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“University Universe”: A Mobile Game to Simulate the University Student Life

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Abstract. Nowadays, there are different reasons why a student leaves a course, a university, or the higher education system. This article presents the University Universe, a playful digital game that simulates in practice the difficult task of concluding the semesters of higher education. For this, game dynamics, scenarios and design approach were presented, together with the developed game prototype. As a result, there is a game that can simulate the difficult task of completing the semesters in a university course, something particularly challenging, but capable of being transformed into a gamified activity for students awareness.

Keywords: Higher education · Student retention · Serious game.

1 Introduction

Nowadays, there are a lot of reasons why a student might drop out of university. Among the usual reasons for this phenomenon, some of them stand out, such as methodology disagreement, comprehension difficulty, monetary problems, bad college infrastructure, no adaptation to the academic environment, etc. They also come along with different types of personal problems, such as, diseases, home moving and psychological problems, for example [1].

The lack of information during the first year, the student unsuitability with the university system, and the inability of create new friendships are also pointed as the main reasons of college evasion [2]. This is also attributed to the lack of communication and information faced by the university environment [3], something that could be solved by appropriated information systems as a whole.

Undergraduates are deeply in touch with digital games, bringing the game play to a new purpose level, such as education and spread knowledge [4]. In this sense, this paper presents *University Universe*, a digital game that simulates the hard task of finishing semesters during a university course. It aims to represent the tension of a university student life, showing common problems found by them in a fun and casual way that must be solved during the game play.

2 The University Universe Game

Designed to be a mobile game that could be played with only one hand, the University Universe game dynamic is to balance the essential attributes of a university student: health, money, social life and grades (Fig. 1). These attributes are modified by the execution of campus activities according to the game map (Home, Library, Cafeteria and Academic Research Facility) (Fig. 2), which must be kept at a certain minimum value to continue playing. Each level represents a semester and the difficulty increases as the semesters advance, simulating what students face in a real course.



Fig. 1. HUD displaying the current player status.

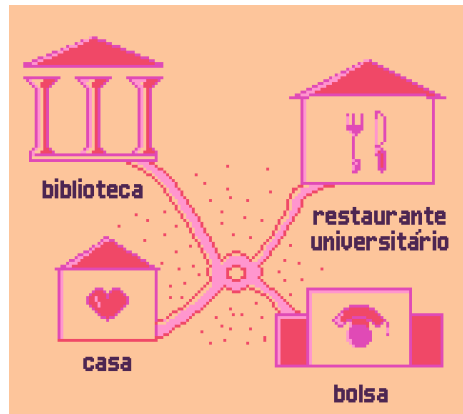


Fig. 2. Map of the University Universe game.

By the usage of a game design canvas approach [5], important features were identified to develop an initial game prototype, such as:

- Initial menu and gameplay scenarios (Fig. 3);
- HUD with the following attributes: health, grades, money, social life and the semester time indication (Fig. 1);
- Automatic decrease of player attributes as the time goes during the semester;

- Verification of the minimum attribute value required to go to the next semester;
- Representation of the current scene the player is on;
- Definition of which location affects the attributes in a certain way, during the time and as the player clicks the scene;
- Change location according to the map selection;
- Record of the semester reached by the player; and
- End game when the player does not have the minimum attribute value required or if an attribute reaches zero.



Fig. 3. General overview of the game scenes.

At the beginning of the game, the player has all attribute values maxed out (100 points). The player character starts at Home (Fig. 3), and, when the scene is touched, attributes are increased or decreased according to the context defined for the respective campus activity:

- **Home** increases health in 3 points, decreases grades in 2 points;
- **Library** increases study in 4 points, decreases health in 2 points and social life in 1 point;
- **Cafeteria** increases health and social life in 2 points, decreases money in 1 point; and
- **Academic Research Facility** increases grade and money in 2 points, decreases health in 2 points and social in 1 points.

The location-based effects were defined by personal experiences during the academic life. For instance, it was verified that productivity decreased at home, due to the number of possible distractions. On the other hand, health increases, due to the rest and procrastination possibilities. Conversely, a long time procrastinating might cause the opposite effect. So, in the game, if the player stays in a location for a long time, it will be harmful.

The first semester introduces the player to the gameplay and mechanics, working as a game tutorial. It lasts 60 seconds while the following semesters

are 100 seconds long. This game design decision was made during beta testing, where all semesters were 200 seconds long. This duration was considered too long by the initial players who tested the game.

When a semester ends, the attributes need to be more or equal to the minimum values required to keep playing. In the first semester, the minimum value of all attributes is 30 points and, as the following semesters advance, this value is increased by 5 points.

There are 4 ways to lose the game, one for each attribute to convey a message about academic reality. For example, when the health attribute ends, a funny message warning is displayed about the importance of mental and physical health care during college years. When the grade attribute reaches zero, the player is warned that he can not leave his academic life behind.

3 Conclusions and Future Work

This paper presented University Universe, a mobile game developed to the player faces the difficult task of finishing semesters in a university. It is a challenge that has a significant impact on the reality of student retention, which has been turned into a gamified activity that introduces a funny perspective on the current life status of most undergraduates.

As future work, new functionalities will be implemented, such as adding random events that could turn out to be beneficial or harmful for the university student (surprise tests, dating, etc). The correct balance between the attributes and scenes for new implemented events, resources and scenes will also be performed, together with an online ranking able to share obtained results in social networks as a viral marketing strategy for the game.

Finally, the University Universe arcade is under construction to be placed in a popular university environment, where students opinions and suggestions about the game, especially about how the game has changed their life prospects as an undergraduate student, will be collected by them.

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