

## Learning: A Mind Process for Adapting and Understanding Life

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A few months ago I was invited to the graduation ceremony for the Deep Run senior Class 2010. My son is a Deep Run student, and I could not miss the event. I am not a big fan of such type of ceremonies, even at my doctorate thesis dissertation I was watching constantly my watch looking for the end and time to leave. Going back to that day, I was captured by the speech of the last speaker, a little old man, wearing a red bow tie, which was silent for the entire manifestation and then, exhorted with a question to the audience. Do you know why the giraffe has a long neck? A grave silence from the entire audience was the answer. Then he began to speak, his voice was deep and sounded distinct as a black tint on a white canvas. That day, he impressed everybody, I think, included me. He spent a good half hour on the subject. I loved his explanation, intriguing and sophisticated, that let me reflect until now about learning and survival.

Let me begin this paper addressing to you the same question. Do you know why the giraffe has a long neck? Think!

It is difficult to believe that an animal like the Giraffe, with its long, spindly legs and a gigantic neck, would be able to stand. But you have to see them to realize that they are amongst the most graceful in the animal kingdom.

Found only in Africa, they were fairly common throughout the dry Savannah regions of the Sahara Desert until recently. The ancient Romans called the giraffes, *Camelopardalis* meaning a camel marked like a leopard.

Almost half of its height is due to its neck; weight 500 to 600 pounds. The legs take up another six feet. What is also interesting is that although their necks are so tall, they are made up of only seven vertebrae, the same as that in a human neck, although each of the bones can be around ten inches (25.4 cm) long. The vertebrae are attached to one another by ball and socket joints, which make the neck very flexible.

The main reason for the giraffe's tall neck is that it helps them to reach foliage that is above the reach of most animals. Although they feed mainly on the Acacia and Combretum trees, giraffe's will eat a variety of different plants depending on what is available. Using their upper lip and pink and black tongue they grab leaves, shoots and flowers from trees [1]. Because of forest tree size changes, the giraffe was always capable to reach for the food, thanks to its long neck that grows accordingly with the tree height. That was the way for them to learn and adapt to the nature earth changes. Such as an ancient animal Giraffes have been used as examples for introducing ideas in evolution, especially illustrate the ideas of Lamarck. Lamarck believed that the giraffe's long neck developed as a result of ancestral giraffe's reaching to browse on the leaves of tall trees [2].

Lamarck is a French scientist, naturalist, interested in evolution and lived during the French Revolution (1774 - 1829). Big time of human value turmoil, revisitation of basic human beliefs, introduction of new scientific and humanist concepts, never used before then: *Liberte', Fraternite', Egalite'* (Freedom, Fraternity, Equality).

In the modern era, Lamarck is primarily remembered for a theory of inheritance of acquired characteristics, called soft inheritance or Lamarckism. However, his idea of soft inheritance was, perhaps, a reflection of the folk wisdom of the time, accepted by many natural

historians. Lamarck's contribution to evolutionary theory consisted of the first truly cohesive theory of evolution, in which an alchemical force drove organisms up a ladder of complexity, and a second environmental force adapted them to local environments through use and disuse of characteristics, differentiating them from other organisms [2]. Lamarck employed several mechanisms as drivers of evolution, drawn from the common knowledge of his day and from his own belief in chemistry pre-Lavoisier. He used these mechanisms to explain the two forces he saw as comprising evolution; a force driving animals from simple to complex forms, and a force adapting animals to their local environments and differentiating them from each other.

He believed that these forces must be explained as a necessary consequence of basic physical principles, favoring a materialistic attitude toward biology [3]. Lamarck referred to a tendency for organisms to become more complex, moving 'up' a ladder of progress.

So progress, a big name, responsible and strictly attached to the human mind evolution. Anyway, Giraffe adaptation to the new environment helped them to survive.

