7th World Conference on Research in Education

23 - 25 February 2024 Milan, Italy

Meaningful learning through gamification in the Chemistry course at various degrees of the University of Malaga: The use of the escape room as gamification activity

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Abstract

Chemistry is considered highly complex by students. To achieve meaningful learning, it is necessary to demonstrate its utility in everyday life, in the development of a country, and in society. Learning becomes meaningful when students successfully integrate it into their existing knowledge structures, giving it personal significance. In this study, we explore how gamification facilitates the learning experience for our students. Therefore, our research group has implemented an Escape Room based on the topics covered in our course. The Escape Room, titled 'Was it a Murder or a Suicide?' has proven effective in enhancing students' grades by approximately 1-2 points. In the final questionnaire, participants expressed their interest in incorporating gamification into other subjects. Some students mentioned that it was the first time they found an exam enjoyable. These questionnaires were conducted across four engineering degrees at UMA, yielding very similar responses. Most of the participants view the concept of gamification-based exams favourably, highlighting the positive motivation it instils in students.

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