A Gamification Platform to Encourage the Students Social Etiquette Improvement

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Abstract

Information Technology and globalization help bring people closer. The boundary between nations are blurred and many cultures are lost or being absorbed by westernization. Thailand, like many Asian countries, has unique manners and norms that are considered old or obsoleted by some younger generations. The idea such as selflessness or the will to help people without getting paid are rarely seen in the society. Currently, many Universities in Thailand encourage the academia to reintroduce the idea of social etiquettes to the students. However, unlike the achievements in term of academic performance, the etiquette properties of students are difficult to measure. Thus, make it difficult to evaluate their improvements.

In order to enumerate the good deeds done by students, a prototype information system to keep track of students' activities will be developed and deployed at Rajabhat Rajanagarindra University in Thailand as a test site. The system will be used by both students and teachers where the objectives for each achievement are preset to follow the university's requirements. The students are encouraged to keep doing good deeds through gamification where they will be rewarded with digital trophies once the conditions are met.

Once the system is operated for an adequate period of time, it is believed that the social etiquettes of the students will be improved. It is possible that if the system is widely adopted, it will lead to the better manners of the students and improve the quality of the society as a whole.

Keywords: Gamification, Technology in Education, Social Etiquette

1. INTRODUCTION

Information Technology and globalization help bring people closer. The use of smart devices such as smartphones and tablets allow everyone to search, learn and communicate at will. The boundaries between nations are blurred thanks to the services such as maps and street view which allow everyone to explore other countries freely. The use of social networking services also allows the users to immerse themselves in other cultures easily. It is obvious that many cultures and ways of life are lost or being absorbed by westernization and the fast pace of digital world.

Thailand, like many Asian countries, has unique manners and norms that are considered old or obsoleted by some younger generations. Although Thai smile and Thai food are still widely regarded as the primary identities of Thai people, the ideas such as selflessness or the will to help people without getting paid are getting rarer to find in the society. Currently, many Universities in Thailand encourage the academia to reintroduce the idea of social etiquettes to the students in the form of the university's identity. For example, the identities of Rajabhat Rajanagarindra University's students are:

"Willing to help, Eager to learn, Love to work hard"

Unlike the achievements in term of academic performance, these etiquette properties of the students are difficult to measure. Currently, the lecturers put their effort to incorporate and promote these ideals in various courses. However, it is difficult to evaluate their improvements.

In computer games, especially in role playing games, the value such as goodness is clearly quantified based on actions of the players. The goals called quests were set and the details on how to achieve them were given in order to guide the players. Furthermore, the sense of competitiveness between players drives them to play longer and harder as can be seen in MMORPG worlds where thousands of people spend their time and real money online even though the achievements in these games may mean nothing in real world.

Another trend that blends the gaming aspects with real life called gamification recently comes into play. Unlike ordinary computer games where experiences and achievements were received through the action in the game world, the achievement such as "book worm" can only be obtained only if the player actually goes to a library physically in real world for a specific number of times. By applying this scheme, it is possible to set the conditions based on social etiquettes such as the university's identities mentioned above as well.

In order to keep track of all the deeds that the students have accomplished, a computer system is required for the data collection and information management. This study aims to design such system. By reviewing the literatures and related systems, suitable criteria were identified and used to design the prototype system. In the curricula year 2014, the system will be used at Rajabhat Rajanagarindra University and the result will be studied further.

2. RELATED WORK

Gamification is defined as the use of game in non-gaming contexts (Deterding, Khaled, Nacke, & Dixon, 2011). Currently, activities such as conducting business and learning in schools and universities are gamified with the hope that gamification helps improve the productivity. Aparcio, Vela, Sánchez, & Montes (2012) analyzed that the following steps should be taken in order to make an effective use of gamification: identify the main objective and the transversal objectives, selection of game mechanics, and analysis of the effectiveness of the system. These steps can be applied as a PDCA cycle and will be used as the basis for this study.

In education environments, gaming is considered nonproductive, especially when the students play unrelated computer games during the lecture sessions. The popularity and advancement of smart phones and tablets also mean that the students have access to gaming platforms all the time. In order to grasp the students' attention, lecturers may choose to gamify their materials and activities using the following scenarios as mentioned by Erenli (2012): leaderboards, badges, level-systems, achievements, rewards and geolocation-services. However, these six scenarios may be grouped into three different aspects that will be experienced by the players.

1. Leaderboards, Achievements and Level-systems

   The use of leaderboards and level-systems are common among general computer games. A player starts playing at the lowest level in the leaderboard and usually starts at level 0 or level 1. After playing for a period of time, the player is leveled up and the position of the leaderboards changed according to the score and the level of the other players in the same game world.

