane, the child does not rely solely on her senses; she uses her **imagination** and ability to abstract to explore with her mind. She might wonder, “Where does silk come from?” Through her imagination, she might travel back in time to ancient China and envision a silk worm spinning its cocoon. She can imagine how that first person might have said, “I would like to make a cloth as soft and beautiful as that silky cocoon.” In this way, the second plane child uses her powers of imagination and abstraction to mentally explore the universe - past, present, and future. Her intellectual capacity is enormous and she is driven by her quest for intellectual independence. Her request of the adult is, “Help me think for myself.”

Because the second plane child is so driven to learn, he is delighted by “**big work**.” Sometimes “big work” means a long division problem that stretches to 15 pieces of graph paper (the children laugh when they say “loooooong division”); sometimes “big work” might be a report on animals - *all* the animals in the world, or *all* of the micro-organisms that live in a single drop of water; and sometimes “big work” means, “big mess”- a huge paper-mache model of a volcano that really erupts! The children’s organization is **internal**, so while there may seem to be gross disorder in their work space, they know exactly where everything is and who is doing what.

Another equally important aspect to the child’s work is **social and moral development**. The child is intensely interested in the concepts of **justice**, fairness and has a keen awareness of injustice. Montessori tells the story of an interesting experience she had with a small goat in the garden at one of her schools. She tells how she loved to watch the goat stretch up on its hind legs to reach the leaves of trees. One day she held a handful of grass above the goat’s head to see how high he could reach. A seven-year old saw what she was doing and remarked about how cruel she was. The boy came over and held up the goat’s front legs to support it so that it could get the grass without getting too tired. (Montessori, “The Four Planes of Education”, p.10, reprinted 2004)

The second plane child wants to create his own value systems and understand things on his own terms. He wants to work and play with others in a **group** but the group wants to create their own structure and rules. Elementary Montessori teachers often remark that at recess the children are more interested in arguing and debating over the rules of the game than actually playing the game. The children learn that becoming a member of a group requires a commitment from each individual to the group, and in order to be part of the group, each member must freely choose to obey the rules or principles. (Montessori, *From Childhood to Adolescence*, “The Moral Characteristics of the Child,” p. 8-9, Clio, 2003)

**“Knowledge and social experience must be acquired at one and the same time.”** To do one without the other is like trying to walk on one foot, thinking that walking on two feet would be twice as difficult. (Montessori, *From Childhood to Adolescence*, “The Needs of the Child,” p.13, Clio, 2003) It is difficult to practice social relations if we are only working from the imagination and the

abstract, and so the child's intellectual work is always within a social context. Remember that the hand is the instrument of the mind, and work of the hand fixes the child's attention on the task, so didactic materials are given as an aid to the imagination and the abstract mind. Lessons are given in small groups, and the children are expected to continue the work together after the teacher has presented the initial concept and shown how the material can be used.

Lessons are often followed by "going out" into society to see how these ideas or skills are applied in the greater world. The classroom itself is too small to contain the ideas and imagination of the child, so "going out" provides a safe exploration into the adult world. A study of the history of coffee might include a "going out" to a coffee roasting plant and interviewing a coffee roaster. A lesson on leaf venation might be followed by a visit to a plant nursery to look for other leaves with that particular characteristic.

Montessori wrote in to *Educate the Human Potential*, "**We shall walk together on this path of life, for all things are part of the universe, and are connected with each other to form one whole unity.**" (Montessori, "The Six Year Old Confronted with the Cosmic Plan," p. 8, Kalakshetra, 1985)

When social, moral, and intellectual work is united through the exploration of the universe, there arises in the child a profound sense of wonder and admiration for the interconnectedness of all life. This leads to the development of a sense of responsibility, as the child begins to wonder, "Who am I?" and, "What will be my contribution to this shared life?" This is the developmental task of the second plane.

### The Third Plane of Development - Ages 12-18

Following the calm, stable period of intellectual growth and responsibility in the second plane comes another period of instability and creation. The third plane of development brings another "rebirth", but this time it is not the birth of an *individual*, but the birth of *social man*. Puberty marks the physical change from childhood to adulthood, but there is also a psychological change from the child in the family to the adult in society. This is the time, says Montessori, "**When the social man is created but has not yet reached full development.**" (Montessori, *From Childhood to Adolescence*, "Appendix A," p. 63, Clío, 2003)

The physical changes that accompany puberty are rapid and dramatic, second only to the years from birth to three. The adolescent needs more sleep and his sleep rhythms change.<sup>2</sup> He is more susceptible to illness and often complains of "growing pains" and general weakness. (Montessori, *From Childhood to Adolescence*, "Appendix A," p. 63, Clío, 2003)

