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PBL BASED ON CHEMISTRY LABORATORIES AT ENGINEERING DEGREE

Abstract:

Until now, the didactics used in the teaching of experimental chemistry contradicts its objective by continuing with a traditional approach and with passive didactic methods for students. Even, in virtual environments, working in the laboratory practices is basically "following a recipe" where the student does not have the opportunity to ask, make decisions or apply to their daily life. In addition to this, it happens that the "recipes" of the laboratories, in general, are repeated frequently, sometimes semester after semester. The recipes have been tested, being known to give good results, and offer no major difficulties, but the recipes do not present uncertainty for the student.

On the other hand, we find the problem of the use of ICT in laboratories, which needs a change of focus. It also requires a change of environment, it is convenient to incorporate measurement processes, analyze data in real time and treat what is observed

It should be remembered that Chemistry is an experimental science, therefore, laboratory works are essential and provide an enrichment for procedures and research that cannot be replaced by virtual laboratories.

For all these reasons, this work focuses on the usefulness of the laboratory as a space with a problem-solving approach, which is, contextualizing problems and fulfilling a series of purposes. According to Zambrano (2007), these purposes are: ability to internalize general and specific knowledge (to know), to acquire technical and procedural skills (to know how), to develop attitudes (to know how to be) and social skills (to know how to live together).

The intention of this article is to show that, including chemistry laboratories self-managed by the students themselves, generates one of the fundamental competences in our changing society, such as self-learning (learning to learn).

To conclude the change of focus in the laboratories allows the student to be empowered since students are responsible for his own learning, so that it contributes to their self-learning; teamwork involving assertive communication. Both oral and written communication, students learned to argue and support his ideas. Therefore, it was revealed that is a training for students and are achieving better student performance.

Keywords:

PBL, Chemistry, Laboratory practices, Engineering Degree

JEL Classification: I23, I21, I29