



## The Brain as a Fundamental Axis in Learning Process



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### Abstract

Since the beginning of humanity, an attempt has been made to explain the way in which man acquires knowledge, the way in which he assimilates, processes and executes it in order to develop the teaching-learning process that people need throughout of his life, which forces to change the learning schemes using new study methodologies, such as neuroscience, which is a discipline that studies the functioning of the brain, the relationship of neurons to the formation of synapses creating immediate responses which transmits to the body voluntarily and involuntarily, in addition to controlling the central and peripheral nervous system with their respective functions. It is necessary to change the traditional scheme and implement new strategies that allow the teacher to venture into neuroscience, in order to individually understand the different learning processes that students do. As some authors of neuroscience say, the brain performs processes of acquisition, storage and evocation of information, which form new knowledge schemes that generate changes in the attitude of the human being, for this reason teachers are responsible for taking advantage of what It is known about the multiple functions of the brain and be clear about the various ways of acquiring knowledge.

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### 1. Introduction

*Brain and Learning.* At present, talking about the teaching and learning processes is a challenge and much more if we take into account the brain as a fundamental axis in the transformation of learning, such an act is only possible when it is possible to understand the advances of neuroscience and its impact on the learning of the human being, this science accompanied by clear and objective regulations, aimed at a learning scheme that favors the student, thus

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promoting a new stereotype in education, which leads to different types of learning in a way effective and lasting, since when referring to learning we must know that certain knowledge has been acquired in innate form thanks to the environment as well as the knowledge acquired in the educational centers and without mentioning the contributions obtained based on the multiple studies on brain functions in the teaching-learning processes of the human being, as for example plo communication between neurons, the genetic component, the empirical component, the environmental component among others (Suparsa *et al.*, 2017; Iriani *et al.*, 2018).

For this reason, the educational authorities, together with the teachers, must venture into the study of neurosciences as a fundamental axis of the student's teaching-learning processes, that is, how the brain learns, the individual characteristics of the students when learning, are great importance to apply strategies according to their needs thus allowing an inclusive education.

## 2. Materials and Methods

At present, the study of the brain together with the learning scheme must be essential in the teaching agenda, for this reason, a qualitative methodology was applied for the development of this subject because it does not perform the experimentation process, the Theoretical Method through the collection of data and information, the Method of Analysis and Synthesis when the information collected was organized and analyzed critically, the Inductive - Deductive Method since the information must be organized from the general to the particular, the Method Analytical-Descriptive, I determine the relevant characteristics and importance in the study of the brain as the main actor of learning.

## 3. Results and Discussions

In the teaching-learning process it is important that the subject acquires the necessary skills and abilities to help him be the main actor of his own learning, through the development of strategies, methodologies, and planning, in order to obtain a change In their educational training, the study of the brain, cognitive processes, and neuroscience are essential topics for the modification of human behavior, for this reason, teachers must present new educational proposals that promote education based on the analysis of the functions of the brain and changing learning paradigms (Macías *et al.*, 2018; Mahendra, 2016).

This behavior modification is seen on a daily basis, as when learning to use an appliance or driving a car, the behavior is different before and after knowing it, as Francisco Mora shows in the changes in behaviors and exposed by Villalobos (2015), who emphasizes behavioral modifications, going through their bodily expressions.

This behavior modification is seen daily, as when you learn to use an appliance or drive a car, the behavior is different before and after knowing, as expressed by Francisco Mora in behavior changes and exposed by Villalobos (2015), who puts emphasis on behavioral modifications, going through their bodily expressions. The change of perspective for the acquisition of new knowledge that achieves significant learning, this knowledge has intimately related to the way in which the brain captures processes and executes the information. For this purpose, the study of neurosciences is vital as a pillar of the subject's learning, since this science is responsible for the sensory, motor and integrating part of the brain, which each has its functions, such as receiving stimuli from the brain. Sensory organs, control voluntary and involuntary movements, generate mental activities such as memory and language learning. Figure 1 shows the lobes of the brain, in (A) and in (B) the emotion system.



