

Gamification

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One needs to make a distinction between the use of games in education and gamification. Games are common ways of passing the time and having fun. Gamification is more about using the elements of games that motivate people, and applying them to educational experiences. These elements can take many different forms, from short activities done in a face-to-face setting to large, open-ended digital experiences that are technology driven.

Recommendations

These recommendations focus mainly on how gamification can be applied on module level where it is most effective. To apply these recommendations, academic management needs to foster a culture of educational innovation and informed risk-taking among lecturers. The following measures to achieve this are recommended (Marquis 2013):

- *Turn grades into achievements:* Games consist of many small achievements that need to happen for larger objectives to be reached. By acknowledging smaller, more discrete units of learning, lecturers can better track progress and students can receive immediate feedback on their progress towards a larger goal. Moving towards an achievement-based model of education enables self-paced progress by the students.
- *Emphasise skills and knowledge over information:* With information freely and widely available from a huge range of connected portable devices, students do not need more information: they need practical skills and knowledge; in other words, actionable information. These essential skills can include critical thinking, technology literacy, problem solving, collaboration, self-directed learning and any specific skill needed for the field of study. An effective way of developing these skills is by implementing project-based learning where students need to deliver concrete outputs and create knowledge.
- *Make space work in your favour:* Lecturers are in control of the spaces where learning takes place. Every element in a module, from the physical space where learning takes place to virtual resources available to students, can support the learning objectives of a course. For instance, if physical spaces are designed to be flexible and adjustable, they can be used to increase interest and engagement from students by allowing more effective collaboration. Online spaces can be used in the same manner to add elements of surprise and fun to the module.

Definition

According to Burke (2014), the Gartner organisation defines gamification in general as 'the use of game mechanics and experience design to digitally engage and motivate people to achieve their goals'. If this definition is explored with the specific focus on the gamification of learning, it contains the following elements:

- Game mechanics includes the key elements that are common to many games, for instance, points, badges and leader boards. By defining the elements that make games fun and motivate players to continue playing, they can be implemented in educational settings to have the same effect.
- Experience design describes the journey of the players, the setting of the game elements and the plot of the story with which they engage. Game elements are arranged into the system that coordinates with the learning that happens through a course.
- In a blended learning course, gamification is a way to engage with students digitally rather than to personally interact with them. This is achieved through the use of learning management systems (LMSs), smartphones, tablets or other digital devices.
- One of the main goals of gamification is to motivate people to change their behaviour or develop specific skills. In an educational context, gamification has the potential to influence class attendance, student engagement with course content and peer interaction.
- Gamification focuses on people achieving their goals. When students' goals are aligned with the goals of the organisation or institution, the alignment can be very effective.

Implementation

According to Burke (2014), gamification has just emerged from the 'peak of inflated expectations' and is now sliding down into the 'trough of disillusionment' (terms used by the Gartner organisation in its hype cycle: <http://www.gartner.com/technology/home.jsp>). Early successes in

using this technology were widely publicised as being the key to changing people's behaviour and motivating them to achieve the goals of an organisation or institution. As the technology developed, however, it became apparent

that this can only be achieved through effective design and implementation.

To gamify a concept or course effectively, a five-step process can be followed:



Figure 1: Five-step process of gamification (Huang and Soman 2013)

Elements of gamification can be harnessed for educational purposes in the following ways (Education Arcade 2015):

- *Progression*: to see success visualised incrementally
- *Levels*: to unlock content
- *Points*: to increase the running numerical value of your work
- *Investment*: to feel pride in your work
- *Achievements*: to gain public recognition for completing your work
- *Appointments*: to receive new challenges
- *Epic meaning*: to achieve something sublime or transcendent
- *Collaboration*: to work with others to accomplish goals
- *Virality*: to be incentivised to involve others
- *Cascading information theory*: to unlock information continuously
- *Bonuses*: to receive unexpected awards
- *Countdown*: to tackle challenges in a limited amount of time
- *Discovery*: to navigate through your learning environment and uncover pockets of knowledge
- *Loss aversion*: to play to avoid losing what you have gained
- *Infinite play*: to learn continuously until you become an expert
- *Synthesis*: to work on challenges that require multiple skills to solve

These gaming elements should be explicit throughout a course in order for students to engage with them consciously. The aim of gamification in learning is to create fun. It does not imply coercion or hidden agendas: 'Gamification is the craft of delivering all the fun and addicting elements found in games and applying them to real-world or productive activities' (Chou nd). Yu-kai Chou calls this 'human-focused design'. He gives ten examples of gamification in education settings that will be game

changers in the coming years (<http://www.yukaichou.com/gamification-examples/top-10-education-gamification-examples/#.VcYlrrUalqQ>).

Costs

Operational costs involved in the successful implementation of gamification, be it for a module, to develop a specific skill in students or to cause a change in behaviour, is dependent on the experience and skills of instructional designers within the organisation and their ability to apply gamification. The lack of mobile technology in the hands of students does not have to be a hindrance for successful implementation as long as it is planned. Most LMSs already include gamification tools that do not require additional licence fees: for instance, Blackboard's achievements (badges) system. Therefore, the costs involved in the successful implementation of this technology are mostly dependent on the time spent on careful planning and preparation.

Benefits of gamification

Within games, students experience opportunities of autonomy, competence and relatedness (Ryan and Deci 2000). Gamification has the potential to:

- increase the fun and enjoyment of lectures and course material;
- give students ownership of their learning;
- make learning and progress more visible;
- inspire students to find intrinsic motivators for their learning; and
- make a course seem less daunting to students as it is broken down into achievable tasks.

According to the well-known game designer, Jane McGonigal, games have the potential to engage students, whom she describes as 'urgent optimists', to be part of the 'social fabric in blissful productivity', while they are looking for 'epic meaning' (McGonigal 2011).

Conclusion

Successful implementation of gamification in education requires purposeful planning and continuous adjustment, driven by reflection and feedback. Nevertheless, it has the potential to transform information delivery from

a mundane task into an addictive learning experience. Students can acquire skills and knowledge by using learn-by-failure techniques that minimise negative emotions. Increased motivation can result in prolonged engagement with the content of the module by repeating activities until students have achieved mastery. Gamification is a powerful strategy for increasing student pass rates and successful course delivery.

Glossary

LMS	Learning management system
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References

- Burke, B. (2014). *Gamify: how gamification motivates people to do extraordinary things*. Brookline, MA: Bibliomotion Inc.
- Chou, Y-K. (n.d.). <http://www.yukaichou.com/> (accessed 8 August 2015).
- Education Arcade (2015). Gamification infographic, [gamification.org. http://www.knewton.com/gamification-education/](http://www.knewton.com/gamification-education/).
- Marquis, J. (2013). 5 easy steps to gamifying higherEd, Classroom Aid. <http://classroom-aid.com/2013/08/16/5-easy-steps-to-gamifying-highereed/>.
- McGonigal, J. (2011). *Reality is broken: why games make us better and how they can change the world*. New York, NY: Penguin Press.
- Ryan, R.M., & Deci, E.L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 68-78.
- Huang, W.H-Y., & Soman, D. (2013). *A practitioner's guide to gamification of education*. Toronto: Rotman School of Management, University of Toronto.