Student's learning about acid/base – a case study using data-logging

Liliana C. G. Cruz[1], M.Gabriela T. Cepeda Ribeiro[1]

1) REQUIMTE, Departamento de Química, Faculdade de Ciências da Universidade do Porto.
Rua do Campo Alegre, 687 4169-007 Porto, Portugal.

1. Objective:

The aim of this study was the evaluation of the adequacy of several experiments, using data-logging, to enhance students' learning about acid/base.

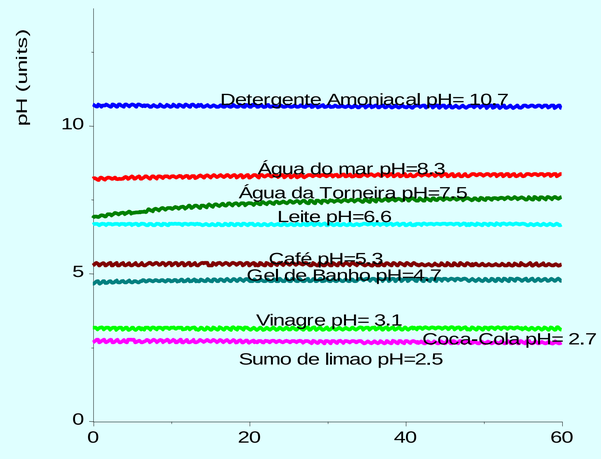
2. Sample:

Twenty two students aged 14 – 16 years old, were involved.

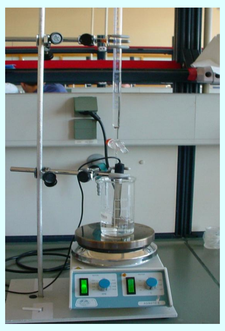
3. Methodology:

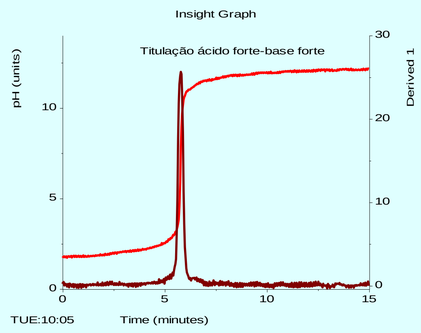
Activities developed:

- Measuring the pH value of several household solutions, using a pH sensor.

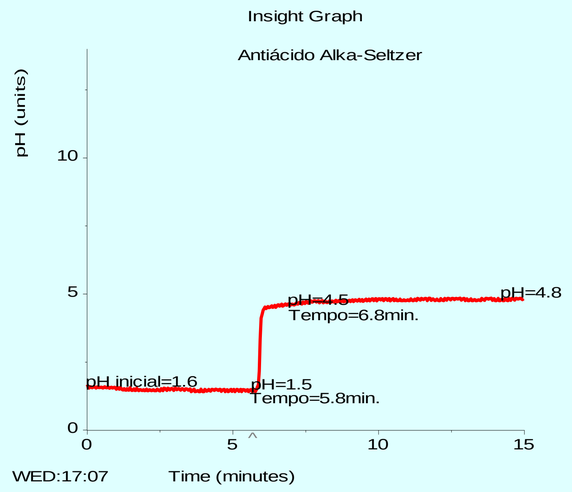


- Titration (strong acid – strong base)





- Studing antacids



Students had to plan investigations, analyze data and to formulate conclusions based on calculations and graphics.

To evaluate students' learning, data were collected using several instruments: questionnaires, observation, group interviews, group discussions and participants' reflections about the work developed.

4. Conclusions:

The results suggested that these experiments strongly enhanced students' understanding of acid/base and improved students' experimental and investigative skills in using ICT in chemical laboratory.