SUCCESSFUL INTEGRATION OF ICT IN CHEMISTRY LESSONS

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ICT Equipment and Use in Walloon Schools

Situation in 2013:

• 1 computer / 7 students (secondary schools)
• IWB: 27% of schools (mainly secondary)
• Laptops and tablets: 8%
• WiFi: 55% of schools

Insufficient material
ICT Equipment and Use in Walloon Schools

Challenges:

• Developing and improving the infrastructure
• Number of connected computers
• Teacher training
• Resource people in schools
• Cooperation between people in digital development
• Digital resources, expertise sharing
Ecole Numérique
Initiative to promote ICT in schools.

- Teacher training
- Evaluation of ICT use in educational context
- Experimentation of new ICT-supported methods
- Tool sharing (diffusion through MOODLE...)
Resource testing in the framework of “Chemistry is All Around Network”
Animations on:

• Balancing chemical equations
• Build an atom
• Isotopes and atomic mass

Tested with:

• 73 secondary school students (14 – 17 year old)
• English immersion classes
Student’s reactions:

“It’s funny to learn because we are playing but we still learn.”

“It’s like a real course but we are the teacher because we do the job.”

“We are easily talking and helping each other, and we can illustrate what we are saying with the website.”
Discovering the Chemical Reaction

Learning sequence created for the project

Associates:

• Experimental approach
• Animations
• Physical and virtual modelling
• IWB

Tested with future science teachers (HELMo, Liège)

Student feedback on Moodle
Discovering the Chemical Reaction

- Video of a “magic trick”
- Students write down and compare preconceptions using the IWB
Discovering the Chemical Reaction

- Hypotheses and models

- Modelling on the IWB
Discovering the Chemical Reaction

- Experimentation
Discovering the Chemical Reaction

- Analysis of the investigation in a table with the macroscopic, microscopic and symbolic levels
Discovering the Chemical Reaction

- Achieving and structuring knowledge
- Evaluation of skills
Discovering the Chemical Reaction

Feedback on Moodle:
- Refreshing the subjects
- Well organised and stimulating
- Helps understand the topic
- IWB and its applications
An experience in England
Chemistry is All Around follow-up: “TICE Sciences” Project
Context

- Working group TICChimie
- Increasing numbers of IWB
- Few adapted resources

New resources needed
Activities (Sept. 2014 – June 2015)

1. Design and creation of teaching sequences
2. Testing in classes
3. Evaluation on Moodle
4. Editing (based on the evaluation)
5. Upload on a website (June 2015)
Thank you for your attention!