

A study on Gamification toward Engineering Students' Engagement in the University Level

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Abstract

Most engineering students may struggle with complicated theories, heavy assignments, lack of motivation and disengagement in the classroom. According to studies, student engagement in the classroom is critical in the learning process. It can increase students' attention and motivate them to practice critical thinking skill. It may also promote positive learning experiences. By this, the learning outcomes in technical understanding and application definitely can be improved. However, how to increase student engagement, particularly for engineering courses in the classroom? Educators are introducing several student-centred teaching methods to replace the traditional direct instruction teaching methods, such as inquiry-based learning, project-based learning, service-based learning and others. This study is to explore the gamification toward the engineering student to increase their engagement in class. A class with 109 students in the second year course of Electrical Engineering Technology (EET) are invited to participate in the study. A gamified learning model with 4 stage games is created in the online platform and participates by the EET students' willingness. This gamified learning model has implemented rank, interactive map and video guide. A survey related to gamification is collected from the EET students who completed the gamified learning model. This survey is mainly to obtain feedback on the gamification experience of the students. The results are generally positive and indicate that gamification can improve engineering student engagement and enjoyment toward the learning process.

Keywords: Gamification, Student's engagement, Engineering courses, Motivation

1. Introduction

Engineering courses usually are emphasising on theoretical concepts and their application. However,