



Editorial

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This issue of the IJSG proposes five regular papers and hosts the special issue dedicated to the Games and Learning Alliance (GALA) Conference, whose 2023 edition was held in Dublin, with Pierpaolo Dondio (Technological University Dublin) general chair. Pierpaolo is also the leading guest editor of the IJSG special issue. Here is a short overview of the regular papers.

“Serious games in science and mathematics education: a scoping umbrella review”, by Karimov et al. [1], analyzes the impacts of serious games on students’ moods and learning outcomes in science and mathematics education. It summarizes systematic reviews and meta-analyses with 535 primary studies. The papers analyzed reveal that serious games can motivate and engage students while helping improve learning outcomes and cognitive skills. However, negative reports concerning demotivation, anxiety, and limited effects are also observed. The study highlights the role of teachers and proposes research directions for game-based learning.

“Analysis of the impact of serious games on the development of writing skills in intermediate-level students learning French as a foreign language ”, by Benanane et al. [2], proposes a quasi-experimental approach to enhance the motivation of learner-players in order to maximize their potential in written production. Participants were 35 secondary school students aged 12-15, divided into a control group and an experimental group. Students' written production skills were assessed using pre- and post-tests, including tasks such as writing short essays. The results confirm that the use of an educational game can improve the written production of learner-players, underlining the value of educational games in language learning.

“A Linear Programming Methodology for Evaluating Game Attributes in Serious Games”, by Pacheco-Velazquez et al. [3], presents a methodology based on linear programming to assess the relative importance of game attributes such as concentration, clarity of objectives, feedback, challenge, autonomy, immersion, social interaction, and knowledge enhancement. The goal is to quantify the most appropriate weight that this set of attributes should have to explain the game's overall rating. The findings provide a structured framework for game developers and educators to optimize serious games, ensuring they align with user preferences and educational outcomes.

" A Bird Matching Game: Difficulty, Rewards, and Intrinsic Motivation", by Tyni et al. [4], investigates the effects of optional difficulty settings, badges, points, and educational rewards on intrinsic motivation. The work provides insights into how reward structures affect intrinsic motivation and in-game progression, tested in a bird-matching game where players match species with names. The findings show that intrinsic motivation is unaffected by either points and badges or educational rewards. However, voluntarily increasing the difficulty is shown to increase the players' motivation.

"Can mobile games be an option for teaching algebra?", by Güler Selek et al. [5], analyzes the experiences of seventh-grade students playing a mobile game on algebraic expressions in their free times, for two weeks. Analysis of the semi-structured interviews reveal the technical challenges encountered by students and their satisfaction with the game design and the story.

Finally there are the invited best papers from the GALA 2023 special issue, that are introduced by Dondio et al. [6].

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