

The Effectiveness of Gamified Learning on Student Learning in Computer Science Education: A Systematic Review (2010-2018)

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Abstract : Gamification is defined as the use of game design elements in non-game contexts. The primary purpose of using gamification in an educational context is to engage students in school activities such that their likelihood of completion is increased. But how actually effective is gamification in improving student learning? In order to answer this question, this paper provides a systematic review of prior research studies on gamification in K-12 and university contexts limited to computer science discipline. Unlike other published gamification review works, we specifically analyzed comparison-based studies in quasi-experiment, historical control, and randomization rather than studies with mere anecdotal or phenomenological results. The main purpose for this is to discuss possible causal effects of gamified practices on student performance, behavior change, and perceptual skills following an integrative model. Implications for practice are discussed, along with several suggestions for future research studies.

Keywords : computer science, gamification, learning performance, systematic review

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