A Proposal of a Catalog of Gamification Patterns: A Way to Improve the Learning Motivation

Jhony Paul Taborda Mosquera, Universidad del Cauca, Popayán, Colombia
Jeferson Arango López, Universidad de Caldas, Manizales, Colombia
César A Collazos, Universidad del Cauca, Popayán, Colombia
Francisco Luis Gutiérrez Vela, Universidad de Granada, Granada, Spain

ABSTRACT

Taking advantage of the advances in mobile technologies, and the new set of applications and games available in the different stores, in this article the authors propose a catalog of gamification patterns that can be implemented un those applications and games. These patterns increase student motivation through its implementation in activities in and out of the classroom with the support of mobile devices and game applications. In addition, the authors carried out an experiment conducted with different groups of students in an educational institution in Colombia to assess its impact on student motivation. The results show the improvement in the motivation for the majority of students that used applications with the proposed patterns. This study contributes to addressing the technological resources of schools towards gamification patterns perspectives to improve the motivation of students in the learning process.

KEYWORDS

Active Learning, Education, Game, Gamification Patterns, Student Motivation

INTRODUCTION

In Colombia, the teaching-learning process shows slow progress in improving the quality of education, causing in some cases the students motivation decreasing to continue learning (Viviar Farfán, 2013). According with the strategic objective contemplated in the “Plan Decenal para la Educación” (Ministerio de Educación Nacional, 2006), which considers the inclusion of training in Science, Technology, Innovation and the use of Information and Communication Technologies (ICT), as fundamental for the improvement of educational activities in Colombia. However, the incorporation of this strategy in the educational system in Latin America has not shown significant results (UNESCO, 2013). In the educational field, there is a research focused on discovering and understanding the impact of technological attitudes and skills in the use of ICT in order to improve the motivation and interest of students, although, the National Government, from the Ministry of Education, has been promoting the massification and use of ICT tools. That is why 74,266 electronic tablets were delivered to educational institutions in Colombia in order to contribute to the improvement of educational quality. What allows schools to support the processes of production, innovation and creativity in students (MinTIC Colombia, 2013); Many teachers fear of these devices or because they...
do not know how they work (Mejía, Giraldo, Castro, & Augusto, 2011). Some others think that the devices do not help their classes, on the contrary, they want to teach with traditional methods, as they learned many years ago. Several teachers confess their fear of using new technologies because they think that they know less than their students (Louis Anais, 2013). Thanks to technology, today some students have access to information outside of educational institutions, while within them the teacher restricts its use by factors such as social networks and information security, which contributes to the decrease in motivation in the learning process (Garzon & Sanz, 2012). Numerous investigations have shown the importance of motivation in learning, without motivation there is no learning (Sedighian & Sedighian, 1996). Specifically, in developing countries like Colombia must seek solutions and adapt to globalization, and to do so they must promote new skills in people, especially those that are in educational processes; strengthen the educational system, motivate and encourage the student to build creatively (Emiro & Bravo, 2011). In education, game-based learning is a motivating factor, as games are often attractive for their rules (Marin-Vega, Alor-Hernández, Zatarain-Cabada, Barron-Estrada, & García-Alcaraz, 2017). For that reason, we want to experiment some features of gamification patterns in a learning process while several month to see the student’s advances. In the learning processes, the games and their elements are part essential to achieve a significant increase in motivation, the group and individual participation, social participation and learning outcomes in different areas and contexts (Sedighian & Sedighian, 1996). also,they can be inserted in formal educational processes as complementary to traditional teaching processes, or even be considered educational materials used for autonomous (formal or informal) learning situations. (Silveira, Mackenzie, & Paulo, 2018). Taking into account games, gamification is defined as the use of game design elements in contexts not related to the game (Deterding et al., 2011), this supports the fact that in some studies gamification has been used to improve student learning (Klopfer, Osterweil, Groff, 2009). Current research like (Balci, Secaur, & Morris, 2018; Davis, Sridharan, Koeppke, Singh, & Boiko, 2018; Ding, Er, & Orey, 2018) show the efficacy of the gamification has not been well-established due to conflicting results of relevant studies. Then, how can we contribute to improve the performance of the students in a classroom? And so, can we demonstrate the efficacy of gamification patterns in the motivational process? That is why, we considered the need to propose a catalog to allowing the design of applications with these patterns. Which can increase the motivation in students to do classroom activities and get better results.

This article is an extension of the work “Gamification Patterns: A Catalog to Enhance the Learning Motivation”, (Arango, Ruiz, Taborda, Guitiérrez, & Collazos, 2017); which was presented at the “V International Congress of Video Games and Education (CIVE’17)”. This document is structured as follows, in section 2, we present the related works in each research field. Section 3 shows details of how the methodology for the research was used. In section 4 shows the execution of the experiment that was performed. Section 5 contains the analysis of the results obtained from the investigation; Finally, the conclusions and future work are presented in section 6.

BACKGROUND

Related Works

There are a lot of examples of the application of gamification in different fields; following we present an analysis of their features and how they work.

In (Domínguez et al., 2013) they created an e-learning learning platform in which they introduced gamification elements. They performed a gamified experience in a course university student using the learning platform and a plugin that they themselves developed for that purpose. In the course, they created optional exercises designed to improve the skills of the students and to obtain better results in the final exams. The exercises could be downloaded from an e-learning platform in PDF format. The authors of the work have created a work plugin that provides the same exercises in a gamified way. The objective of the plugin is to increase the motivation of the student towards the optional
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www.igi-global.com/chapter/faculty-perceptions-participation-distance-education/14408?camid=4v1a