

**An instructor perspective of personal reflection on implementing an online  
game-based learning activity: The good, the bad and the ugly**

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**Abstract**

A paper-based version of game-based learning activity has been upgraded to a mobile application version in an online course. The purpose of this session is to have a dialogue about a critical evaluation of the paper-based version of the gamified activity and discuss how the mobile version of the gamified activity helps to address the shortcomings of the earlier version of the activity. An instructor perspective of personal views and reflection of both the paper-based and mobile versions of the gamified activity are discussed.

**Keywords:** gamification, transversal skills, management education

## **Introduction**

Engaging online students is often a challenge to many academics in higher education. It is even more difficult to teach transversal skills such as teamwork, problem solving and critical thinking when face-to-face interaction is not available in an online environment. While employers highly value transversal skills, they often indicate that university graduates are lacking such essential skills, especially at a time of quickly changing demands in the labour market. Therefore, there is a high demand for transversal skills development and the ability to efficiently apply such skills across various sectors in order to respond to the increasing requirements of today's advanced knowledge-based economy. All this prompted the authors of this paper to share their personal reflection on implementing an online game-based learning activity in an online course. Initially, a paper-based version of game-based learning activity was developed in an online course. Despite positive feedback, student comments revealed that there were several limitations with the paper-based version of the activity. Accordingly, a mobile version of the gamified activity was developed according to the student feedback. This paper will form a critical evaluation of the paper-based version of the gamified activity and discuss how the mobile version of the gamified activity helps to address the shortcomings of the earlier version of the activity. An instructor perspective of personal views and reflection of both the paper-based and mobile versions of the gamified activity will also be discussed.

## **Theoretical Foundation / Teaching Implications**

In the paper-based version of the game-based learning activity, online students were divided into two main groups: The police and prisoner groups. There were sub-groups in each of the main groups. All the groups were able to travel to different locations on a paper-based map in Portable Document Format using various delegated resources including buses, trains, police cars, stolen cars, taxis and helicopters (see Figure 1). The objective of the police group was to catch the prisoner group within the required time limit, whereas the prisoner group was

to avoid being caught given the time limit. All groups communicated to their respectively fellow groups (e.g. police to police and prisoners to prisoners) via a Moodle discussion forum.

**Figure 1.**

Map of the team-based activity and resources used by students in the team-based activity



Following the game-based learning activity, we conducted a survey on student learning in an online knowledge management course in Semester One 2016. Results showed that student engagement in the exercise was intense. The majority of students were very excited after they became aware of the exercise. It was evident that some students started engaging each other via the discussion forum, and they were trying to assign roles in their groups even before the semester commenced. This intensive student engagement was a positive outcome to the authors and was what the authors would like and expect to see after implementing the paper-based version of the online game-based learning activity. Many students thought the online exercise helped them to apply the concepts and theories in the online course in a ‘close to real life’ but fairly safe situation. Many students were willing to go extra miles to meet at late hours and discuss for extra hours in making decisions. Through these intensified discussion they learned to appreciate, compromise, negotiate, influence, create ideas, accept others’ ideas and suggestions, initiate changes and take calculated risks. These transversal skills could be important managerial competencies at the workplace (Chong, 2013).

Though the paper-based version of the exercise was proven to be an effective tool for enhancing online student engagement and learning, the student feedback revealed that it was less flexible and mobile, particularly for online mature students who are mostly working full time, having a busy work schedule and travel frequently. More specifically, students found that while the exercise was an exciting initiative for engaging online students, it was very difficult for online students (from various backgrounds and different time zones) to communicate and work together for an online team activity via the Moodle discussion forum as this would mean students would need to be online simultaneously. From the instructor perspective, it did take a tremendous effort and time to monitor group discussion and interactivity. As almost everything with the paper-based version of the activity was done manually, it would seem to be almost impossible for any instructor to provide the necessary support to students when they were engaging in the activity, especially when the enrolment of the online course could reach up to 150 students or more. Thus, our initial study provided us with a good foundation of what instructors might need to do to assist student learning in an online environment through an online gamified activity and why instructors often hesitated to utilise game-based learning approach in their online teaching. Despite these challenges, the authors of this paper still perceive that an online game-based learning is a promising and encouraging approach in terms of engaging online students to learn complex subject knowledge of an online course and practise transversal skills.

