

What can Students Learn in the Chemistry Laboratory?

M. R. D. T. Figueiredo¹, C. A. N. Viana², M. E. Maia²

¹Departamento de Química da Universidade de Évora

²Departamento de Química e Bioquímica da Faculdade de Ciências da Universidade de Lisboa
Portugal
mtf@uevora.pt

Introduction

Practical work (PW) has had, since long ago, a fundamental role in the education of Chemistry students (Woolnough, 1991; Miguéns & Garrett, 1991). However, doubts have sometimes been raised about its importance as a means for promoting significant learning of Chemistry (Hodson, 1990; 1993).

In order to make PW relevant, it is necessary that it can motivate the students and contribute to the development of a set of skills and competencies that are fundamental in tertiary education (Figueiredo, Viana & Maia, 2001).

The work here presented, developed in that context, is the result of a research project carried out at the University of Évora (Portugal), on the use of PW as an investigative activity of problem solving. This project also had a didactic purpose. It aimed at contributing to the increase in the success of students in chemistry courses included in non-chemistry science degrees, as well as to a revalorization of PW as a privileged strategy for the teaching of chemistry.

Methodology

An initial characterization of students of different courses according to their success in examinations (fig. 1) and also concerning their former preparation (fig.2), done through a questionnaire, including a diagnostic test, gave the basis for the choice of the course in which the experimental intervention should be implemented (Geological Resources Engineering – ERG, the one with lowest results), and of the course used as control group (Hydrologic Resources Engineering – ERH).