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When Gamification meets Learning Analytics

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ABSTRACT: This workshop aims to gather researchers from both the Gamification and Learning analytics domains. These two complementary approaches have a common goal: to improve learner motivation and engagement. While the gamification approach tends to integrate motivational mechanisms relevant for learners into learning environments, learning analytics aim at identifying and predicting learner motivation and engagement during a course. Researchers will be invited to present their ongoing projects at the intersection of these two areas, in order to identify the future agenda for the research field.

Keywords: Gamification, Learning analytics, Motivational techniques, Learner engagement

1 ORGANIZERS

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2 BACKGROUND

On the one hand, gamification is an approach that has been well adopted these past years to enhance learner motivation, performance and engagement with learning environments (Landers & Landers, 2014; Denny et al. 2018). This motivational approach relies on the integration of game design elements in non-game contexts (Deterding et al., 2011), for instance badges, leaderboards, or points, to learning environments (Kapp, 2012). As research in gamification matures, game elements are better understood in terms of the mechanics they support and the user psychological needs they rely on (Jia et al. 2016). Several conceptual and empirical studies on their impact on learners are available, focusing mainly on the impact on learner motivation and performances as final outcomes and less on their engagement as a process (Lavoué et al., 2019).

On the other hand, the Learning Analytics (LA) approach allows to collect, analyze and represent data on learners during a course, based on their interactions with the learning environment, including motivational features (Long & Siemens, 2011). It allows understanding dynamic processes such as learner engaged behaviors, motivation, and emotions during a course (Hernández-Leo et al., 2019; Cukurova et al., 2020).

Thus, these two approaches seem to be complementary and we believe can enrich each other. For instance, the knowledge acquired on learners from LA techniques could be used for adapting and personalizing game elements (Hallifax et al., 2019). Also, designing engaging game elements that reflect student progress, behaviors, and performances could engage learners in reflexive processes. However, little is known yet on how learning analytics can contribute to the research field of gamification, and how gamification can contribute to the learning analytics domain.

3 WORKSHOP OBJECTIVES

We would like to bridge the gap between two research fields and gather a community around the question of how research in Gamification and in Learning Analytics can contribute to each other. This workshop aims to study the possible insights of combining the gamification and the learning analytics approaches in the educational domain, the main issues raised by such a combination and new avenues for future research.

The contributions of the workshop will be published in a joint “LAK Companion Proceedings”. About 5-6 contributions are expected for publication. If we do not reach the target number of contributions, we will invite researchers in the field of gamification and learning analytics to present their work in the morning, followed by participatory activities in the afternoon (see details below). We plan to organize a special issue in a journal. The workshop participants will be invited to submit an extended version of their paper.

4 ORGANISATIONAL DETAILS

The expectations of this workshop are described below:

- Type of event: the workshop includes a series of presentations with an open call to present works on gamification and learning analytics with a review process conducted by a committee, including the workshop organizers and other experts. These presentations will be followed by active participatory activities to work together on a research agenda for the future.
- Proposed schedule and duration: full-day.
- Type of participation: ‘open’ workshop (i.e., any interested delegate may register to attend)
- Workshop activities: The morning will be dedicated to presentations and questions. Participatory activities by groups of 4 or 5 participants will be organized in the afternoon, to work on the main issues and future agenda in the field.
- Planned dissemination activities to recruit attendants: the workshop will be disseminated using the Twitter and Facebook accounts. In addition, we will distribute the workshop information through the community mailing list, which is subscribed by more than 150 institutional members.

5 PROPOSED CALL FOR PAPERS

An open Call for Papers will be done for this workshop. Each paper proposal will be reviewed by at least two experts from the Program Committee. The workshop organizers, as experts in both LA and gamification, will do meta-reviews and take the final decisions on acceptance. Contributions on some of the following questions will be welcome:

- What is the current state of the art on gamification and learning analytics in education?
- How can learning analytics techniques be used to evaluate the impact of game elements?
- How can learning analytics be used for adaptive gamification?
- How can game elements support self-regulatory and/or reflexive processes?
- How can learning analytics support teachers in orchestrating game-based learning activities?

- How to design motivational affordances for learning environments? How can LA techniques be used to evaluate these affordances?
- How can gamification and learning analytics techniques complement each other in gamified learning dashboards?

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