Even more interesting are the hidden physical changes in the brain that are coming to light with current brain research. Using MRI technology, researchers are able to prove that certain areas of

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<sup>2</sup> For more information of adolescent sleep patterns, see Mary Carskadon, a professor of psychiatry and human behavior at Brown University and director of sleep research at E.P. Bradley Hospital in Providence, R.I. Carskadon is also the editor of the book, *Adolescent Sleep Patterns: Biological, Social, and Psychological Influences*.

the brain grow and change during adolescence. The prefrontal cortex, located behind the forehead, controls **planning, working memory, organization, and modulating mood**. This part of the brain is not fully developed until well into early adulthood. In fact, what we are seeing is an “exuberance” of synaptic growth, second only to the amazing synaptic growth taking place between birth and three! It is this exuberance, or over production of synapses that causes the adolescent brain to function so inefficiently. As experience shapes the growth and prunes less efficient pathways, the prefrontal cortex matures, and teenagers are able to reason better, use better judgment, and exhibit better impulse control. In fact, this area of the brain has been dubbed “the area of sober second thought.”<sup>3</sup> (Dr. Jay Giedd, Frontline, “Inside the Teenage Brain,” 2002)

The cerebellum, located in the back of the head above the neck, also changes during adolescence. This area of the brain is connected with processing higher-level mental tasks, and so affects how teens are able to navigate social complexities as well as perform academically. (Dr. Jay Giedd, Frontline, “Inside the Teenage Brain,” 2002)

Psychologically, the adolescent is highly unstable and experiences mood swings, violent emotions, doubts and hesitations. Adolescents become very sensitive to perceived criticism, ridicule, and humiliation. There is a decrease in intellectual ability, and they have difficulty concentrating. (Montessori, *From Childhood to Adolescence*, “Appendix A,” p. 63, Clio, 2003)

What this means, is at the time when we would expect an *increase* in responsibility, capability, academic performance, and independence, the adolescent appears to *regress*, and is less able to do what society expects of him than he was in elementary school. Consider too the typical educational setting for middle-school – hundreds of students, challenging classes with a great deal of homework, a different teacher for every subject, pressure to get “good grades,” and increased exposure to negative influences.

Although Dr. Montessori’s work with adolescents is not as fully realized as her work with children in the first and second planes, her answer for the educational environment that would “aid the life” of the young adult in the third plane is just as radical and beautiful as the Casa dei Bambini was for the three year-old. Montessori sought to prepare the adolescent for adult life both socially and economically, in a safe, protected environment. She proposed that we “**abandon the schoolroom and open the gate of life,**” (Montessori, *Education and Peace*, “the Education of the Individual,” p. 111, Clio, 1999) creating a “center for work and study” in the quiet countryside where the whole of daily life would revolve around the changing needs of the adolescents. She believed that “**If young people at a certain point are called upon to take an active part in the life of humanity, they must first feel that they have a great mission to accomplish and prepare themselves for it.**” (Montessori, *Education and Peace*, “Fifth Lecture,” p.70, Clio, 1999)

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<sup>3</sup> Dr. Jay Giedd is a neuroscientist at the National Institute of Mental Health, specializing in brain development of children and adolescents using MRI technology. A particularly interesting study involved 145 typically developing children scanned over a two-year period. In a “Frontline” interview, he said, “If a teen is doing music or sports or academics, those are the cells and connections that will be hardwired. If they’re lying on the couch or playing video games or MTV, those are the cells and connections that are going to survive.”

This preparation would take place during the first half of the third plane – from 12-15 years of age. It would include meaningful physical work on the land, living together in a social group, economic opportunity, and a general education program rich in arts, music, and self-expression. There, the students would work on the land as an introduction to nature and civilization. They would explore a limitless field of historic and scientific studies based on the land. Selling what they produced themselves would introduce the challenges of economic independence and build in the students a sense of self-respect from realizing the monetary value of hard work well done. (Montessori, *From Childhood to Adolescence*, “Appendix A,” p. 68, Clio, 2003)

Montessori called these children the “Erdkinder” - children of the land. They would experience that same path that human civilizations began when people settled on the land and worked together cooperatively. They too would live together in a cooperative social group, and in living together would become responsible to each other and to themselves. Montessori wanted young people to be **“producing, selling and working not in order to learn a trade, but because working means coming into contact with life, participating in the building of the supernature.”**<sup>4</sup> (Montessori, *Education for Peace*, “Fifth Lecture, p.70, Clio, 1999)

