

Changing the way science is taught through gamified laboratories - DTU Orbit (09/11/2017)

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A large proportion of high school and college students indicate that they have little interest in science, and many graduate with marginal science competencies. However, laboratory exercises, usually the most engaging part of science courses, tend to be expensive, time consuming and occasionally constrained by safety concerns. Combining gamification elements with simulations may provide an opportunity for great gains in learning effectiveness and motivation of biotech students. An advanced laboratory simulation platform based on mathematical algorithms supporting open-ended investigations was developed and combined with gamification elements such as an immersive 3D universe, storytelling, conversations with fictional characters and a scoring system. Two gamified laboratory simulations were tested: a crime-scene lab and a genetic engineering lab (<http://www.labster.com/biolabs/>). A study testing the crime-scene case in an introductory, college-level, life science course was conducted revealed that a gamified laboratory simulation can significantly increase both learning outcomes and motivation levels when compared with, and particularly when combined with, traditional teaching.

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