   A study by Decker and Lawley (2013) shown the implementation of a system that used gamification to encourage the students during their first year. The use of level-system was clearly explained. For example, the students are required to interact with faculty members as specified in the predetermined rules in order to advance to the next level. Later on, the players were given tasks and quests to perform either individually or in group to gain points allowing them to level-up. The result of their study suggested that there was a significant change in the students' behavior after introducing the achievement system.

   With the use of leaderboards, the players are more engaged due to the competitive nature of human beings as specified by Burrus (2012). The study also suggested that once the players get better or leveled up, the game should give greater challenges. This makes the higher level players progress slower than the lower level ones. Otherwise, the players joining the game late may be discouraged to play because of the difficulty to catch up with the current players.

2. Badges and Rewards

When a player received an achievement in a game, a reward is usually given to the player. This reward may be represented as points, digital trophy or a badge. Although they have no value in real world, the player may choose to display their trophies and badges similar to the trophies from physical activities. Usually, they will post to social networking services thus making them visible to public and may introduce new players to the game.

One aspect usually found in computer games is repetitiveness. In order to receive a badge, the player is required to perform tasks for a specific number of times. With the motivation to gain new badges, it is possible that the player will improve proficiency through this process. A study by Anderson et.al, (2013) demonstrated the power of badges that even the users' behavior can be influenced by deploying badges on a social media web site.

As in the leaderboard and level-system, the basic badges are usually easier to acquire than the advanced badges to encourage new players. Some activities may require supervision. For example, a learning platform for K-6 students implemented a mechanism so that the actions of the students are explicitly recognized and rewarded by the teachers (Simões, Redondo, & Vilas, 2013). Therefore, the faculty members involved in the rewarding process is required to have computing skills and a good understanding of social gaming.

3. Geolocation-services

In addition to the badge and reward system, another element usually incorporated in the system is a location-based service to confirm the presence of the player. The mechanism called check-in is utilized by well-known social media web sites and services such as Facebook and Foursquare. However, there are occasions where the users did not actually resided at the claimed check-in location especially to acquire the location-specific badges.

To reduce the bogus check-in problem, it is possible to require the approval from a faculty member for each check-in. Decker and Lawley (2013) used RFID to confirm the identity of the students and later on, switched to QR code which can be identified by the teachers' smartphones. However, there are situations where the faculty members are not available to validate the check-ins. A system by Nandwani et al, (2011) demonstrated the use of NFC to physically check-in at the specific location. Thus, the players participated are required to have mobile phones equipped with NFC as well.

3. ENVIRONMENT

The prototype system will be developed and deployed at the department of Information Technology, Rajabhat Rajanagarindra University. Most undergraduate students in the university are comfortable with game playing and social network services such as Facebook, Foursquare and Twitter. However, the majority of the faculty members of non-technology related departments are not familiar with these services. Since the activities such as rewarding and checking-in involve both students and staff, the faculty members participating in this study are required to have the Information Technology and social networking skills. Therefore, this study will focus solely on the students and staff of the department of Information Technology.

The department of Information Technology consists of Computer Science and Information Technology programs. Currently, there are 240 full-time students and 20 faculty members in both programs. Some courses in both curriculums involve application programming for mobile devices. Thus, require the students and staff to have access to smartphones or tablets. The majority of the devices used in the department run Android. Some devices are equipped with NFC making it possible to implement location-based badges.

Although NFC is available in some devices, a unique QR code will be given to each student in the focus group. The focus group of this study is the fourth year computer science and information technology students. All the faculty members will be able to check-in the students using their own smartphones or tablets located at the related locations.

The main objective of the system is to encourage the student to behave as identified by the university's identities: willing to help, eager to learn, and love to work hard. These primary objectives will be set as the top-most level in the system. The faculty members can create new sub-objectives, badges and the related conditions to acquire them. A certificate containing all the badges acquired during the study will be given to all students once they have graduated.

4. SYSTEM DESIGN

Due to the nature of the system where both students and staff will be accessing the system online, it is designed as a web application. Since the devices used to access the system varied greatly, the N-tier design scheme is chosen. By separating the presentation interface from the operation layer, the devices with different screen size and operating systems can be supported easily.