Participating in real life, with real consequences, leads the young person to “valorization,” a term Montessori used to describe the internal and external validation of personality. For a healthy, confident entry into adult society, the young person must feel that he can contribute in a meaningful way to the community and see that value reflected back upon himself. This might come from watching his peers enjoy a meal he has helped prepare, mucking out the barn so that the cow has a clean place to stay, performing an original song in front of his friends, or selling all of the garlic flowers they brought to the farmers market. The young person realizes that he can do adult work in the adult world; he can **“succeed in life by his own efforts and on his own merits, and at the same time it would put him in direct contact with the supreme reality of social life.”** (Montessori, *From Childhood to Adolescence*, “Appendix A,” p. 64, Clio, 2003)

With this strength of personality, healthy in mind and spirit, a young person would return to a more traditional educational setting and prepare for the “age of university studies” – the fourth plane of development.

### The Fourth Plane of Development – Ages 18-24

Montessori’s vision for the first and second planes was thoroughly developed and has been implemented all over the world. We have some of her writings about the third plane and many people have been working to develop Montessori environments for adolescents, but about the fourth plane, little is written. This work is yet to be done.

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<sup>4</sup> Montessori explained the term “supernature” in *From Childhood to Adolescence* (Appendix A, p.68) as **“the improvement upon nature not by labor alone, but by the inventiveness of man with the help of the sciences... the labor of civilizations.”**

We can look at the parallels introduced earlier and see that just as the first plane began the construction of the individual and the second plane completed it, so too does the third plane begin the construction of the adult, and the fourth plane complete it. The first two planes form the years of childhood and the last two planes form the passage into adulthood.

The young adult now enters the fourth plane of development. At age 18, society considers her an adult in many ways; indeed, she has left behind childhood and adolescence and is a “formed person.” (Montessori, *From Childhood to Adolescence*, “Appendix C,” p. 90, Clio, 2003) Following the tumultuous changes and creations in the third plane, the fourth plane is another stable period of development and consolidation of the creations formed in adolescence. Physical growth is not yet complete, nor is psychological development crystallized.

As in the passage through all previous planes, her success now depends on how she has developed her potential until this point. If the preceding levels of independence have been realized, she will be able to make her own “choice of action,” aware of her own “possibilities and responsibilities.” Montessori writes, **“Culture and education have no bounds or limits; now man is in a phase in which he must decide for himself how far he can proceed in the culture that belongs to the whole of humanity.”** (Montessori, “Four Planes of Education,” p.14, reprinted in 2004)

This is the time when the young adult must put the individual aside and begin to think in terms of the “mission of humankind.” (Montessori, *From Childhood to Adolescence*, “Appendix C,” p. 90, Clio, 2003) Remember that the fourth plane parallels the second plane, when the child was developing a sense of responsibility. Think back to the questions that the second plane child began to wonder, “Who am I?” “What will I contribute to this world?” Now in the fourth plane, the adult is ready and able to begin making that contribution. In *Education and Peace*, Montessori wrote, “If man understood his mission, and knowingly and wisely obeyed the laws of his own existence, he would suddenly discover that he could change his life and experience joy where today he experiences only great difficulties.” (Montessori, *Education and Peace*, “Supernature and the Single Nation,” p. 96, Clio) Montessori wrote with wonder about the ability of humankind to fully adapt to any conditions and to use the elements of nature to work for our advancement. She recognized that all of life is now connected, and human beings alone can affect change on the environment. She refers to humanity as “a single nation,” and the wealth of this “single nation” is intelligence, the integrated personality, and the unity of all humankind. (Montessori, *Education and Peace*, “Supernature and the Single Nation, Clio)

The foundation has been laid down since the first days of life, the creation of the individual, the long, protracted childhood, and the birth and development of social man. All that has come, or not come, to fruition will determine what kind of new adult will enter the world and what kinds of decisions and changes she will be able to make. The child, the adult, and the society are all integrated, but “the adult is beyond reform.” (Montessori, *To Educate the Human Potential*, “Conclusion,” p.120, Kalakshetra, 6<sup>th</sup> edition) We cannot change the world condition by working with adults; we must begin with the child.

**We must take man himself, take him with patience and confidence, across all the planes of education. We must put everything before him, the school, culture, religion, the world itself. We must help him to develop within himself that which will make him capable of understanding. It is not merely words, it is a labour of education. This will be a preparation for peace, for peace cannot exist without justice and without men endowed with a strong conscience and personality.”**  
(Montessori, “Four Planes of Development,” p.15-16, reprinted 2004)

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