The human beings, adapted to the world not only physically, but also above all, mentally. The process has been much more sophisticated than what we thought but necessary for the purpose. I believe that adaptation is a very reductive function for the human minds, in all these years of our existence; we went further up to the animal Kingdom. We became complex individuals capable to learn and so to evolve up to create cities, societies, schools, spiritual believes, travel in the space, discover cures for diseases, obey and create justice, formulate and apply concepts of democracy and equality, appreciative of the beauty for instance as arts, painting, sculpturing, music...So we became sophisticated, knowledgeable and capable to communicate by gesturing, writing and speaking.

### How and Why?

I may have only a logical answer: I would like to begin with the "learning" complex function of the brain that has long and old roots, in our human history. It does not happen only among the benches and desks of a school. Instead it is a miracle that is repeating itself in the human bodies and minds as a necessity for adapting to the earth dynamics, that is innovating continuously. Without learning the brain would not have evolved, and the humanity would not have achieved to the modern life of the 21<sup>st</sup> Century. Learning implies infinite and complex mind functions, all of them acting in a very sophisticated manner at the point that we still not know all of it.

Many Educators, Philosophers, Psychologists, Teachers, Scientists, have dedicated their lives and effort trying to understand it. Many are the theories resulted and no just one of them may explain or synthesize its complexity. Houle, Lindeman, Rogers, Schon, Lave, Wenger, Mezirow, scientists and studios of Adult Education of the past century, by their work and studies delineated important aspects of Learning especially: inter-relationship between study and action, importance of participation, how learning by doing, which is meaningful, why having democratic environment and nevertheless they have described many type of learning, for instance: reflective, situated, transformative, experiential, and more. In a few words they have tried to answer at the questions why and how we learn!

"The whole of life is learning, therefore education can have no ending. If Education is life, then life is education" [4]. This is an extraordinary quote by Lindeman, it sounds to me as an absolute truth. Nevertheless, intelligence is a big factor, moves the mind to learn and transform knowledge, as a result of the brain necessity. In this other Lindeman quote: "Psychologically speaking, intelligence is the ability to learn, the capacity to solve problems, to utilize knowledge in evolving, continuing accommodations to changing environments" [4], intelligence is a sine qua none for the learning and the evolution.

Lindeman changed very much how to see learning and education. This new venture is called adult education not because it is confined to adults but because adulthood, maturity, defines its limits... In this world of specialists every one will of necessity learn to do his work, and if education of any variety can assist in this and in the further end of helping the worker to see the meaning of his labor, it will be

education of a high order. But adult education more accurately defined begins where vocational education leaves off. Its purpose is to put meaning into the whole of life. Lindeman also added a strong commitment to progressive social action to these qualities [5].

“What kinds of men and women retain alert and inquiring minds throughout the years of their maturity?” [6]. In other words, what motivates the adult learners to continue to seek education and knowledge after their “formal” education? Study is not the act of participation but rather the individual participant’s effort. Thanks to Houle and his book *The Inquiring Mind*, work that offered a very thoughtful provoking questions central to his thinking philosophy, we are introduced to the concept of continuing education. With a great originality he divided the learners in three groups: the goal - oriented, activity - oriented and learning - oriented, all highly involved in learning but with a different purpose. Learning should be open, genuine, inviting, respectful, active, collaborative, and student driven. Learning is for as long as we live, that is a dramatic concept, a revolutionary one, remarkable and full of hope, for the entire humanity, and the world: learning as a life long effort, nobody before him had a such great intuition. Rogers, humanist who was learner-centered, largely develop all these concepts, bringing them at a different level. Carl Rogers, born as a psychologist, introduced strong theories very helpful to understand the human being mind dynamic. Because body and mind are and function as a whole, he has introduced for the first time in the world of Education the concept of freedom to learn. He believed that if you were free and open to experiences, you would more likely be creative and participate productively in the world. Rogers distinguished two types of learning: cognitive (meaningless) and experiential (significant). The former corresponds to academic knowledge such as learning vocabulary or multiplication tables and the latter refers to applied knowledge such as learning about engines in order to repair a car. The key to the distinction is that experiential learning addresses the needs and wants of the learner. Rogers lists these qualities of experiential learning: personal involvement, self-initiated, evaluated by learner, and pervasive effects on learner. He believed that the experience of being understood and valued gives us the freedom to grow. Learning to change, certainly to improve and emancipate.

