

A PRACTICE PROJECT TO PREVENT THE COOKBOOK MODEL AS MODUS OPERANDI FOR BIOCHEMISTRY LABORATORY LEARNING

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Laboratory learning is a crucial component of chemistry and biochemistry instruction and should be conceived as a way to develop students' reasoning, technical or practical skills, introducing them into the scientific method principles. Nevertheless, the heavily criticized "expository instruction style", characterized by a cookbook nature, is still the most widespread style of laboratory instruction in our universities. Alternative learning styles based in the inquiry, discovery and problem-based pedagogical approaches, have been reported to promote students' problem solving skills, critical thought and self-confidence development.

We are currently involved in the Educative Innovation Project PIE17-065, funded by University of Malaga, aimed to improve the teaching practice of Biochemistry laboratory to undergraduate students. Based on an enzymatic analysis of glucose in soft-drinks we have developed a laboratory protocol as a part of a full practice project where students must work before and after the lab session, in order to prevent the cookbook model as modus operandi, therefore preventing the situation where the students get a first glimpse of the experiment protocol whereas they put on their lab coat. The learning activities have been designed to move our students from the passive role that characterizes the step-by-step procedures, to an active and critical attitude that starts before and remains after their laboratory session, also minimizing time, space, and equipment resources. Our results have shown that this experiment has improved the learning of both, future biochemists and chemists, which showed a very positive perception to the whole practical project.

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