

# Blurring the boundary between play and work; Gamification and its takeover

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## ABSTRACT

Starting off with a basic understanding of gamification, this literature review will cover only a small element of gamification: productivity games and achievements; as well as how they have affected the environment they were introduced in. This review will cover four different cases where gamification has been introduced: two cases concerning university first year students, and the other two concerning Microsoft. We will discuss the merits by introducing gamification, as well as the pitfalls that come with it. This review will also show how gaming and the workplace are becoming closer and closer together: where one day, a worker may not have his salary deducted for playing games at work, but instead getting a raise.

## Author Keywords

Gamification; Achievement boards; Productivity Games

## INTRODUCTION

Gaming is already a huge part of the world. Whether it is through PC, mobile phones, or consoles: millions and millions of people play games: in fact, studies have shown that roughly 60% of the western world plays games [1]! In the 21<sup>st</sup> Century, it has been shown that it is more likely that young children know how to play a computer game than swim or ride a bike: more likely that a child can operate a mouse than tie their own shoelaces. In the past, to be able to play games at work would result in a pay cut: but now, slowly but surely, games are making its way into the education and industry. By introducing gamification to society, many people have seen that it has produced many positive behavioural changes and good habits: also, many people enjoy changing the way they think. In this review, it will cover four different studies where the gaming elements of “productivity games” and “achievements” have been

implemented to promote good behavioural changes in workers and students.

## GAMIFICATION: A DEFINITION

Before we begin our analysis of the case studies, the meaning of “gamification” should be brought to light. Gamification is a word that is being used more and more frequently throughout industry: however, what does it entail? For the sake of this review, we will be borrowing the definition from S.Deterding et al. “the use of game design elements in non-game contexts [3].” This definition is also meant to cover the intent of applying game design elements, which is to encourage engagement with a product, and to motivate particular behaviour through said game elements. It covers many different gaming elements: however, for the purpose of this review we will only be covering two specific elements and their effects: “productivity games”

## CASE ONE: ORIENTATION PASSPORT

### Introduction

The first case study is about introducing an achievement system to an orientation application called “Orientation Passport” [4]. The intent behind this study was to see if by implementing an achievement system for the users would encourage them to use the application more frequently as well as make it more engaging and fun. Another goal was to promote under graduate students to attend more university events and forge new friendships; kick-starting their university lives as well as enhancing it.

### Achievement System

The achievement based system used was where the user is rewarded for completing certain tasks. In this study, task completion could be achieved by four different actions: scanning a Quick Response (QR) code in a designated location, checking in at an event via GPS, answering pre-set questions or by adding a friend by using the third party Bump API- which requires users to physically “bump” phones. The achievements were comprised of a title and a clue on how to complete the achievement. Upon finishing all the required tasks, a picture and text detailing the achievement would be revealed.

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## Discussion of Results

Overall, the feedbacks from the participants were positive. Most of the users found the achievements made the application more engaging and challenged them to complete them. It was found that completion via scanning a QR code was the most popular type of achievement: versus achievements concerning numeric input were least popular. The reasoning behind this was because participants could achieve these requirements by simply using a trial and error strategy: there was no need to actively do anything.

Some important issues were found from the results: although there was a positive effect on the students (for example, getting them to attend events hosted by the university) to what extent did they actually affect them? For example: an achievement was awarded to a participant when they had attended three of the university's events. Initially, it would encourage students to go to the university events: however, once the achievement was completed, it was observed that student's no longer went to the events. This actually shows although the achievement was not as effective as it was intended to be, and needs to be further refined.

## CASE TWO: JUST PRESS PLAY

### Introduction

The "Just Press Play" [5] project is the second case study concerning the application of an achievement system that will be discussed in this review. The study originated from a student who suggested the idea of being able to accomplish achievements in real life. The staff took up this idea, and implemented the project to improve the performance of the students in their computing class. In this case study, we will see how the implementation of the achievement system facilitated the students learning with the end result of having a higher passing rate in the first year computing course.

