GAMIFICATION IN BUSINESS AND EDUCATION – PROJECT OF GAMIFIED COURSE FOR UNIVERSITY STUDENTS

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ABSTRACT

According to social changes in students' behaviour caused by fast-growing technological environment we should think about new solutions in the construction of courses they are participating in. Gamification can be one of the answers, but as we can already experience – it is hard to design working gamified system that will deliver the desired outcome. Author would like to present his concept of immersive gamification course that he will start during 2013/2014 academic year. The topic of the course will be focused on the phenomena of gamification in business and education. Idea behind that was to show students the experience of gamification use while teaching them about that field. Following paper introduces to gamification in general and educational context and presents authors design framework of gamified course.

INTRODUCTION

Gamification has risen as a trend around 2010 as it started to become used worldwide in various areas – from business to education. That term had been used for the first time in 2002 by Nick Pelling (Pelling 2011) but it was just too early for the proper adoption of the concept. There are plenty of gamification definitions, but author suggests using these two:

1. Gamification is the use of game design elements in non-game contexts (Deterding, Dixon, Khaled, & Nacke 2011)(
2. Gamification is the process of game-thinking and game mechanics to engage users and solve problems (Zichermann, Cunningham 2011)

Both underline that the process of gamification is not about making a game, but taking what makes games so engaging and incorporating it into other activities. Due to mass popularity of video games in the entertainment sector, game design and its mechanics are known to much broader audiences.

Mass popularity of video games in recent years has increased the games influence on people. Starting from playing for pleasure (rather than watching TV or reading) to being completely addicted to games (especially social media games and games treated as e-sport). The theory of

gamification based on that observation assumes that proper game design can change human behaviour and boost productivity when it is well made.

When one is thinking about gamification of education it should be considered that using serious games during a course can be recognized as a gamifing process. On the other hand simulations are designed in a way that engages a user, gives instant feedback and enhances productivity (Miller 2013). The most interesting thing would be using a combination of simulation and gamified course when teaching students as it is already happening (Wardaszko 2013) . Although simulations could not be used in every kind of course. What can be done to motivate students and encourage them for better work during a course? Using the best working game mechanics. The author would like to describe his project of gamification in the education framework.

GAMIFICATION IN EDUCATION RESEARCH BACKGROUND

During early hype on gamification in 2010 Lee Sheldon started his course called *Multiplayer game design.* He reconstructed classic course structure into gamified one using mostly point mechanics and some narrative elements. Passing tests and exams, became fighting with monsters, making presentations or research – was described in quest brief formula (Sheldon 2010). Based on that he wrote a book titled *The Multiplayer Classroom: Designing Coursework as a Game* which broadened the solutions of gamification used in courses (Sheldon 2011).

Another detailed description of the uses of gamification in education was done by Karl M. Knapp in his book *The Gamification of Learning and Instruction: Game-based Methods and Strategies for Training and Education* (Kapp 2012). Although the content of the book is quite similar to the work of Mr. Knapp, the book contains well-structured knowledge and meaningful insights that were inspiring to the author.

Beside books there are already some good implementations of gamification used in learning. The author took his inspiration from the following:

1. *Just Press Play* – implemented at Rochester Institute of Technology. Strong narrative outline was well suited into RIT history. Students` assignments were

driven toward intristic motivation for exploring knowledge and mastering skills both in single and group dimensions (Brinkman 2012) .

2. *Social Media Innovation course by Steven L. Johnson* – constructed on Wordpress – a CMS platform that is open for developers by plugin extensions. That was helpful for building the gamified system with score calculations, achievements and badges distribution and communication platform by properly adjusting approachable plugins (Johnson 2012).

FRAMEWORK DESIGN

Gamification since 2010 is one of the most popular trends in various areas. In the latest Gartner Hype Cycle report gamification is situated in the peak of inflated expectations (Gartner 2013). That means there will be a huge number of gamified implementations, but most of them could fail – mostly due to poor design (Burke 2013). The author decided to start a course design from describing goals that he wants to achieve by this method. These are:
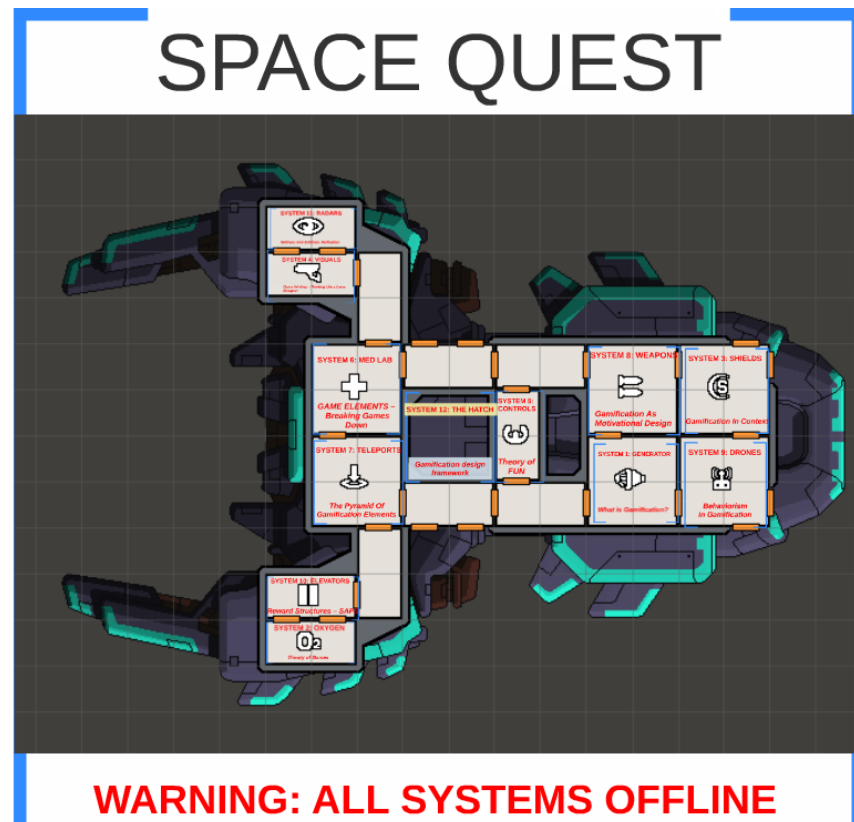
1. Improving students` activity during lectures.
2. Presenting gamification mechanics during classes by implementing them into grade system.
3. Immersing students by proper narrative layer of the course.