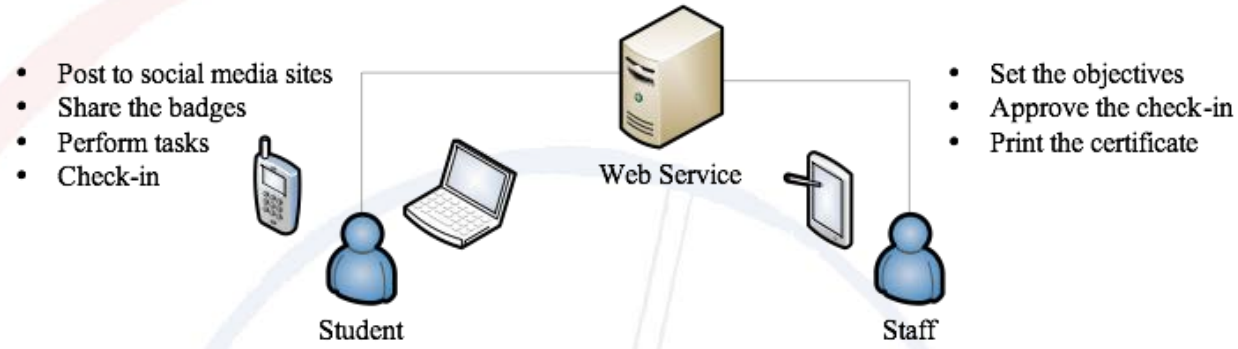

Figure 1 Roles and duties of student and staff

The system is separated into the following modules:

A. Member Management

This module is operated mainly by the responsible faculty members. The initial information regarding the students will be imported into the system. After that, all students are encouraged to enter their detailed personal information such as home address current image and other information. Here, the first badge will be given to the students who have updated their information. To earn the first badge easily, it is possible that they will keep coming back for more chance to get another badge later on.

To make students feel more engaged, this module should incorporate the mechanisms to connect the students' profile to their external social network services. They can choose to create their new avatars or use the same ones they are currently using on other sites.

B. Tasks and Quests Management

As mentioned earlier, the primary objectives are set according to the university's identities. The sub-objectives can be identified by any faculty members. A Quest may contain multiple tasks which may be described as a condition-based rule. Generally, the quests and tasks are identified and displayed clearly in the system so the students know what to do in order to accomplish them. However, they can also be set as hidden tasks. The students who completed the task unknowingly and get the badge may choose to distribute the news to other users. The hidden tasks like this can be used as an incentive so the students may want to venture different activities that may give them new and unique badges.

The tasks and quests are usually set according to the activities of the university, faculty and the department. For example, it may be as simple as attending a ceremony or involving physical activities such as fixing computers in the lab. The level of knowledge required to perform each task will vary to accommodate wide range of students.

C. Badges Management

Badges are the graphical representative of achievements. For example, there may be a badge for the students who offer help to any faculty member twice. Once the deeds are recorded and approved, the badge is obtained and remains in the inventory. While setting up the tasks and quests, the faculty members may choose from the inventory of pre-designed badges or create a new one themselves. The students may choose to share the individual badge or the inventory on social network services. The hard copy of the certificate containing all the badges received during the academic year can also be printed and signed by a faculty member.

To keep the game alive, it is important that new badges are offered regularly. Badges may be categorized into three groups: individual badge, group badge and special occasion badge. Some badges are limited by time and some are limited by the number of participants. These properties can also be set by the faculty members who create the tasks and quests.

D. Reporting

The last part of the system consists of two modules for students and staff. For students, they can login to see the leaderboard and the badge showroom. The available quests and tasks will be shown for the students. Other incidents such as swarming where many students are currently participating will also be shown on top of the report page so the students can rush to the location or action in order to join the activities.

On the other hand, the staff can view the progress of quests and tasks, the leaderboard and the rate of participation of the students. Therefore, they can adjust the difficulty of each task to keep the motivation rate high. Furthermore, the certificate with all the badges printed on the front page can be printed by the staff allowing the students to keep the hard copy of their achievements even when they have graduated.

5. CONCLUSION

The system is designed to be a generic platform to encourage its users. Any objectives and sub-objectives can be added and updated by the staff members as needed. However, the objective of this study focuses on improving the social etiquettes of the students. Thus, the primary objectives "willing to help, eager to learn, and love to work hard" are set as the read-only top most level objectives. The students can log in to the system to monitor their progress and check out new quests. On the other hand, the faculty members can log in to monitor the activities of the students and also approve of the check-ins.
It is believed that by motivating the students to perform the deeds repetitively with the use of gamification and badges, their behaviors can be changed according to the specified objectives. In order to measure the effectiveness of the system, the pretest-posttest method will be used. The lecturers and faculty members in charge of consulting the students in the focus group will be interviewed and the characteristics of each student will be recorded. After the study period has ended, they will be interviewed again to identify the change in the students' behaviors.

The prototype system is currently under construction. It will be used in the academic year 2014. If the system performs as planned, the next phase is to allow open access from all the departments in the university. The system may be open for public use if the concept is proofed useful for wider audiences.

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