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## For a Reflection in Neuroeducation – Comparative Analysis between Brain-based Learning Method Principles and Learning Strategies and Memories in Higher Education

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### Introduction

Recent neuroscience literature presents interesting and motivating contributions to pedagogical field, in emotion and motivation (Turner, Chandler, & Heffer, 2009, Veiga-Branco, 2011, Fonseca, 2014, 2016, Everaert, Opdecam & Maussen, 2017), attention, learning and memory (Ma et al., 2018). Articles and learning manuals appeared with new conceptions, and from these contributions emerged the proposal of Brain-based learning and educational neuroscience (MB-BL/EN), (Tokuhama-Espinosa, 2008, Willis, 2010, Liu & Chiang, 2014, Ramos, 2014, Edelenbosch et al., 2015) as pedagogical practice hypothesis in Neuroscience, as way of promoting learning and facilitating memories.

**Keywords:** neuroscience, neuroeducations, learning Strategies, Memories, students high school

### Aim and Method

To know the method Brain-based learning and educational neuroscience Principles, Tenets and Guidelines, as standard structures in Neuroeducation and a theoretical conceptual model at the level of higher education, as modus operandi in Andragogy, grounded in Educational Neuroscience.

A qualitative study was carried out through a systematic review of the literature, in Neuroeducation, from three databases, RCAAP, Scielo and Scopus, in articles and theses, published between 2008 and 2018, in English, Spanish language and Portuguese expression

### Discussion and conclusion

Techniques and Strategies selected by students in a personal and intuitive way, corroborated the concepts inherent to 19 of the 22 Neuro-Structural Principles (PNE), as well as 7 of the 12 Standard Principles (PP), (Tenets), and almost (9) of the Neuro-Didactic Guidelines (OND) (Guidelines), presented in the paradigm of brain-based learning. This reflection revealed that this model can be conceptually developed and applied.

### Results

The descriptive analysis of results, presents that sample uses techniques and strategies that insert the principles of the concept that means Neuroeducation, as the following:

1. Most of the sample perceives the area of knowing-making as the field of learning that reveals greater modification with learning;
2. Strategies more related to “Creat long-lasting memories”
  - 2.1. the executive component, personal experiences and demonstrations;
  - 2.2. the "Study Techniques, (out of class) confirms the neurodiversity, the sociability component and the metacognitive activities;
  - 2.3. the stimuli “of attention focus” are related with hedonistic nature (I like), with intrinsic motivation (what I need ) and are linked to the good environment among peers and with the kind of method used in class;
3. The characteristics considered determinants in a competent teacher were: knowledge, the respect for neurodiversity with application of active and multisensory methodologies, ability to stimulate and self-motivate students.

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