The Latency-Amplitude Binomial of Waves Resulting from the Application of Evoked Potentials for the Diagnosis of Dyscalculia

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Abstract : Recent advances in cognitive neuroscience have allowed a step forward in perceiving the processes involved in learning from the point of view of the acquisition of new information or the modification of existing mental content. The evoked potentials technique reveals how basic brain processes interact to achieve adequate and flexible behaviours. The objective of this work, using evoked potentials, is to study if it is possible to distinguish if a patient suffers a specific type of learning disorder to decide the possible therapies to follow. The methodology used, is the analysis of the dynamics of different areas of the brain during a cognitive activity to find the relationships between the different areas analyzed in order to better understand the functioning of neural networks. Also, the latest advances in neuroscience have revealed the existence of different brain activity in the learning process that can be highlighted through the use of non-invasive, innocuous, low-cost and easy-access techniques such as, among others, the evoked potentials that can help to detect early possible neuro-developmental difficulties for their subsequent assessment and cure. From the study of the amplitudes and latencies of the evoked potentials, it is possible to detect brain alterations in the learning process specifically in dyscalculia, to achieve specific corrective measures for the application of personalized psycho pedagogical plans that allow obtaining an optimal integral development of the affected people.

Keywords : dyscalculia, neurodevelopment, evoked potentials, Learning disabilities, neural networks

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