2012). Teachers must be clear about their role in the educational process so that they motivate the acquisition of new knowledge in learners for this reason they must know the functions of the brain to identify the ways of learning of students.

For this reason, López (2000), affirms the human brain is the best resource to develop theories that try to explain problems and phenomena around the human being. All ideas are born in the brain. Therefore, the pedagogical approaches and the educational standard must be focused on the social and educational reality, highlighting the individual study of learning in order to obtain changes in education, always in order to obtain students capable of solving problems and innovating Knowledge The authors Sloep & Berlanga (2011), express that people have to be educated for the knowledge society requires a different approach to what we are used to, without a doubt in post-initial professional education, but perhaps also in the compulsory initial education. To establish changes in the social stereotype the teacher must be clear about his leading role as a guide for the education of productive people in a changing society, likewise participate in the continuous educational reforms such as workshops, seminars that will direct him to a better academic training and This is achieved based on an innovation program where the teacher prepares and acquires new tools such as knowledge of the brain and its functions in order to determine some problems that arise in schools because with this knowledge the teacher is in the ability to detect any anomaly in students.

For this reason, it is necessary to study the most complex organ of our body. Since this directs all activities and marks our behavior patterns. Thanks to him we don't just breathe, eat and move; We also remember the past and plan the future, and based on these two parameters we establish our present (Bueno & Flores, 2018).

The study of neuroscience helps the teaching work because based on this one can determine the way in which the human being can acquire, store and transform the information, a process that is carried out through external sensations assimilated by the different parts of the brain.

The brain is the most important part of the human body to apprehend reality, it controls all the organs that have a connection with the external physical world (environment). It also allows everyone to have a fairly clear idea of what is going on around them, through their sensory abilities - smell, sight, hearing, taste, and touch (López, 2000). The brain activity is constant and its immediate reaction to situations that arise are emotional, intellectual defense and care, for this reason, its importance should be known to take precautions against possible damage.

The processes carried out by the brain can be studied from different biological, genetic, hereditary, environmental, cultural factors, among others, in order to determine the abilities in the acquisition of new knowledge, which allows it to face problematic situations and reach solutions immediately.

It is reiterative to highlight that the best way to develop the brain is through the resolution of challenging problems, that drives the establishment of dendritic connections that are the neurophysiological basis of learning (Marcano, 2006).

The neuromodulator should study how to "learn to learn" based on problems in what, how, when and where information is obtained, determine how it can be transformed for the development of intellectual abilities and emotional experiences, so it can be to state that you can only learn what you love accompanied by a good learning programming means taking into account the continuous connection between the cortical brain areas (more rational) and the most emotional areas, located in the limbic system. That is, motivation as the name implies, is the motor of learning: all cognitive processes have an emotional basis (Elcarte, 2012), learning is not isolated but cooperative among the means that interact within the teaching-learning processes.

All teachers must be aware of the different forms of learning and the different teaching processes, highlighting existing needs as factors that can intervene in the teaching of students and their social, personal and economic well-being. "To teach well, you need to understand what learning is and know how the brain learns. This involves knowing and understanding what structures are involved in learning, what functions they perform, what is required for their proper functioning (Elcarte, 2012).

Being aware of the ways in which the brain learns is essential along the chain of learning, that is, all the steps that are required to obtain such learning, the way in which the essential knowledge was acquired in the development of learning. a human being, in order to determine what tools were used and the way or way they did it since each individual is able to acquire their learning in a peculiar way dictated by their brain capacity, that is, how neurological connections work at the time of reaching the understanding of any action to be performed. Taking into account that to arrive at an instruction it is necessary to use a number of synchronized conditions such as the functions of the brain in the learning processes, also attaching the surrounding environment, the way in which it interprets the natural conditions and how learning stays in memory to be used at the time they are required again.

