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Computer-based, Jeopardy^{TM}-like game in general chemistry for engineering majors[1] S.S. LING, F. SAFFRE, M. KADADHA, D.L. GATER, A.F. ISAKOVIC, KUSTAR - Khalifa University — We report on the design of Jeopardy^{TM}-like computer game for enhancement of learning of general chemistry for engineering majors. While we examine several parameters of student achievement and attitude, our primary concern is addressing the motivation of students, which tends to be low in a traditionally run chemistry lectures. The effect of the game-playing is tested by comparing paper-based game quiz, which constitutes a control group, and computer-based game quiz, constituting a treatment group. Computer-based game quizzes are Java^{TM}-based applications that students run once a week in the second part of the last lecture of the week. Overall effectiveness of the semester-long program is measured through pretest-postest conceptual testing of general chemistry. The objective of this research is to determine to what extent this "gamification" of the course delivery and course evaluation processes may be beneficial to the undergraduates' learning of science in general, and chemistry in particular. We present data addressing gender-specific difference in performance, as well as background (pre-college) level of general science and chemistry preparation. We outline the plan how to extend such approach to general physics courses and to modern science driven electives, and we offer live, in-lectures examples of our computer gaming experience.

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S. S. Ling
KUSTAR - Khalifa University

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