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27-28 June 2019

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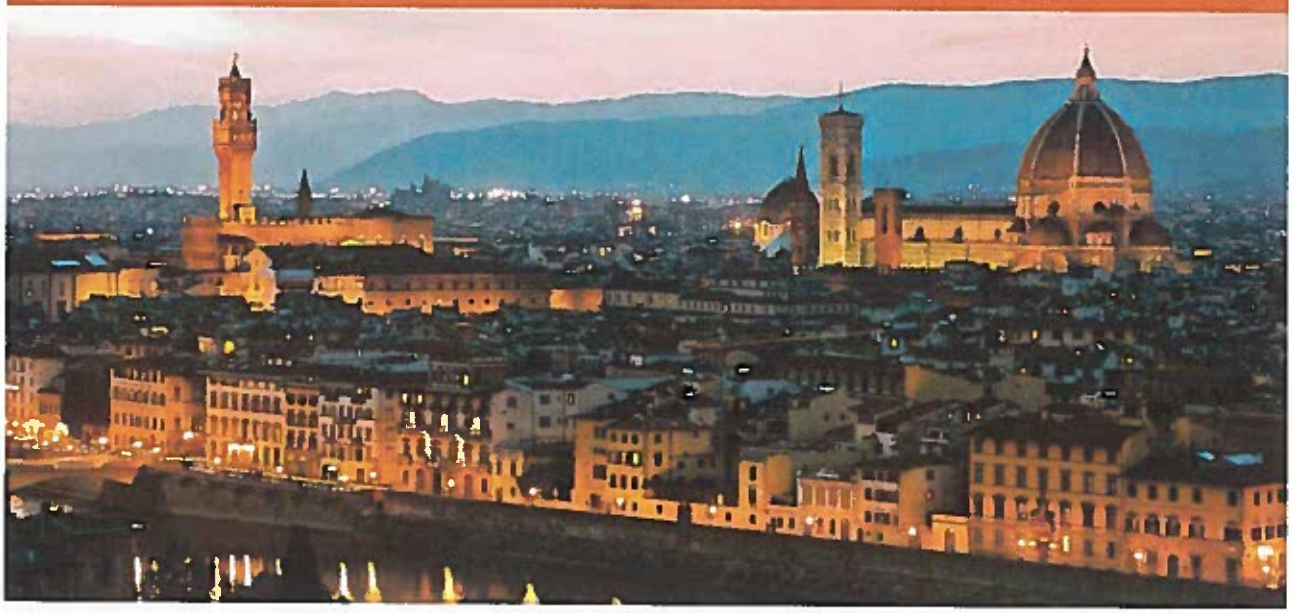

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CONFERENCE PROCEEDINGS

9th International Conference The Future of Education

(Florence, Italy, 27-28 June 2019)

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Biocentric Education: From Rolando Toro Model to the Paradigm 4.0

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Abstract

The education system faces challenges that require reflection and action, particularly with regard to its structure, objectives, methods and models. The transformations that have been mirrored in society since the twentieth century and the speed that technology imposes on it today, stirs the domain of knowledge as well as personal relations. The biocentric model is a system of human development, of organic renewal, of affective reeducation and of relearning of the functions of life, proposed by Rolando Toro (2000). It is based on the assumption and affirmation of the genetic potentials of the individuals and the notion that the way the person integrates and expresses his identity depends on these same potentials as well as on the environment and context, which he calls ecofactors, whether positive and/or negatives. The methodology proposes experiential learning, integrating the totality of the being in its development process, promoting the integration between thinking, feeling and acting. Thus, this is an integrative and preventive theoretical-experiential model that encourages the affective core of learning, from the stimulation of the potentials and the multiple intelligences (Gardner, 1983) by the creation of a context with favorable conditions for the expression of the person and their identity. The biocentric model proposed by Rolando Toro has been validated and reinforced in transversal domains such as emotional intelligence of Humberto Maturana and Francisco J. Varela (1984) and the complex thinking of Edgar Morin (2000), in neuroscience by António Damásio (2017) and studies on the application of the model of biocentric education by Marcus Stuek and Alejandra Villegas (2017). This study will include the presentation of this model of education and theories previously addressed, until the presentation of the paradigm 4.0 for education projected for the future of educators, teachers and students.

Keywords: Biocentric model, education, education 4.0, emotional intelligence

1. Theories of education

Nelson Mandela said that education is the most powerful weapon to change the world. Albert Einstein argued that the unique situation that can affect the way you learn is the education itself. We can recognize that nowadays money makes the world go around, and identify the centrality of the profit economy and the importance of communication for social organization. However, education is essential to know how to make it round. Therefore, it is urgent to face the challenges of Education System, thinking about its policies, objectives, methods and models and make decisions

concerning the future of education and tomorrow needs.

Education and pedagogical models that are followed throughout history were structured in accordance according to social, political, economic and cultural context in which they developed, having always served a purpose. It is in Classical Antiquity that we fan can find the origins of scientific thought, and the thinkers of the School of Miletus were responsible for the turn of myth to reason, consolidated by Socrates, Plato, and Aristotle. Systematic and rational thought, defined by Plato, understood that learning occurs in the individual through reflexive capacities and reason itself. Socrates understood that, in addition to individual thought, learning required dialogue and the act of systematically asking the other to promote discussion and understanding of the subject. For Aristotle, knowledge came from an individual and systematic observation of phenomena and events of observed reality. With the advent of the Middle Age, the proliferation of Christianity, and the subsequent installation of its power, education has as its main objective the dissemination and reinforcement, by repetition, of structuring religious dogmas. These are the so-called "truths of faith" that opposed reflexive thinking based on reason. It is the Descartes' contribution, with the work "The discourse on the method", in XVII century, that gives new and significant contribution to the scientific rationality, when distinguishing from the speculative method to the mathematician-scientific one. This new search for the evidence and observations developed in the Modern Age, conduced to a more active attitude in the construction of knowledge that was affirmed as systematic, self-correcting and provisional.

