PROTEIN STRUCTURE: A OBSTACLE TO THE UNDERSTANDING OF BIOCHEMICAL PROCESSES FOR HIGH SCHOOL TEACHERS

Menezes, S. L.; Torres, B. B,
Departamento de Bioquímica, IQ-USP, C.P. 260077 - 05508-900, São Paulo, SP, Brasil.

Biochemistry underlays many subjects taught in high school but most teachers lack enough biochemical bases to explore them properly. To investigate their alternative conceptions we have applied the distance course *Biochemistry of Drugs* to public school teachers, with class load of 30 hours and six modules: Statistics and basic concepts; Marijuana; Tobacco; Inhalants; Alcohol; Legalization vs Criminalization. The conceptions were analyzed through the course records and the most important was the lack of knowledge on the protein chemical structure, which impaired the comprehension of proposed molecular mechanisms (involving receptors, neurotransmitters, enzyme inhibition, etc.). Several interventions promoted the overcoming of many misconceptions as detected by written tests on chemical nature of involved compounds; neurotransmission mechanism and the role of drugs in neurotransmission. Among 63 questions only 10 had less than 50% correct answers. The teachers' performances were impaired by reading difficulties and poor scientific background that difficult their distinction of facts and scientific models from common sense or personal opinion. The teachers' and the course staff evaluations were highly positive. Most of them declared that their knowledge was amplified and that they would recommend this course to colleagues. They also were favorably surprised with the deep level of the topics, the demanded dedication and the fact that the course was addressed to themselves instead of to their students.