

# Evaluating the Impact of SCRUM on Students' Performance in a Project-based Learning Game Development Course

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## Abstract

Project-Based Learning is continuously increasing its popularity as a teaching method. Nowadays, Higher Education Institutions have recognized the advantages of student-centered learning and have started to introduce real-life project scenarios as assessments in order to cultivate both technical and soft skills to the students. Further to the selection of the project scenario, an important component of the teaching strategy in an ICT course is the software methodology that is applied throughout the course. Traditional software development lifecycle and rapid prototyping are typical examples that are often utilized, each one with its own variations and merits. This study discusses SCRUM, a widely used rapid prototyping methodology in the industry, and its application in a game development course. In this study, students were given a few basic tasks to complete, and were asked to populate a product backlog with additional features that serve the purpose of their game concept. Students performance was evaluated through weekly sprints, in which they took responsibility of a number of tasks from the product backlog and complete them within one week. It has been observed that SCRUM has had a positive impact on performance and efficiency in groups that abode well to the structure of SCRUM. The implementation of SCRUM simulates a real-world environment in which the urgency of individual tasks is highlighted, leading to well-enforced team dynamics. The paper describes the effectiveness of SCRUM and its impact on students' performance, detailing the approach taken, and the outcomes based on the student surveys, the scaffolding, and the final products of these projects.

**Keywords:** Game Development, SCRUM, Rapid prototyping

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