

Introducing Gamification to Increase Student Motivation and Engagement

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Abstract

Gamification is a term that has been used in education recently. According to Kapp (2014a), gamification involves applying game design elements to a nongame context to increase student engagement and learning. Students in a university Intensive English Program often find the transition from school to university challenging. To encourage students to “demonstrate behavior and attitudes appropriate to a university environment”, which is one of the course goals, elements of gamification were introduced to motivate a group of 30 students to participate actively in class, submit assignments on time, work together collaboratively, and work independently to strengthen their skills. Students were awarded “experience points” (XP) for demonstrating these behaviors. Opportunities to gain additional XP for both individual and group challenges were made available and students could claim points for doing extra work using a Google Form. The points were added up using an Excel sheet and the leaderboard was updated every week as a motivator and to encourage competition. When students accumulated a certain number of points, they moved to a higher level and received a virtual badge. Achieving specific levels resulted in an individual or class-wide reward. A self-evaluation survey was administered to the students at the end of the course to assess the effect of the game structure on their motivation and performance. The results were positive, showing that the students enjoyed the gamification aspect of the course and felt motivated to complete the course requirements and do extra work.

Keywords: gamification, motivation, university students, language learning

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Introduction

In the Intensive English Program (IEP) of The American University in Cairo, students attend five hours of class per day and are expected to do daily assignments. The final exams are heavily weighted, and students need to work hard throughout the semester in order to perform well on the exams. The program has high expectations, and students are expected to meet several learning outcomes including “demonstrating behavior and attitudes appropriate to a university environment” by being on time, being prepared for class, adhering to deadlines, participating in class discussions, being independent, and taking responsibility for their own learning.

For many students, the transition from school to university is quite challenging, and they often have difficulty living up to the expectations. The IEP is very demanding, and some students lose motivation half way through the semester and stop working hard, and this can affect their performance on the final exams. The purpose of this study is to increase student motivation through gamification to encourage students to continue to exert effort throughout the semester.

An introduction to gamification in education

Gamification was introduced in an attempt to keep the students motivated throughout the semester so that they perform their best on the end-of-semester exams. Much like online games such as Kahoot!, gamification of a course includes specific elements intended to motivate students, such as using code names, receiving frequent feedback, monitoring progress on a leaderboard, and earning awards.

Gamification is widely used in different contexts. For example, online games award points or stars for completing a round or achieving a certain level; fitness trackers award badges for taking a certain number of steps per day; shops award loyalty points to be spent in store to encourage shoppers to buy more from the shop or chain, etc.

More recently, gamification was introduced in education and has become popular as a way to motivate students. According to Kapp (2014a), in gamifying education, in order to increase student engagement, elements of game design are applied to an educational context, and the structure of the course is modified. However, the content remains unchanged. Gamification can be applied to a whole course or to a specific component of a course. According to Kapp (2014b), the gamification of learning should include the following elements:

- Goal: students strive to gain “experience points” (XP) for demonstrating the required behaviors. XP are different from grades and do not affect the student’s final placement. Students are often very interested in grades, and part of the incentive to introduce gamification is to divert the students’ attention away from grades and to engage them in earning XP, which helps the students monitor their own progress through the gamified component of the course.
- Competition: students compete against each other to earn the most points.
- Cooperation: group challenges are also included to encourage students to cooperate to complete the task.
- Rules: the game rules should be predictable and clear as this empowers students by giving them control and allowing them to gain more points.

- Objectives: the activity should address the learning outcomes that the students are required to achieve.
- Feedback: students receive regular and timely feedback as this increases motivation.
- Failure: students should become comfortable with the idea of failure as the road to success always includes some failures, and students can keep trying until they achieve their goal.
- Achievements: students can earn points for two types of achievements: “measurement achievements” if they perform at a high level, and “completion achievements” simply for completing the task, regardless of how well they do.
- Levels: when students earn a specified number of XP, they move to the next level in the gamification experience.
- Badges: students earn badges for achieving a certain level, completing a series of assignments, demonstrating a specific behavior, showing mastery of specific information, etc.
- Leaderboard: XP are plotted on a leaderboard to show the total points earned and the rank of each student in relation to the rest of the class. Code names are used to ensure the anonymity of the students.

The gamification model implemented in the study

Students in the IEP at the American University in Cairo should “demonstrate behavior and attitudes appropriate to a university environment”. In addition, to perform well on the final exams, students are strongly encouraged to do extra work outside of class to strengthen their language skills. The current study, therefore, introduced gamification to achieve two main goals: the first was to give students an incentive to be on time, be prepared, check the class site regularly, participate appropriately in class, and submit assignments on time; the second was to encourage students to do extra work and out-of-class activities in order to strengthen their skills.