### "Just Press Play"

The project was started in 2011 and continued until the end of the Winter Quarter 2011/2012. The achievements were designed so that the students would not be restricted in what courses they took; however, skills obtained from some courses would be necessary to complete some of the achievements. All of the achievements were made with two major influences: the number of people needed to complete the achievement, and what type of achievement it would be classified as. This meant that the achievements were created to try to be as broad in scope as possible: achievements could range from needing group of people to complete tasks to just needing the individual user. Another requirement for the project was that it had to appeal to both "casual" and "core" players; new players who joined into the project half way should not have much difficulty started (the barrier of

entry), while also taking into consideration veteran players who enjoy challenges.

An interesting part about the project was they also introduced the concept of "Quests"; some achievements were linked together in order create a "Quest". In order to complete a Quest, different achievements needed to be completed.

The actions in order to complete an achievement are similar to the one of the "Orientation Passport". These included: scanning a collectible card, location check-ins, or via administration. Collectible cards were used for special events, or by individuals: they included the name of the achievement, a unique 25 character alphanumeric code which needed to be entered accompanied with a photo, a description or a trivia question related to the achievement. Location achievements were completed by scanning a RFID tag, whilst the administrators would check off eligible players at appropriate times for the last type of

### Discussion of Results

Participation of this project was purely voluntary; however, it was observed that many students took part of this project (around 60% of total students in first year computing). When the project was over, the total number of achievements completed was 3504, while the higher number of achievements collected by an individual numbered 49.

A special mention must be given to one particular achievement: the Undying achievement. This achievement was a challenge issued by the developers of the project. The achievement in detail only had one requirement, and was rewarded too all players if the pass rate of the course was over 90%. To put this into perspective, the highest passing rate in the history of this course was 85%. A lot of interesting events ensued: at first, students would collaborate with each other over the department's Facebook group. They would post questions to the class in hope of getting some feedback and assistance; this is exactly what happened. When freshmen students had problems understanding concepts or questions, they would post on the discussion board and upperclassmen would respond to their requests. Eventually, students took the initiative to create a study session for the final exam; they requested assistance from faculty staff to help find space to hold the sessions as well as to ask for tips and reviews of what had been covered that quarter. The final passing rate of the class was: 91%.

From these observations, we can see the effect of the achievement: although it not directly related to the students creating study groups and collaboration with lecturers, it has encouraged them and given them another reason as to why the groups should be created. Another thing to note was that the achievement board also encouraged interactions between faculty and students; several achievements involved some form of collaboration between

them, creating a relationship which otherwise would have been very weak, or even non-existent. This also means that students would find it easier to approach lecturers, having already broken the ice due to the presence of the achievements.

Some improvements to this achievement system were acquired from the feedback of participants: firstly, was the change to the RFID scanners. These were changed to QR codes, so that in future, it could be provided for both Android and iOS mobile devices. The input of the 25 character alphanumeric code was also a miss- because of the lengthy code; participants were less inclined to complete these achievements.

### **CASE THREE: COMMUNICATE HOPE**

#### **Introducing: Productivity Games**

We now move on from university to industry; we start our application of “productivity games” with the project: “Communicate Hope” [6, 7]. Communicate Hope was a productivity game that was introduced by Microsoft to encourage employee feedback for their Microsoft Lync 2010 beta program. Aside from that, when feedback was completed, points would be rewarded to the participants team. In addition to this, teams would be playing on behalf of disaster relief agency teams; at the end of the project, sponsored funds would be distributed according to the number of points earned.

