HANDS-ON INQUIRY-BASED BIOCHEMISTRY COURSES FOR IMPROVING SCIENTIFIC LITERACY OF SCHOOL TEACHERS AND STUDENTS


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In the last decades, Brazil has reached a prominent position in the world rank of scientific production. Despite this progress, the establishment of a scientific culture in Brazilian society is still challenging. Our group has been offering hands-on inquiry-based courses to primary and secondary students, which aim to introduce them to the scientific method and improve their interest in science. More recently, we started new initiatives focused on the improvement of the scientific literacy of school science teachers. Here we describe two intensive short-term courses designed in different formats. One consists in a discipline offered to a Master Program to school science teachers, in which the main objective was to work with core disciplinary concepts through an active teachers engagement in “doing science”. The discipline, named “Energy transformation in the living organisms”, intends to deal with the main Biochemistry subjects that take part of the high-school science curriculum, namely, fermentation, photosynthesis and cellular respiration processes. The other initiative was developed in Urucuréa, a small community with about 600 residents, located on the banks of the River Arapiuns, in Amazonia region. We trained the local school teachers to act as tutors in the course offered to 40 students of the community, ages 10 to 17. The theme we chose to address was the properties and effects of snakes’ poisons, since poisoning events are a problem with which the local community frequently deal with. Another important point was that we adapted a number of experiments to make them feasible with very limited laboratory resources. Our results show that the activities that we have developed offer real opportunity of scientific training for teachers, future teachers and students and that interventions may allow the incorporation of new methodologies in the classroom.