USING ITC IN ORDER TO IMPROVE CHEMISTRY LEARNING AT THE UNIVERSITY DEGREES.

María del Mar López Guerrero [(1)], Santiago Rojano Ramos [(2)], Gema López Guerrero [(3)]

[(1)]Department of Analytical Chemistry, Faculty of Science, University of Málaga.
[(2)]Department of Didactic of Experimental Sciences, Faculty of Education Sciences, University of Málaga.
[(3)]Department of Didactic and School Organization, Faculty of Education Sciences, University of Málaga.

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Introduction. The teaching of chemistry has several difficulties for several reasons: the lack of interest and motivation in students and little connection between the curriculum of compulsory education and university. This causes a negative idea about Chemistry. For these reasons, it was thought that the use of ICTs could be very beneficial for chemistry teaching and learning. In general, ICT can help us to increase participation of students in the area and would improve the direct intervention of the students which motivates their learning. On the other hand, every students have smartphone and internet access, therefore they are able to take photos, search on internet and download videos.

One experience consists of developing a blog, where the students are responsible for the design, development and inclusion of material in the blog. Thus, they are developing the blog and are enhanced since they are looking for materials to include in the blog.

On the other hand, it was identified student misconceptions and misinterpretation for Mechanical Engineering students as they are attempting to interpret and explain the chemical processes. Oxidation-reduction reactions were identified the most difficult concept. The objective has been to carry out a proposal for teaching contents of chemistry using didactic resources for virtual environment, the use of a simulation that lets students to construct useful mental models.

Experimental – The first experience was based in a comparative test of 10 questions related with the topics of the subject. Two groups of 60 students of Science education have participated. A group of students, who participated, designed and entered the blog and another group that was not involved in the blog.
And the second experience, the survey technique was used. The sample consisted of 50 volunteer students from the first course of Mechanical Engineer degree. Both experiences took place during the course 2013/14.

Results. The blog study demonstrated that developing blogs by students significantly increased the number scientifically acceptable ideas in student´s conceptions of science.

The use of animation has been demonstrated that showing animations to students, allows them to practise, so significantly increased the number of scientifically acceptable ideas in student’s conceptions of redox reactions.

Conclusion. The use of either the blog or the simulation can be helpful in improving problem solving. This encourages students to develop new ideas about science, and allow them to create a memory from viewing animations, leading to confirmation or modification of the existing mental model.