He would likely have loved all the social networking software since they allow learners to express themselves and participate in their own learning, as well as the new concept of world globalization.

While his work was mainly in psychology, he has deepened and made a significant impact in education, such as in learner-centered and invitational learning [7].

To Rogers, experiential learning is equivalent to personal change and growth. Rogers feels that all human beings have a natural propensity to learn; and the role of the teacher is to facilitate such learning. This includes: setting a positive climate for learning, clarifying the purposes of the learners, organizing and making available as well as sharing feelings and thoughts with learners but not dominating [8].

According to Rogers, learning is facilitated when: the student participates completely in the learning process and has control over its nature and direction, it is primarily based upon direct confrontation with practical, social, personal or research problems and self-evaluation is the principal method of assessing progress or success. Rogers also emphasizes the importance of learning to learn and an openness to change. Roger’s theory of learning evolved as part of the humanistic education movement [8].

He refused the coercive methodology used and abused in school during his era. He has brought concepts on how difficult could be the adolescence or how important is listening deeply the others to better understand their feelings and emotions. How important is to develop tolerance for understanding the others, concepts restored and expanded by Paulo Freire. He well explained that learning could not be without changing the emotional status of a person, communication with others is very important to establish understanding, and at the same time significant experience for learning is both for teachers and learners. The core question of how adults learn has captured the attention of many educators, scientists, and psychologists; from the beginning of the 1900 until our days has not one answer.

Learning is always and whenever. It does not depend by the time, the place and the individual. It is a continuing brain function and a necessity for surviving. One important reflection inspired me by Rogers’s work is on the teaching methodology. Not everyone learn at the

same way, but there are fundamentals that need to be respected for a significative learning to occur, for instance: class atmosphere, let students feel comfortable, not to be judgmental, inviting trust, giving them a freedom of expression, those are the most important priorities. I think, at the same time, they need to be challenged. They do not always need to have the specific assignment description from A to Z. Sometime to improvise in class is an answer. It would stimulate the student attention, and curiosity especially if motivated to learn.

I feel that in high education, the teacher should always try to demand more from the students, to push higher the level of their reflection, analysis, understanding and practical application of notions. I am not suggesting a precise method, but asking open questions or personal interpretation on what has been read, could be an idea. In a few words searching for something original that comes out from the genuine student analysis and reflection. The student should quickly realize that the passive reading is not enough and keeping an appropriate and challenging discussion in class contributes to authentic interpretation and significant learning. Giving always-precise list of material and chapters to read may minimize the students' effort. We could give the impression to circumscribe their learning. At the same time the teacher needs to be opened to a different student interpretation and accept the fact the other fonts have been explored and read, again comes the tolerance concept. We should invite students to learn not to distract them from learning. We want to welcome in learners, not deter them or put up roadblocks.

Moving from Idealism, freethinking, self direct learning, independence... and all the adult education theories, we reach Lave and Schon. Schon tries at his best to find a reason and an answer between theory and practice. The process is not simple, and it is more than sublimation between the two. He believes that Professionals should assume more control and responsibilities behind the technical skills.... he wants them with a long vision over their projects, building for the future, imagining the potential, capable to transform, influence, and solving everyday problems [9].

In reality, I believe, most of them get at that point, but not all the learners. Schon book: *Educating the Reflective Practitioner* contains a straightforward fundamental premise: Professionals who receive real-time coaching and encouragement to think carefully (about what they do while they do it) learn in a more profound way. Perhaps in 1987 people might have found this a revolutionary concept; I don't know. If we knew this in 1987, however, it does not appear to have had a profound impact on our actions in the decade-and-a-half since then. Schon examines how people learn. He uses examples from unusual (for most of us) situations: architecture, music performance, and psychotherapy. I had never given much thought to how people in those professions learn. I had given substantial thought to how information systems designers learn and more recently to how educators learn. My exploration has involved side trips into what we mean by: information versus knowledge; education versus training; learning versus teaching. I found one sentence which represented a clean distillation of my own experience: "I have come to feel that only learning which significantly influences behavior is self-discovered, self-appropriated learning". "We can provide the opportunity, the environment, the encouragement ... but the learning belongs ultimately to the learner" [9]. I like this concept of the master that must make his/her think transparently. How many times I could have received a real help from my instructor giving a real help to a learner in doing so. The other important concept is the one on the trust, if you are unwilling to step into a new experience without knowing ahead of time what it will be like, nobody could help, except trusting the master.

