

## **Difficulty of Chemistry concepts. How to make easy the learning. Gamification**

**M.M. López Guerrero<sup>1</sup>, Maria Isabel Santacruz Cruz<sup>2</sup>, Antonia Infantes Molina<sup>2</sup>,  
María Emilia Bertolo Pardo<sup>4</sup>, María José Bentabol Manzanares<sup>2</sup>, Maria Angeles  
Gomez de la Torre<sup>2</sup>, Elisa Vereda Alonso<sup>1</sup>, María Moreno Oliva<sup>3</sup>, Ramón Moreno  
Tost<sup>2</sup>, José González Rodríguez<sup>5</sup>**

*1University of Málaga, Faculty of Sciences, Department of Analytical Chemistry, Málaga, Spain*

*2University of Málaga, Faculty of Sciences, Department of Inorganic Chemistry, Málaga, Spain.*

*3University of Málaga, Faculty of Sciences, Department of Physical Chemistry, Málaga, Spain*

*4School of Psychology and Life Sciences Canterbury Christ Church University*

*5School of Chemistry, University of Lincoln.*

### **Abstract**

Chemistry is considered highly complex by students. To achieve meaningful learning, it is necessary to show its usefulness in daily life, in the development of a country and a society. Learning will be significant when the student can incorporate it into the structures of prior knowledge that they possess, acquiring significance for them. In this specific case, the research aims to contribute to the improvement of the teaching-learning processes of Chemistry in the studies of the Degree in Engineering.

In this work we studied how gamification facilitates the learning of our students. For this reason, the research group has used an Escape Room based on the topics of our subject. The Escape Room is called Was it a murder or a suicide? They will find material in the classroom, and they will have to decide if it was a murder.

In the end, the students who participate in these activities have increased their calcification in the matter by around 1-2 points. And in the final questionnaire, they have said that they would like to use gamification in other subjects. Some students told us that it was their first time taking an exam and that it was fun.

**Keywords:** Chemistry, Learning, Engineering Degree, University, Escape Room