This study involved thirty intermediate-level students of English who attended class for one hour per day, four days a week, for one fourteen-week semester. Opportunities to gain XP for both individual and group challenges were made available to the students as follows:

- Daily XP: students earned 10 XP every day for coming to class on time and being prepared.
- Homework XP: points were awarded for completing assignments on time.
- In class XP: active class participation and engagement also earned students XP.
- Bonus XP in response to challenges: the teacher offered bonus XP to increase student motivation to demonstrate specific required behaviors, such as responding to questions posted by the teacher on the class site, participating in class discussions, bringing the textbook to class every day for a week, etc. Group challenges were also introduced where all students in a group or class received bonus XP if all students in that group completed an assignment.
- Bonus XP for completing extra work: the teacher provided a list of possible tasks for the students to do at home to strengthen their skills, and each task was assigned a corresponding number of XP for students to earn upon completion. For example, if a student listened to and took notes on a TED talk, 10 XP would be awarded; completing an online listening activity would award the student 3 XP, etc.

Students claimed their XP using a Google Form where they submitted notes or a screenshot as evidence of the completed task and requested the corresponding number of XP.

The XP were added up using an Excel sheet, which generated a graph that served as the leaderboard. The leaderboard was updated every week as a motivator and to encourage competition. Students could see their total score and their rank in relation to their classmates, and they knew what to do to earn more XP. Their identity remained anonymous by using code names of their choice. As students earned more points, they reached different levels, and earned badges for each level. For example, when a student earned 300 XP, the student reached level 1 and was awarded the Amateur Badge. At 600 XP, students reached level 3 and earned the Semi-pro badge, and were presented with a certificate of achievement. When all the class reached level 3, the class was rewarded by having a lesson outside the classroom, for example visiting an art exhibition and having the students select a painting to write a reflection on, or having a class discussion in the garden. As students progressed through the six levels, it became more challenging to achieve the next level, which is typical of most games. The teacher also awarded badges to reward specific behaviors. The points and badges were awarded virtually by posting them at the end of each week on each student's Level Chart Google Doc, and this allowed students to keep track of their progress.

Results of student feedback

A student self-evaluation survey was administered at the end of the semester to assess the effect of the game structure on the students' motivation and performance. Students responded to each question on a five-point Likert scale, ranging from strongly agree to strongly disagree. The students' feedback was very positive, with most responses in the Strongly Agree and Agree categories. Very few responses were in the Uncertain category, and no responses were in the Disagree or Strongly Disagree categories. See table 1 for the questions and distribution of responses across the three categories that were selected. The survey was completed by 30 respondents.

Table 1: Survey questions and distribution of responses

Question	Strongly agree	Agree	Uncertain
I was motivated to follow instructions carefully.	14	15	1
I was motivated to submit my assignments on time.	13	12	5
I made an effort to be prepared for class.	15	14	1
I was motivated to work collaboratively with my classmates.	11	15	4
I have learnt skills that will help me succeed in my freshman year courses.	13	16	1
Seeing my progress on the class leaderboard was motivating for me to do better.	14	14	2

The two questions where a few students selected the Uncertain category were submitting assignments on time and working collaboratively with classmates. Some

students continued to struggle with time management, and a few students preferred to work individually and resisted group work.

Students were also given the opportunity to write comments. In response to a question about the things the students liked most about the reward system, they mentioned increased motivation to do their best, knowing their level, the bonus points, and the opportunity to target new levels. Regarding the things that students thought should be improved about the reward system, they mentioned that they wanted more frequent rewards that are easier to achieve, and an easier method of claiming the bonus XP.

Implications for the future

Based on the results of the student feedback survey, there are two points to work on in the future to make this game structure more effective. The first is to offer more frequent rewards. As mentioned earlier, the first levels were easier to achieve than the more advanced levels, and some students took several weeks to move from one level to the next in the second half of the semester. More rewards could be made available to the students, and a wider variety of rewards could be used. For example, students could earn privileges, in addition to XP and badges. These could include the chance to choose the topic for the next debate, the chance to choose a partner for an activity, etc.

In order to address the students' second recommendation of an easier method of claiming the bonus XP, more class time can be invested early in the semester to provide technology training to ensure students know how to take a screenshot of their work and send the link to the teacher via the online form. While this was manageable for most students, some did struggle with the technological skills required for this.

In reflection, the group challenges and class-wide achievements that required students to work together were received very positively by the students, and including more group challenges will allow students to develop their team work skills and help each other to achieve the goal.

Conclusion

The results of the survey indicate that the students enjoyed the gamification aspect of the course. They reported that they felt more motivated to complete the course requirements, and many students did extra work in order to earn the bonus XP.

Since student motivation is often a challenge in the IEP, these findings are very positive as they indicate that introducing a simple game structure can have a positive effect. In addition, extra practice is very beneficial when learning a language and developing language skills, and this game structure motivated students to do extra work, which indirectly should contribute to increased success rates. Although this was not formally measured in this study, there appeared to be a correlation between the total number of XP earned and the scores on the final exams. This shows that the students who did the most work in and out of class tended to score higher on the final exams. Future research could be done to measure this correlation in a more formal way.

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