

**Title: Gamifying Formative Assessments for Student Engagement:
The First Real How-To**

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Session Learning Outcomes

By the end of this session, delegates will be able to:

- LO1: Recognise the fundamentals of gamification and engagement theory
- LO2: Apply a theoretical framework to relate engagement and formative assessment
- LO3: Analyse a game by its composite game attributes
- LO4: Justify the use of a game attribute in a gamified formative assessment Outline

Session Outline

Over the past three years, Edinburgh Napier University has invested significant resources in supporting a programme-focused approach to learning. Vital to this is the effectiveness of highquality formative assessments in its modules. However, formative assessments in their truest form risk a lack of student engagement due to the very qualities which make them effective learning tools such as being voluntary, non-credit bearing, or focusing on feedback over marks (Nicol & Macfarlane-Dick, 2006). Due to the widespread success of gamification as a tool for engagement in other sectors, Edinburgh Napier University initiated a study to assess the impact of gamification on student engagement with formative assessment.

To accomplish this task, we sought to develop a theoretical basis for gamified learning in higher education through a rigorous consolidation of the more robust and parsimonious theoretical frameworks for student engagement (Kahu, 2013), gamified learning, and assessment (Landers, 2014). The resulting Gamification for Engagement Framework (GEF) serves two purposes: it provides a means for observing gamification's impact on student engagement while minimising subjectivity; and serves as the foundation for a unique step-by-step process that enables lecturers to gamify formative assessments according the targeted student behaviour/attitudes they believe will support their desired learning outcomes.

Having now moved past the theoretical phase, we have now entered the implementation and evaluation phase of the study. To date, 5 lecturers have undergone training in the implementation of appropriate gamification, with 2 new volunteers for the upcoming

trimester. 7 modules have participated in the study, with further data currently being collected. Qualitative and quantitative data has been collected from 130 students, with more to come and analysis is currently underway, the initial results demonstrate positive changes in student preparation, effort, and usage of feedback in formative assessments. The lecturers who have undertaken the gamification training offered by the study unanimously consider the experience to be valuable, and we now wish to make this available to a wider pool of participants.

Session Activities and Approximate Timings

10 min: Introduction: What is gamification, what is it not, and what are game attributes?

10 min: Discussion: The role of learning outcomes in the Gamification for Engagement Framework.

3

10 min: Activity: Expand learning outcomes on an example formative assessment

10 min: Discussion: The role of Kahu's engagement framework in the Gamification for Engagement Framework

10 min: Activity: Group A identifies target causes of engagement, Group B chooses the appropriate behaviour/attitude to target with gamification using the GEF.

10 min: Discussion: Re-engineering your formative assessments – understanding your formative assessments through the language of game attributes. 20 min: Activity: Separate into groups and break a game down into game attributes and choose the most appropriate one for gamification of the formative assessment. 10 min: Questions

References

Kahu, E. R. (2013). Framing student engagement in higher education. *Studies in Higher Education*, 38(5), 758–773. <https://doi.org/10.1080/03075079.2011.598505>

Landers, R. N. (2014). Developing a Theory of Gamified Learning: Linking Serious Games and Gamification of Learning. *Simulation & Gaming*, 45(6), 752–768. <https://doi.org/10.1177/1046878114563660>

Nicol, D. J., & Macfarlane-Dick, D. (2006). Formative assessment and self-regulated learning: A model and seven principles of good feedback practice. Published in *Studies in Higher Education*, 31(2), 199–218. Retrieved from http://www.reap.ac.uk/reap/public/Papers/DN_SHE_Final.pdf