Building on the initial feedback and personal reflection, an innovative and highly interactive mobile application of the game-based learning activity is being developed to address the challenges with this online game-based learning approach. The mobile version, which can be used in various devices including mobiles, iPad, laptops, and desktop computers, is designed to be more active, collaborative and engaging for enhancing the quality of online student experiences (see Figure 2). It allows students to participate in the activity with greater

flexibility and mobility, which is useful for students who are always on the run or travelling. It also allows students to work together even in different countries at different time zones. Furthermore, with this mobile application on-campus students will be able to participate in the classroom like the external students or may even be able to interact with the external students simultaneously. The mobile application of the team exercise opens up a lot of opportunities for students from different modes (blended learning modes) to learn simultaneously.

**Figure 2.**

Screen captures of mobile application of the team exercise

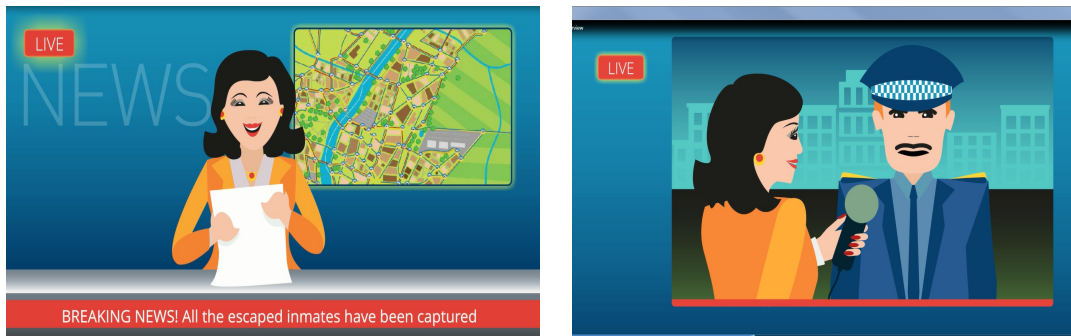


With the mobile interface, the game-based activity is upgraded with more features and capacity (see Figure 3). The new version of the exercise is embedded into Moodle for easier access. A ‘whatsapp’ style of communication is incorporated, which allows students to communicate instantly no matter where they are. Other features including online help, chat history, resource indicators, and reports are added. These provide a user-friendly interface for students. Short videos featuring animated cartoon characters explaining the background stories and key ideas are added to make the exercise more interesting, interactive and fun. Through this enhanced online learning environment, students are to be more engaged in learning critical skills such as knowledge management, team learning, people management, resource and time management, interpersonal and negotiation skills, and strategic planning. The images below indicate how the animated videos look like in the new version of the team exercise (see Figure

3). The mobile version of the gamified activity will be fully implemented in 2020.

**Figure 3.**

Screen captures of the gamified activity



### **An instructor perspective of personal reflection**

Even though the mobile application has not been fully implemented, we would like to share our personal views of what the possible effects of a mobile version of the game-based learning activity on student learning as compared to that of the paper-based version in previous study. We believe it was important to share our personal reflection so that anyone who is interested in adopting this approach could be more aware of the challenges or unlock the black box of how to use both the mobile application and the paper-based version of the gamified activity.

The specific objectives of this new teaching initiative are to assist students to acquire and develop transversal skills. The mobile application will be used in the same online undergraduate course related to knowledge management and organisational learning which is designed to enable students to learn critical skills such as knowledge sharing/creation, team learning, people and resource management, time management, interpersonal and negotiation skills, risk taking and strategic planning. Like the paper-based team activity, students will need to negotiate with their own group members (either police or prisoner groups) for making decisions on where they will be travelling to and what resources (types of transportation) they will be using for travelling in the mobile application. Both police force and prisoner groups

will need to plan every move strategically in order to gain strategic advantage and achieve their objectives. Through the exercise, students are expected to learn critical skill set, including knowledge sharing and acquisition for strategic decisions (Braunerhjelm et al., 2010); effective communication (Cornelissen, Clarke, & Cienki, 2012); team building skills (Hixon, 2008); pursuit of opportunity beyond the resources that are available (Su et al., 2011; Thompson, Alvy, & Lees, 2000); learning to lead (Kempster & Cope, 2010), team learning (Iacobucci & Rosa, 2010); time management and strategic planning (Brinckmann, Grichnik, & Kapsa, 2009). Also, through knowledge sharing they will be able to create innovative ideas, approaches and knowledge to achieve their group objectives (Pavlovich & Corner, 2006). For instance, students may creatively develop routines and practices to exchange/share/acquire knowledge and resources in order to gain win-win strategic advantage. All these skills are critical for graduates in the knowledge economy (Coulson-Thomas, 2003).