#### **Discussion of Feedback**

There are a few points that were found from the feedback of the participants: firstly, the comments. Many users expressed positive feedback after being part of the project, saying that they very much enjoyed the experience. Users found that the game gave the beta more purpose, and therefore more engaging and fun. Plus, because of the nature of Communicate Hope was to help the disaster relief agency teams, users found this as an added bonus; not only do they help the company internally by returning feedback on one of their beta projects, but also helped externally with the community. This shows how introducing a productivity game promotes user’s enjoyment while also doing work. We see the start of transforming the industry so that not only will workers be gaming at work, but that the gaming is producing a positive outcome for the company.

Another observation that is to be discussed is the amount of feedback Microsoft received; the difference between feedbacks contributed from “gamers” compared to “non-gamers” was overwhelming. It was found that 67% of the gamers sent feedback through ad-hoc versus the 3% by non-gamers. On top of this, it was found that gamers were 10 times more likely to participate in directed scenario surveys as well. The last bit of statistics is concerned with heavily promoted surveys; gamers were 2.4 times more likely to participate compared to the non-gamers. It can be

seen that having the productivity game influenced many people to turn in their feedback: it motivated them, encouraged them, and they responded accordingly.

### **CASE FOUR: WINDOWS LANGUAGE QUALITY GAME**

#### **Final Introduction**

The last case study in this literature review is the Windows Language Quality Game [7]. Due to the project being another productivity game, the goals were roughly the same: to motivate the employees of Microsoft to participate in the project. Similar to the Communicate Hope project, participation was voluntary. The language quality game was made to refine the language translations before releasing the product (in this case, an interim build of Windows 7). Players of the game were to review and identify any remaining defects and problems via screenshots. Over the period of a month, over 530,000 screens were reviewed by a player base over 4,600. [7].

#### **Discussion**

The statistics from the language quality game tell us that by introducing the game, participants were enticed to join in on the project. Results show that these players were able to find over 6,700 defective reports; the most valuable output of the game. By introducing the productivity game, Microsoft was able to find a cheaper and more effective way to review their systems; in the past they would have had to hire two separate translation companies in order to do so, but now that step has been saved.

### **OVERALL DISCUSSION**

The first two case studies about case studies were about achievement boards, and they have highlighted many good points and traps that come with it. We have seen that by implementing achievement boards, it encouraged university students to reach out to their lecturers and embrace university life. The transition to university was smooth and fun, thanks to the applications and their achievements. From this, we can conclude that the achievement boards were well received by students, and that there is room to expand in this area.

We were also subject to certain downfalls: firstly, in the form of the design of the system. We saw from both cases that there were some forms of input where students disliked and had a negative effect on the application. In the case of Orientation passport, it was in the form of the numerical input; in just press play, it was in the form of the 25 alphanumeric character input. We also saw some positives from inputs: in both games, it was both the ability to scan codes to complete requirements promoted students to go explore the university and go to places which they otherwise would never have visited.

The latter two cases were about the industry and productivity games: again, some issues have been brought to light. From the two case studies, we can see that by introducing a productivity game to the projects, it has helped the company in many ways: firstly by saving the company money. Microsoft was able to save money by using employees to review and provide feedback on products, instead of having to hire external companies. This strategy worked out well in the second case, where translations were reviewed by native speakers across the international board of Microsoft. After all, who better to review a translation than native speakers of that language?

## CONCLUSION

Gaming has become an irreplaceable part of the 21<sup>st</sup> century: and it's slowly moving its way into education and the industry. Many examples of gamification have been slowly moving its way into society; (not including the ones mentioned here) for example, Peerwise [9] for education and Foursquare [10] in industry. However, one thing these all have in common; they are only using a very small part of gamification. Most of these include achievement boards and rewards, which is a very popular part of many games, but also a very small part. This shows that there are many other gaming elements that have yet to be tested for effectiveness and usefulness.

Gamification is a very wide and very broad term: from what we have seen in this review, it has proven its effectiveness from a very small part; what would happen if all of gamification could be incorporated into society? The lines between work and play are being blurred, and educational games are a huge hit; it is not possible to imagine a day where there is no difference between play and work.

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