Knowledge is wise things, reaching it is essential in the student's training, since their learning is based on the multiple knowledge acquired throughout the educational processes, thus neuroeducation is an advisable alternative to apply, taking into account that based on this, better learning can be achieved, thanks to the events produced by neurons when they associate or interact with each other, for this they extend a number of networks that connect the entire brain mass and achieve a result called Learning based on your effort and with the help of the teacher who is the person who definitely collaborates in this process is an essential way. Table 1 interprets what the authors cited in said investigation interprets.

Table 1  
Results of the resilience measurement

Author	Theme	Year	Interpretation	Result
Bueno y Forès	Iberoamericana de Educación,	2018	Neurodidactics in the classroom: transforming education	For this reason, the study of the most complex organ of our body is of utmost importance, as this is the one in charge of directing the entire nervous system
Elcarte	Neuroscience and Education	2012	Carrying out Good learning programming to achieve a good brain	Connection Brain connections between neurons are the factor that determines the sequences in the
Jensen	Brain and Learning.	2006	Educational competencies and implications for the student's cognitive development and its application in the environment that develops	The social environment is a means where knowledge is acquired in an empirical and meaningful way based on their experiences
López	Brain learning and research	2000	The theory that explains problems and phenomena around the human being	Ideas are born from the brain and this is able to explain phenomena and problems that arose In in everyday life.
Marcano	Review of brain and learning	2006	Neurology explains how the brain intervenes in the resolution of problems	The human being to perform transcendental actions such as problem-solving, performs it through the connections of dendrites between neurons, to obtain as an answer to immediate actions of stimuli.
Menchén	Creative learning and the brain	2018	The brain and the importance of neurons in the formation of intellectual, emotional and creative activities	The process that neurons perform for the management of all the actions of the human body from the involuntary movement to the formation of the reasoning.
Ramírez	Neuroscience and education a look from biology - cultural	2012	The emergence of education from the transformation of the psychic identity change.	The advances in society arise from education through these changes the social scheme product of the knowledge acquired.
Sloep and Berlanga	Learning networks, network learning.	2011	Educate the knowledge of society from initial education.	The education of the human being has its beginnings from the initial education to establish changes within the social system.
Villalobos	Neuroeducation, you	2015	Early stimulation, outside	The relationship that the teacher

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can only learn what you love.

the classroom, allows interrelation with the environment around us.

allows in the classroom between theoretical knowledge and the natural environment stimulates the acquisition of significant knowledge.

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The different authors cited in the research develop concepts based on the importance of brain functions within the teaching-learning processes in educational facilities or outside of them and in the way in which they allow behavioral change as knowledge is acquired, modify or reestablish. Such knowledge has based on the content obtained in the educational instructions and interaction with the environment.

Detailing the role of the brain from its structure, and components highlighting the importance of neurons their synapses for the formation of new knowledge, as well as the study of neuroscience as an internal agent of influence on learning, cognitive processes that have constantly performed so that this is meaningful and permanent for a lifetime.

#### 4. Conclusion

The study of brain functions in teaching-learning processes is essential since as time passes, new generations of students will have different ways of learning, based on their own experiences, skills, abilities and a half around them. However, not without having a guide to provide them with certain innovative tools that catapult them to obtain meaningful training for life, that is, lasting and cognitive learning. For this, education must implement new educational methodologies that include the study of the brain as the main actor in the learning and survival of the subject since it has a very peculiar way of acquiring knowledge in relation to another individual who processes their information in a very different way. Singular, depending in some cases on neurons and their contacts with other neurons in networks that extend along the lobes of the brain.

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The authors declared that they have no competing interest.

#### *Statement of authorship*

The authors have a responsibility for the conception and design of the study. The authors have approved the final article.


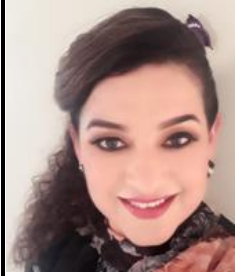

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