An online survey of the game-based learning activity will be conducted. Considering that a combination of student differences, such as prior experience or competency, personality, educational ability and gender, may influence learning outcomes (Boyle et al., 2012; Chory & Goodboy, 2011; Jenson & de Castell, 2010; Kinzie & Joseph, 2008; Witt, Massman, & Jackson, 2011), we will invite them to participate in a pre-test and post-test experimental group, and fill in an online questionnaire before and after the gamified activity in order to examine their understandings of the critical skills of the course in online environments using a mobile application. Examples of questions in the online questionnaire included: 'How did the team exercise assist you to understand the critical skills in the course?' We expect to identify some positive effects on student learning through the pre-test and post-test experimental group design in the online course with the mobile version of game-based learning activity. In addition, this mobile version may be more effective in enhancing students' learning

experiences than that of the paper-based.

The mobile application is designed to address the challenges that we face when we were using the paper-based gamified activity. However, the authors did experience some challenges such as considerable activity development time and limitation in terms of iterations after the mobile application had been developed. The development team who designs and develops the mobile application is not designated to work for this project solely. In other words, they are working for other projects simultaneously. This does create some delay of the project and the progress of the development was postponed a few times. However, the authors believe the team has already accomplished what they can. While the mobile application is designed to be more flexible and mobile, it is unlikely that it may suit everyone as some students' computer literacy skills vary. All these needed to be considered in the implementation of an online game-based learning approach.

### **Session Description**

This session will run as a facilitated discussion. We will begin the session by introducing to attendees about (1) the mobile application of our game-based learning activity in an online learning environment, and (2) how the mobile version of the gamified activity helps to address the shortcomings of the paper-based version of the activity. This initial audience participation will serve as an ice breaker for the roundtable discussion, and attendee comments will also be documented and referenced throughout the session to facilitate participant involvement. Following the session introduction, we will quickly return to the audience input from the beginning of the session to explore how our critical evaluation relates to participants' anecdotes of positive and negative experiences when teaching transversal skills and/or using mobile application in online environments. While the remaining discussions will be largely dictated by the attendees' experiences and interests, we provide some topics below that we are both prepared to discuss and address pertinent issues related to teaching transversal skills



and/or using mobile application in higher education:

1. Timing of activity and assessment. When should be the best timing to administer the game-based learning activity and assessment respectively? Right after the activity is finished, one week after it is finished, or any other possible arrangements?
2. Appropriateness of the mobile application version of game-based learning activity (or other instruments) in addressing the teaching objective(s) in online environments. What activity or instrument is best suited for teaching transversal skills? How do they evaluate the effectiveness of the mobile version of game-based learning activity in addressing the teaching objective(s)?
3. Type of students. How does teaching undergraduate versus postgraduate courses, and local versus exchange students, relate to the appropriateness of our mobile version of game-based learning activity and the assessment method instructors could implement to reach the learning outcome(s)?
4. Role of instructors. What is the role of instructors throughout the teaching and learning processes (e.g., how to better interact with online students, how to encourage online students to connect with one another)?

Taken together— we aim to provide empirical evidence from the students we have sampled, in combination with instructor experiences, to develop fresh perspectives on how to use our game-based learning activity effectively in online environments. As a tangible take-away, we will also provide attendees with access to our game-based learning activity using mobile application. With this trial experience, attendees can better plan their pedagogical design and delivery for upcoming semesters by considering the use of our game-based learning activity and the insights gained during this roundtable discussion. In doing so, we aim to fulfill the underlying goal of this session: for attendees to reflect on their goals, designs and delivery when using our mobile application of game-based learning activities in online environments.

This session will contribute to effective teaching and learning in the field of management by promoting reflection and reassessment of the approaches we use to provoke learning.

### Session Timeline

Phase	Summary	Purpose	Duration
Opening	Session introduction	Introduce the mobile version of game-based learning activity	10 minutes
Discussion	Solicitation of attendee feedback	Solicit feedback on critical evaluation	15 minutes
Closing	Access to mobile application version	Assist attendees in accessing the mobile application of gamified activity	5 minutes

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