Gamification as a system for developing knowledge in the classroom: a proposal based on an educational innovation project

1. Introduction and objectives

Gamification is a term that emerged in the business context in 2008, and that consists in the inclusion of game elements in contexts different from those traditionally related to leisure and entertainment (Deterding, Dixon, Khaled and Nacke 2011). For Burke (2014) “gamification is the use of game mechanics and experience design to engage and motivate people to achieve their goals”. For Kim (2015) gamification goes beyond game design, since it means using its power to motivate people, attract their attention, involve them in an activity and even influence their behavior.

Gamification as a strategy can respond to different orientations that could be synthesized as follows: a) a recreational type, as employed in libraries in order to attract users, or b) a learning type, to motivate and transmit knowledge in the classroom.

The following provides a summary of a classroom innovation project proposing the development of a pilot gamification experience in subjects related to the management of information and documentation units.

The following specific objectives are indicated for the project:

- Application of gameplay scenarios in the context of the classroom for the creation of a game-like experience.
- Application of gamification techniques to develop knowledge and improve students’ practical learning, motivation and academic performance, with respect to their skillsets for management and planning of information and documentation units.
- Design of gamification proposals related to challenges in the real/professional world and to students’ core interests about the above-mentioned subjects.
- Fostering teamwork, participation, interaction and mutual enrichment of the various participants in the experience.

2. Methods and results

The project responds to the goal of developing an educational innovation experience offering support and assistance for structuring strategies based on gaming as an educational tool and as a system for the development of knowledge in the classroom. The aim is to increase motivation among the intended recipients of the project. It is a pilot experience supported by active teaching-learning methodologies and strategies applied to subjects related to the management and planning of information and
documentation units, but it could be exportable to other subjects/areas and/or to other additional scenarios.

In terms of methodology, the planning of an innovation project in the classroom has been based on the formulation of the following phases:

An initial phase known as “Proposal and selection”, which consists of an identification and selection of the gaming strategies and dynamics related to the managing and planning skillsets for information and documentation units.

A second phase designated “Planning, design and development of gaming strategies and dynamics” which covers the design of the gaming strategies and dynamics selected in the previous phase, their scheduling and their implementation and application in the classroom.

Thirdly, the “Documentation of gaming dynamics phase”, which involves the recording and registration of the gaming strategies and dynamics, the generation of a directory of standard records for each one, the publication of the documentation generated and, finally, the analysis and storage of the documentation resulting from the whole design and implementation of the gaming strategies and dynamics.

Lastly, a final phase of “Analysis and dissemination of the project’s outcomes”, including the analysis of the pilot experience and the lessons learnt, as well as the drafting of a final report and the presentation of the results at specialized events.

In terms of results, content has been selected and designed for the following activities:

- Teaching content: “The principles of scientific management”. Activities: Management Crossword (game based on a crossword with questions related to the subject), Hidden people (game based on clues to visually discover a reference author in relation to the content studied) and Kahoot! Trivial (online game of questions and answers about content faced by different teams. This game is based in the Kahoot! software, available in: https://kahoot.com).

- Teaching content: “Project Teams training”. Activity: The Nine Belbin Team Roles. The Belbin method is used to identify people's behavioral strengths and weaknesses through nine different clusters of behavior that are displayed in the workplace. In this adaptation, students identify the nine roles in their projects design.

- Teaching content: “Project ideas: competition”. Activity: Shark Tank. Shark Tank is an international reality television program which shows aspiring entrepreneur-contestants as they make business presentations to a panel of “shark” investors, who then choose whether to invest. In this adaptation the pupils show project presentations to “shark” teachers.

- Teaching content: “Staff Selection and Job Interviews”. Activity: Role-play. Students perform a role play with a script previously prepared by the teachers.
The session is recorded on video and is then studied in the classroom to see how it was developed.

Figure 1. Two examples of activities: crossword and hidden people

3. Conclusions
This educational innovation project model has been enthusiastically received by all participants, both students and teachers, who showed a high degree of motivation in using it. The activities planned and developed within the teaching contents have been well accepted with a high level of participation, which allows us to think about future actions that can even improve these gamification actions and, moreover, apply them to new contents. From the point of view of teaching, the activities have facilitated the practical understanding of the contents and a considerable improvement in the results and final evaluation of the students.

References
