The Relevance of Neuroscience in Evaluation of Students in Classroom

Prof. Dr. Diogo O. Souza

Department of Biochemistry, PPG in Science Education, PPG in Biochemistry, Universidade Federal do Rio Grande do Sul (UFRGS), RS, BRAZIL

E-mail: diogo@ufrgs.br or diogo.bioq@gmail.com

In this talk we will discuss the relevance of the brain neurobiology in the student learning/formal evaluation processes in the classroom. It is important to emphasize that the students “are alive” before and after each class. It means that their brains are receiving a massive amount of environmental stimuli, which are processed by the complex cerebral circuitry involved in learning and memory processes. These stimuli interact with previous memories, which adapt to the new stimuli and are adjusted by them. These constant new interactions induce brain plasticity, changing the behavior in such way that a student that leaves the class is not exactly the same that will enter in the next class. At the same time, when students are in the class, what they are learning is not only (even nor the most relevant) what the teacher is trying to teach. These “anonymous” experiences may impact the brain stronger than the teacher’s information. The neurobiological bases of all these interactions are nowadays being more and more revealed; unfortunately this new scientific knowledge is still not integrated in most of the class activities. The idea of this talk is to contribute for the discussion on how important is to incorporate this new scientific information to the current evaluation methods. Importantly, the aim here is not to transform all teachers in neuroscientists, but only motivate the school community for accepting that we learn with the brain and, consequently, the neurobiology of learning and memory should be valorized in formal evaluation of learning. Finally, it is important in terms of evaluation not consider strictly the answers to the question raised in an exam, but what happened within the time between a previous classroom and the time in which the exam is applied.