In the authors` opinion the proper use of narrative elements can improve engagement of user/student by immersive influence of the situation that is taking place in the classroom. On the first course meeting, students are introduced to the story which takes place in the deep cosmos. Students as space school cadets on their first serious mission travel too close to a magnetic field. That results in disabling power on the spaceship. Because classes are planned for 12 meetings – each meeting became one of the spaceship systems. Starting from *System 1: generator* (which covers introduction to gamification and whole classes) students need to reactivate 12 systems on board. To activate system they need to gather enough energy cells which can be achieved by solving missions (tasks) during lectures or by actively participating in the course. There will be various number of missions in each system. That will depend on topic under the system name. If it will be more complicated author will use more short missions to check students' knowledge after classes. Some missions will also take part during course meeting (work in groups on case studies etc.) When all systems are powered up – the spaceship is ready to come back home.

Next phase is developing students 'journey' through the course. Author used here a player-centered design -

PICTURE 1
SPACESHIP BLUEPRINT. BASED ON SPACESHIP MODEL FROM FTL GAME (2011)

students' experience should be built with rising level of difficulty and complexity (Charles, McNeill, McAlister, Black, Moore, Stringer, Kücklich, Kerr 2013). Based on that the game`s mechanics and game`s dynamics are chosen to fit on each level of students` experience in the topic. First big change in face of traditional course was the scoring system. To pass the classes student has to achieve some level of points. Points can be gained through set of short missions and assignments built both around the gamification knowledge and story that had been presented to students on the first meeting. To gain enough points to pass the classes student can choose the assignments as they like. Naturally harder tasks were worth more points and should be open only after certain knowledge will be presented. What is important – none of the tasks are obligatory. It is free choice of each participant to earn as many points as they want. As an example: first challenge is about uses of storytelling. A student needs to roll from 4 to 9 dices of StoryCubes (set of dices with random images on each side of the cube) and tell his or her story about getting on the spaceship. That warm-up exercise serves two purposes: firstly it immerses the student into course`s story. Secondly it is a verbal and quick reasoning skill oriented.

As for other game mechanics introduced in the course there are some popular ones like:

- Badges, can be earned for completing missions – their function is to quickly recognize what skills or knowledge student acquired and to show off in front of the other course participants,
- Leaderboard, based on points earned by each student, adding some rivalry between students can boost their productivity,
- Visualisation of progress and group effort in accomplishing tasks will have reflection on attached picture – each system back online will change its colour to green and on the bottom of the picture a progress bar will appear to show how many percents of the ship is functioning,
- Boss(es) – final task, and the highest scored one, will be constructing your own gamified solution and presenting it in front of rest of the group. That will be explained in the story as bringing back all of the systems and heading back home. Additionally, the author prepared „mini-bosses" which will be some recent case studies to analyze. To situate „mini-boss" stage in the storyline author used such events as meteor shower, alien visit, collision with space junk etc.

To gain proper attention on the topic and immerse students even more there will be also two video games suggested to play. They are both educational and connected to the main plot (in the mean of setting):

- *Space Team* (Sleeping Beast Games 2012) – game for mobile devices from 2 to 4 players. Group needs to develop good communication skills to command a ship in fast changing space environment. Score measures how effective they were during the spaceship navigation.
- *FTL* (Ma, Davies 2011) – a spaceship simulation with roguelike character. The player needs to escape and survive from pursuing force. Each game is made procedurally, which means that each time the player gets different experience. Fighting with evil spaceships involves real-time management of crew, power distribution and weapons.

After adjusting the points, missions and challenges for particular students` group, author would like to use Youtopia platform (Youtopia 2013), which is dedicated to motivating and engaging students or organizing members to work. It has huge potential of implementing the authors' ideas and in his opinion it has clean and usable design. All missions and achievements can be transferred into Youtopia. Students` benefits from the platform are that they have instant feedback about their progress. As for teacher – platform presents usable statistics about students` activity and gives possibility to manage content of classes in real time (adding new missions, rewards etc.). If there are any problems with using Youtopia author will use Microsoft Excel spreadsheet. That would be less attractive solution, but powerful enough to give some feedback for students (points distribution, leaderboards etc.).

CONCLUSION

Based on desk research of successful implementation, knowledge about building gamified activities and experience of doing that, author hopes that prepared course will achieve 3 goals described in this paper. What is important is that students will learn about gamification by participating in gamified course. In authors opinion giving them such experience will improve their understanding of discussed topic. What is more – students will have an opportunity to check if the theory of gamification is correct. Author will provide post-course evaluation to measure students` satisfaction and insights of using gamification during the course.

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