IMMERSIVE GAMIFICATION FOR THE STUDENT

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ABSTRACT

The work described below forms is part of a project based on the application of gamification techniques in a first-year course of the Degree in Multimedia Engineering at La Salle-Universitat Ramon Llull. The work discusses the advantages of the applying of immersive gamification techniques in the acquisition of role-based learning. The project begins with the analysis of data collected during the years 11/12, analysis of data and student opinion collected during the years 12/13 and the analysis of data and student opinion collected throughout the years 13/14. Gamification methodology was applied any during the current year.

KEYWORDS

Gamification, Immersion, Game Characters, Teaching, Fun Experience, Knowledge.

1. INTRODUCTION

This projet aims to improve teaching quality and student learning experience. To do so, we have tried to increase satisfaction and motivation levels of the students with the application of gamification techniques, moreover, we have measured the usefulness of the applied proposal through user experience evaluation. Our objective was two-fold: firstly, to meet the expectations of users, and second to guarantee that the user experience is memorable and satisfactory. Thus, in the first stage of our proposal the students had to recognise and acknowledg the type of role that they have been assigned as well as making them aware of the different roles they may acquire as they increase their knowledge in the three main areas of the course: creativity, usability and communication skills.

2. EXPERIMENTAL METHODOLOGY

The methodology applied to the project initially focuses on defining the type of profile that students should take as a positive learning objective of the course. To achieve this, requirements for each profile have been established in a professional environment and they are in turn, related to the course contents. Initially, the game begins with 3 initial clans, one for each student profile. Students are assigned a profile at the beginning of the course. Therefore are 3 areas of knowledge and each area has three profile types wich makes a total of 9 profiles types. There are a further 8 clans which correspond to the final profile of the students according to the areas in which they stand out. As the academic course progresses and students receive grades, they augment the profile of each area and they are assigned clans which most accurately correspond to their particular strengths and/or weaknesses.

2.1 Game Design Method

The method of gamification applied throughout the project is based on the model MDA (Mechanics, Dynamics and Aesthetics). This model allows to control the different parts of the game system independently: mechanical or rules of the game (points, recognition, levels, challenges, progress, time pressure, social pressure, surprises), dynamics or how the user uses these rules (reward, status, achievement, competition, altruism), and aesthetics that is what the user perceives (feeling, fiction, fantasy, competition, challenge, discovery, expression, hobbies).

2.2 Immersive Methods

In order to achieve a clearly defined immersion in which the student can feel identified, we have created customized images, named every role and created a hierarchy of profiles according to student performance in the different areas. The user profiles are: initial profile, profiles according to the level of knowledge of a specific area (design, usability and comunication skills) and User Clan according to the profile level acquired (mix of types of knowledge profile).

2.2.1 User Profiles According to the Initial Clan Base

Such profiles are predefined by teachers and students based on the experience of other courses and student ratings, have been established from the co-creation.

The clans are classified into 3 basic types according to the skills acquired for the student in previous years:

Table 1. The Initial Clans

Clans	
	Technical: You like working on the technological part of design, albeit technological, physical, telematics or the programming of a project.
	Artistic: You like working on the visual, narrative and/or aesthetic parts of a project.
	Communicator: You like to share, report on and document a Project, either verbally or in writing.

2.2.2 User Profiles According to the Level of Knowledge of a Specific Area

The profiles pretend to catch students attention by clearly marking the positive side of the high-level and little evolution in the lower profile.

Three profiles, based on the course content: creativity, usability and communication skills, have been designed for each category. These profiles correspond to a greater acquisition (see first quality) or less (see last quality) of the area of knowledge:

Table 2. User Profiles Related to Knowledge in Design

Knowledge in Design	
	Creative: All your ideas are original and come from your individual interpretation of knowledge and research.
	Recycled Your ideas tend to be based on previously existing ones and although you do add your own personal touch, the source of the idea is definitively not yours.
	Conformist: There is very Little attempt on your behalf to come up with original ideas. You use pre-existing sources and make very little effort to personalise the idea and make it yours.

Table 3. User Profiles Related to Knowledge in Usability

Knowledge in Usability	
	Critical: You do not accept the first image of something, instead you make great efforts to analyse it from all the potential angles and aspects in order to be able to criticise it with criteria.
	Adaptable: You are capable of seeing the positive and negative aspects when analysing design, although you do not really study the matter in great depth. The obvious defects are clear, but there is not much point in digging deeper. If the design of the product is acceptable on the outside, then any other problems are not really that important.
	Tolerant: Things are fine the way they are, so why change them? If a qualified professional has designed a product, then it has to be fine. There is no need to make any changes.

Table 4. User Profiles at Knowledge Related to Comunication Skills

Knowledge in Comunication skills	
	Communicator: You are capable of explaining ideas in an entertaining and pleasant manner. You can transmit the relevant information while entertaining your audience at the same time.
	Sociable: The information that you are sharing is comprehensible and the audience is happy to listen to you. You could probably improve your communication skills by establishing a better rapport with your audience but your message is clear.
	Shy: The audience has not received your message. Perhaps the content is interesting but your lack of communication skills prevent the audience from perceiving it as such.

2.2.3 User Clan According to the Profile Level Acquired

As the course progresses and students acquire a higher or lower level of knowledge according to each profile (evaluation), they will belong to one clan or another:

Table 5. User Clan According to the Profile Level Acquired

Sphinx: Technical + Artist + Communicator	**Harpy:** Artist + Communicator	**Hydra:** Comm.
Hippogriff: Technical + Artist	**Minotaur:** Technical	**Human:** Nothing
Centaur: Technical + Communicator	**Fenix:** Artist	

3. CONCLUSION

Once the results of the whole Project have been analysed we can determine that gamification is a clearly a strong element when it comes to stimulating and motivating students to improve the quality of the work they submit, consequently improving the quantity of knowledge acquired. Part of the results are based on the comparision between the practices of the first semester. The average mark: of the year 11/12 is 4.4, in 12/13 is 3.9 and the gamificated course (13/14) is 6.4, and for the number of excellents: 2 in the year 11/12, 0 in 12/13 and 17 in year13/14.

The fact that immersive elements have been created makes the students were fully aware from day 1 what is expected of them and how they can acquire more knowledge and adapt their work to the different roles which have been established as part of the course contents. The application of this type of teaching tool requires a high level of teaching and knowledge and professionalism from the teachers as the definition of roles, clans and profiles are the key to a successful immersion of the student. This study could encourage the creation of more applications in other years of the degree programme.

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