

RELATIONSHIP BETWEEN PERCEPTIONS AND EXPERIENCES ON THE PERFORMANCE OF STUDENTS IN A SERIOUS GAME

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Summary

The growing interest in the use of digital games for teaching and training resulted in the expansion of the field of game-based learning with many research being carried out on the subject. Some of the studies have aimed to understand the views of students regarding the use of digital games for learning, as it is believed that the views and acceptance of users towards new technologies play a crucial role in ensuring successful learning outcomes (1,2). The outcomes of these studies have generally been positive, with students agreeing that games enhanced learning. However, it is unclear whether there is any relationship between perceptions towards games and gameplay performance in a learning game. Hence, the current study examined the correlations between the experiences and perceptions of engineering students towards learning games, and their performance in a recycling game called Cosmiclean game.

The findings of this study showed that the perceptions of students towards the use of digital games for chemical engineering education are generally positive. However, there was no significant correlation between the gameplay performance of students and their perceptions of learning games. This finding weakens the argument that the perceptions of students of digital game-based learning (DGBL) have a significant impact on performance and learning effectiveness(1,2). The implication of this is that positive perceptions, attitudes, or expressed interest in games may not be sufficient to guarantee that students will use DGBL as expected, which might in turn have negative effects on the expected learning

gains. This study emphasizes the need to also consider other factors when using games for teaching. With significant relationships found between game enjoyment and gameplay performance, it is worth paying better attention to more objectively measurable experiences of students as opposed to self-reported perceptions which may not reflect the actual views of students.

Purpose: While previous studies have emphasised the importance of understanding and taking into account the views of students about game-based learning in order to ensure effectiveness, it is still unclear whether there are any relationships between perceptions and experiences of students and their performance in DGBL environment. This study performs correlational analyses to evaluate the relationship, if any, between the game experiences of students, perceptions of learning games, and their performances in a recycling game.

Target audience: The target audience for this study are game higher education practitioners and researchers in the field of immersive learning. The outcome of this study will provide an insight into whether and how the past game experiences of students and the self-reported perceptions of games influence their performance in educational games. This will allow stakeholders to pay closer attention to the most significant aspects so as to ensure appropriate use and good learning performance in game-based learning environments.

Audience engagement: In a 7 minutes video presentation, I will discuss the study and findings. Interactive graphs and figures will be included. A small number of questions will be used at the end of the presentation to gather feedback from the audience.

Outcome: From our results, game experiences was found to be the only factor that significantly correlates with performance in the game. No significant correlation was found between the perceptions of students towards learning games and their performance in the recycling game. These findings backed up by evidence from this research, would enable

stakeholders to focus on aspects that would have the highest positive impact on the performance of students in a game-based learning environment.

References

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