Important is also this other concept that I have learned during his book reading: the cultivation of the capacity to reflect in action (while doing something) and on action (after you have done it) has become an important feature of professional training programs in many disciplines, and its encouragement is seen as a particularly important aspect of the role of the mentor of the beginning professional. Indeed, it can be argued that real reflective practice needs another person as mentor or professional supervisor, who can ask appropriate questions to ensure that the reflection goes somewhere.

Again envision the idea of teacher as a guide, important model in the science of adult learning: "The learner must trust that the more experienced person really wants to help even though the experienced person may lack the capability to make it all perfectly clear at the

outset” [9]. I would like to add that nobody is perfect, and so the teaching ...and learning are continuing reflections on the experience... transforming e retransforming until the acceptable final product...that each of us would like and think be useful for own future application and usage.

Learning is so special, and unique, such an intimate and social experience at the same time, so necessary and dynamic to adapt in any culture, family, school, work, or society. This is not just my own vision. Lave and Wenger have shared that many years ago. The basic argument made by Jean Lave and Etienne Wenger is that communities of practice are everywhere and that we are generally involved in a number of them. Whether that is at work, school, home, or in our civic and leisure interests. In some groups we are core members, in others we are more at the margins. Being alive as human beings means that we are constantly engaged in the pursuit of enterprises of all kinds, from ensuring our physical survival to seeking the pleasures.

As we define these enterprises and engage in their pursuit together, we interact with each other and with the world and we tune our relations with each other and with the world accordingly. In other words, we learn. I do believe in the power of situated learning, and I have stated its power not only by acquaintanceship but because of the continue anesthesia knowledge managed daily in operating room, and simulation scenarios run with my residents at the Simulation Laboratory.

In 2010 we continue to confuse the meaning of knowledge and learning in high education. They are not synonyms, but different status of the mind: one the beginning, and second the possible final product. A knowledgeable instructor does not mean that he is able to know how to do things practically. The combination of the two is powerful and significant: “...learning is a process of participation in communities of practice...” [10]. Until the high education communities will learn the real difference, between the two; no significant changes on the product will be witness. Just an example in my medical discipline Anesthesiology: we continue to select individuals in our specialty based on CV, letters of recommendation, scores and grades, without given the correct weight to the candidates’ maturity, motivation, vocation and potentials. “The situated nature of learning, remembering, and understanding is a central fact...but cognitive theories of knowledge representation and educational practice, in school and in workplace” [10]... have a weak relationship. Learning is a process that takes place in a participation framework, not in an individual mind [10]... I am convinced of it, and so I share it. Do People make meaning out of their experiences? Yes -They absolutely do! They build a way of seeing the world, a way of interpreting what happens to them, and accompanying values, beliefs, and assumptions that determine their behavior. Much of this framework is uncritically absorbed from family, community, and culture. When does transformation start to flash in our mind? The answer is: mostly when something unexpected happens.

My reflection on this is that all life is unexpected, even the most certain relations and realities, as friendship, college, marriage life, having babies.... life per se is a rich resource of unexpected things that should have induced us to reflect.... but each of us arrives to these life experiences with a different luggage of capacities full or missing of perspective and expectations, because of how we are, in terms of culture backgrounds, education, believes, and genetic makeup.