The context of the Industrial Revolution brings other motivations for learning. It is the need to respond to a mass production that guides the teaching to a practical application, to the identification of efficient processes and productive results, by the repetition of information, behaviours and results, with greater predisposition to certain stimulus and contexts. The influence of the political and economic conjuncture of that period is visible in this model, and although it was criticized in the 1960s, its effect in schools is still noticeable today.

The imposition and immediate transmission of knowledge is followed by constructivism which pedagogical activities are oriented to tasks that stimulate knowledge, from an active attitude of the individual in the process of education.

Learning develops itself from the individual's awareness of their own context, environment and experience, which is what allows them to appropriate and integrate information that, starting from maps or conceptual and mental schemas, will organize themselves into knowledge.

With the challenges inherent to social evolution and the democratization of teaching, a socio-constructivist model emerges that proposes to solve problems through teacher-student cooperation, aiming to achieve results through cooperation strategies, articulated with the content and according to the social context and the historical moment in which they live.

2. Biocentric Education

Rolando Toro Araneda is the creator of Biodanza, by many considered one of the greatest thinkers of our times. Biodanza seeks to promote a way of being, feeling and living closer to the universal laws of life, which confer health and happiness to the human being, integrated into a group, just as happens with all living organisms. Its proposal for a human development model and system invites the integration of genetic *protovivencias* (organic sensations experienced by a baby in the first years of life) and potentials through organic renewal, which is possible through autopoiesis (Maturana and Varela, 1984),

affective re-education and the re-learning of the functions originating in life, based on in the Biocentric Principle (Toro, 2002). It operates through an experiential model, developed in a group, inducing experiences, from the use of music and integrated movements. It stimulates the development of each individual, constituting the structure of their identity, which enables their social, ecological and cosmic interaction.

The Biocentric Principle frames life in a cultural, social, political and educational matrix, restoring in humans the original bond with the species as a biological totality, and with the universe as a cosmic totality (Toro, 2002), and prioritizes actions that allow conservation and life evolution, leading to a healthy lifestyle. Recently, the domain of neuroscience has demonstrated the relationship between emotions and rationality and adaptive social behaviour (Damásio, 2012). For Rolando Toro, it is necessary to link affectivity to the operative functions of intelligence, thought and formal operations to incorporate the learning of the experiential sphere and allow the construction of knowledge centered on life itself.

Biocentric Education emerges as an educational model of transformation and adaptation to the evolution of the species, promoting essential, affective and meaningful learning, which allow the individual to mobilize, through experience, dialogue, action, reflection, the knowledge acquired in concrete situations of his life (Cavalcante; R *et al.*, 2011). From the Rolando Toro Model, Education proposes the development of living lines: to live with quality, to enjoy living, to express oneself freely and creatively, to relate in a healthy way, fostering experiential learning and the development of ecological awareness and ethics (Stueck & Villegas, 2017).

The aim is to invoke a permanent education, generated in the tie between individuals and life, in a civilization walk to this threshold of the twenty-first century, which allows a democratic citizenship and the sustainable development of earth life.

3. Social transformations and education 4.0

The paradigm 4.0 emerges as a result of the transformations and technological developments that have been noticed in the industry with the increasing use, application and recognition of the advantages that the technologies of information and communication bring. Progressively, this term was applied to other areas, serving as a reference to a new trend also in Education. If society experiences structural changes, the answers will be real challenges as a contribution to a reality created and recreated daily. These social transformations reveal themselves in the liquification of the individual and of relationships (Bauman, 2006), reflected in the family structures and in the increasingly self-centered interest of the individual, free from impositions and social structures (Kumar, 1995). The individual defines his identity more by what he consumes (Fetherstone, 2000), than by the feeling of belonging.

Society itself has opened up to the poly, the multi, the macro, the new, the variety and the difference, in the affirmation of the individuality in the whole. This same individualization reached the Teaching in what Morin (2013) sees as one of the greatest weaknesses of academic formation, the division of disciplines, which makes it impossible to understand what exists as part of a whole. This critique of thought, which is too compartmentalised, is strongly criticized insofar as the author considers that information is only pertinent if it is possible to frame it in a context and in the whole, since these are determinants for understanding and the true knowledge implies to become aware of and contact with the whole, reinforcing the notion of belonging and the sense of transcendence, from the possibility of the individual to recognize himself, the other and the whole of which he is also a part.

Thus, Biocentric Education can respond to the main challenges of future education, with a strong affective and emotional component (Damásio, 2017), preparing for tolerance and for affective relationships (Gardner, 1983). In addition, it provides feedback and regulating tools for one-to-one communication through ever-present electronic devices and social networks. The Biocentric approach, contemplating the whole and the life, as the center of knowledge itself, contradicts the tendency of compartmentalized learning and contributes to a notion of reality as a result of the experiential knowledge of the different areas (Toro, 2000). Recognizing genetic potentials, it promotes expression and creativity, autonomy and integration of identity, and elevates the self-esteem of the individual. Neuroscience and neuroeducation identify, as essential to learning, the sense of belonging, the need for autonomy, the need for the expression of emotions, the feeling of happiness, that contribute to the students' involvement in their own process.

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