



GAMIFICATION AND SERIOUS GAMES METHODOLOGIES IN EDUCATION

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Introduction



In the last years, researchers as well as different industries have increasingly expanded their focus and interest from pragmatic issues of human-computer interaction, to include aspects like user-experience, emotion, satisfaction and motivation (Deterding, 2011). The purpose of gamification methodology is to drive user engagement, and motivate users to engage an application or service by making it 'fun' and joyful to use.

The other methodology that comprises the human-computer interaction, that include user-experience and motivation are serious games. Different from gamification that use and extract specific game elements in a non- game context, serious games are referred to entertaining tools with a purpose of education, where players cultivate their knowledge and practice their skills through overcoming numerous hindrances during gaming (Juan et al., 2017).

During this research we attempt to answer the following research questions: (1) What are the main purposes and differences between serious games and gamification methodology in education? (2) What are the positive and negative findings in use of serious games in education (3) What are the positive and negative findings in use of gamification methodology in education? (4) In which courses is more effective to apply gamification and serious games methodology? (5) What is the perspective of mentors and students in Albanian universities towards incorporating gamification and serious games in the learning process? This study makes an empirical and theoretical contribution to retailing literature.

Research Methods



In order to answer research questions, we obtained 697 results including 617 articles, 45 reviews, and 35 proceeding papers by searching "Web of Science" (involving four databases, i.e., CCR-EXPANDED, SSCI, ESCI) with the subject "gamification" AND/OR "gamified learning" AND/OR "serious games" AND/OR "education" AND/OR "learning".

The quality of publications was assessed by a three point criterion: (1) quality of research framework for answering research questions; (2) appropriate research methodology applied; (3) reliability of findings. Each of the selected publications was scored based on the above criteria and reviewed by researchers. The purpose of this questionnaire is to give an answer related to the two last research questions (1) courses that are effective to apply gamification methodology; (2) perspective of mentors and students towards incorporating gamification and serious games in the learning process.

Findings



The main difference between these two methodologies is that gamification is just an extra layer that is applied in the non-game context in order to motivate and engage learners, otherwise serious games are real game designed for a specific knowledge or technical skills learning purpose.

The findings in serious games for learning most of them have positive results and support this approach to apply in the education system. Serious game-based learning proved significantly more effective than non-game-based learning. Learners were engaged in serious games significantly longer than the non-game-based learning.

The findings in implementing gamification approach for learning, most of them have positive results and are implemented in the learning process, however there are few downside related gamification. Gamification can constitute a powerful boost to determine them to learn more in a pleasant and satisfied environment. Based on research, it is revealed that a gamified learning environment is positively correlated with a student's grades and performance in the learning process. . Gamification resulted that the effectiveness towards the learners' decrease when applied for long-term because game elements, rewards, do not provide long term satisfaction.

In which of the following fields do you think the implementation of 'Gamification' and 'Serious Games' is most appropriate?

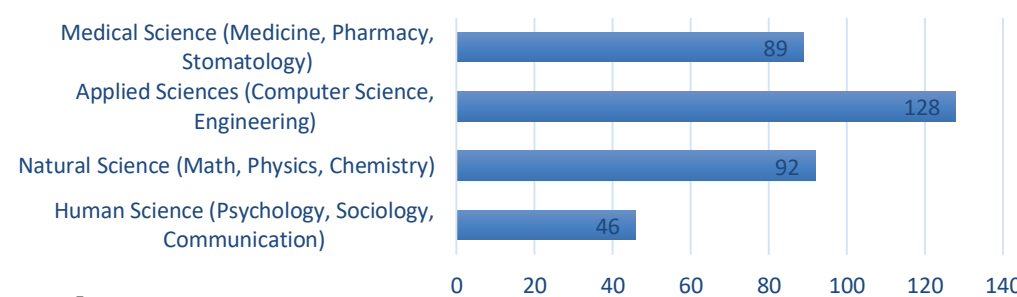


Figure 1

Effectiveness to apply gamification and serious games

Based on the responses collected in the questionnaire we concluded that "Applied Sciences" are the most appropriate courses to implement gamification and serious games methodology. Based on the results of the survey we concluded about the perception of students and mentors towards incorporating these gamified methods in learning process. We concluded that 79 of 207 students and mentors response agree that serious games and gamification could improve performance of students related academic achievement. Related the last research question we can conclude that gamification is more appropriate and easy to implement in the education domain, however serious games are more effective in the long term to keep learners engaged and motivated.

Conclusion



Gamification and serious games are educational innovations that have proved to have a positive effect in the education domain. Researchers often advocate that gamification and serious game's impact is positive due to its novelty, gamified environment, rewards and that it consequently vanishes as the novelty passes. Gamification and serious games have different concepts and purposes (Grangeia et al., 2019). Gamification is just an extra layer that is applied in the non-game context in order to motivate and engage learners, otherwise serious games are real games designed for a specific knowledge or technical skills learning purpose. Based on our research we reveal that both these methods in general have positive effectiveness in the education domain. Furthermore, this research concluded that gamification is more appropriate and easy to implement in the learning process, while serious games are more effective for long term motivation and engagement to learners'. Prospective students and mentors encouraged implementing these methodologies in the learning domain. Ultimately, our conclusion is that gamification and serious games impact positively on students' engagement, motivation, and facilitate the learning process.

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