Mezirow is speaking and writing of self direct learner as the one who participates freely in dialogue in order to test perspectives against those of others and modify them accordingly [11]. But not all of us are at this high level of introspection. “Transformative learning is the expansion of consciousness through the transformation of basic worldview and specific capacities of the self; transformative learning is facilitated through consciously directed processes such as appreciatively accessing and receiving the symbolic contents of the unconscious and critically analyzing underlying premises” [12].

An important part of transformative learning is for individuals to change their frames of reference by critically reflecting on their assumptions and beliefs and consciously making and implementing plans that bring about new ways of defining their worlds. Transformative Learning is a complex mind process, and different are the levels of commitment to it, but I believe that most of the human beings

have been throughout. Application of daily transformative learning at work, in class: when we spend time for reflecting on our actions, choices, especially if mistakes and problems have been encountered. An instructor using a formative assessment, on my opinion, inducing a learner in a way of transformative learning...I am continuing refer to Simulation and its power to help others to learn...especially in the moment of the debriefing. I am repeating, "inducing", because Transformative Learning is based on constructivist assumptions, meaning is seen to exist within us, not in external forms. Mezirow and his work let me consider on mind intelligence, and maturity of individuals... different at different age.

I think that a few of us born with the own intrinsic capacity of reflecting on facts. But I believe it could be learned. We reach a range of adulthood when we reflect on things and ask ourselves the why, how, and what...because all these reasons and large variety of personality traits we embrace life and experiences differently with an introverted or extroverted attitude, for instance.

Having different mind mechanisms that will modify, and sometimes change of 360-degree habits, mindset, and meaning prospective... in a few words, we learn different things from similar experience. Transformative Learning is the engine of being and adapting at the best on this world, making us flexible of understanding life diversity, experience interpretations, and let's going behind distortions, prejudices, stereotypes, and unexamined beliefs. Mezirow sees three mind habits: epistemic, sociolinguistic, and psychological, which are overlapping influencing each other, because they are dependent of our personal story. So, at this point how a tolerant person could be judged, not caring or extremely wise? There is not just one answer.

Transformative Learning is a theory of deep learning that goes beyond just content knowledge acquisition, or learning equations, memorizing tax codes or learning historical facts and data. It is a desirable process for adults to learn to think for themselves, through true emancipation from sometimes mindless or unquestioning acceptance of what we have to come to know through our life experience, especially those things that our culture, religions, and personalities may predispose us towards, without our active engagement and questioning of how we know what we know.

My life has been different since I became aware of transformative learning, thanks to the Adult Education Science study, and the reflection on my life experience choices. It has been a great opportunity to read these authors, reflect on their work and ideas helped to start in my brain the engine of critical thinking.

Life has a different scent now, a meaning of appurtenance to my self, and love for who I am. We are different and so peculiar in our thinking and making sense of our life...our entire life is a struggle to accept ourselves and fitting first of all mentally in the environment where we live...a few times we got distracted in our research of ourselves for instance by the pursuing of our goals, study, work, love...general believes but the necessity of feeling well with ourselves in a daily journey and is unconscious. Education is the way to help ourselves in discovering us far deep down, where the truth could be found or hidden. Learning about us is learning about our emotions and thinking processes. It is funny, that while searching for happiness you need to go through pain first. It is not a masochist attitude but maybe this is the way that we are: falling for rising again. Happiness in life is not just a word, but also a way of being, or seeing and have gratitude and appreciation for it: life the greatest gift. For us as adults to truly take ownership of our social roles, and our personal roles, being able to develop this self-authorship goes a long way towards helping our society and world to become a better place through our greater understanding and awareness of the world and issues beyond us, and can help us to improve our role in our lives and those of others.

Learning is joy, fun, discover, progress, discipline, sacrifice, adaptation, passion, growth, emotional changes, creativity, improvisation, so in a few words it is to be alive. Progress in learning did not happen by mistake, but because of the thoughtful endeavor of our wise studious predecessors, and simple men and women who strongly believed in freedom, peace, and democracy, for creating a better world for all of us. Let's celebrate who we are and help others to see and learn about the world with their (own) eyes.

We should never forget that: "The whole of life is learning".

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