The two-edged sword of gaming: The benefit of gaming in territory education

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Start

- Gamification is the use of game elements in non-game contexts (Deterding et al., 2011.)
- 71% studies show positive learning results from the use of gamification (Majuri, 2018.) 12 ⭐

Wanna know some examples of gamification?

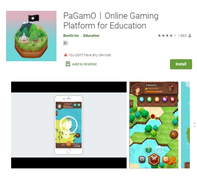
No

Yes

Who wants to be a Millionaire

8 ⭐

PaGamO



成語偷菜

codeSpark Academy

10 ⭐

- Responses form 180 students form FOUR classes. 8 ⭐
- In contrast to their responses in exercise format, 19% of students choose risk taking even the expected value is negative.
- Results helps students to learn how behavioural bias affect investing decision.

Wanna know about the pros or cons of gamification?

Cons

Pros

Cons 10 ⭐

1. Effects are limited in certain types of questions, like coding and proof.
2. Time-effectiveness is doubtful, the problem is severe in territory education with course duration of only 13 weeks.
3. Resistance from students on the reward system, as it is similar to attendance.

Wanna know about the bright side?

Yes

No

Yes

Pros 6 ⭐

1. Strengthen students' understanding on subject-knowledge, by putting themselves into other people's shoes.
2. Foster feelings of enthusiasm towards the subject.
3. Keep students' attention in the class, and increase their engagement.

Wanna know about the cons?

No

Adding Game Elements to class[1,3,4,5,7]

1. Story (Fantasy)
2. Choice
3. Rewards
4. Rapid Feedback
5. Interaction

10 ⭐

Wanna know more about the meanings of game elements?

Yes

No

8 ⭐

12 ⭐

1. Story: Narrative can helps students to process information and provide a meaning to their studies.
2. Choice: Students feel something is at risk when they have to make a decision. It can increase their attention on the class and engagement with the subject.
3. Rewards: Variable rewards are scheduled into the learning experience to provide extrinsic motivation for students to solve the problem at hand.
4. Rapid Feedback: When the time between action and feedback is short, students are more excited to learn and participate.
5. Interaction: Interaction among students leads to greater learning satisfaction.

6 ⭐

6 ⭐ **Example in the class**

The expected value (EV) is calculated by multiplying each of the possible outcomes by the likelihood each outcome will occur and then summing all of those values.

Invest: $2 Success: +$3 Fail: $0

$$EV = 0.5(3) + 0.5(0) = 1.5$$

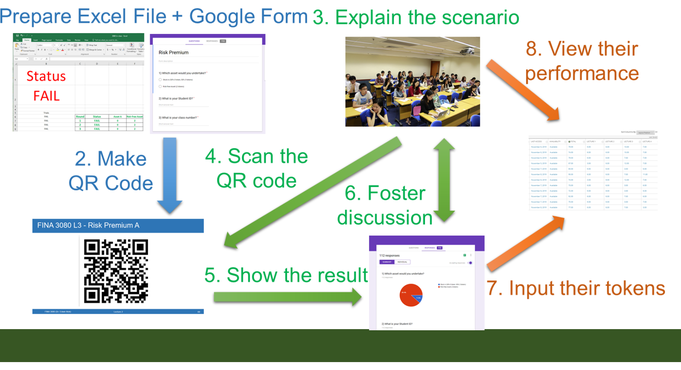
98%+ students know that they should not invest, as EV is less than their investment.

8 ⭐

Application 12 ⭐

Before Class / During Class / After Class

1. Prepare Excel File + Google Form
2. Make QR Code
3. Explain the scenario
4. Scan the QR code
5. Show the result
6. Foster discussion
7. Input their tokens
8. View their performance

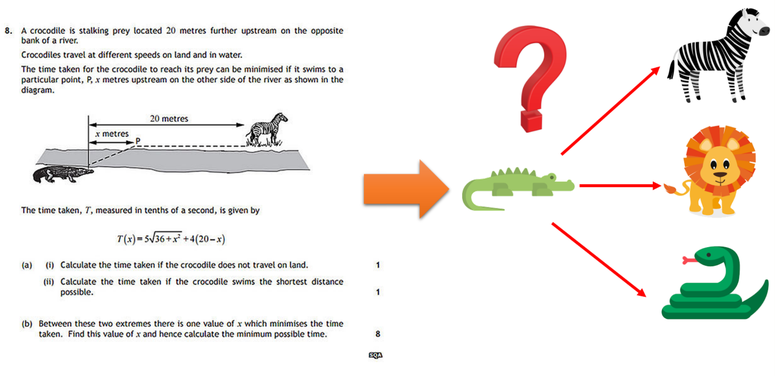


Examples

What is the greatest dynasty in the past? 6 ⭐

⇒Paraphrase to:

⇒Which dynasty in the past would you most like to live in, and why?



If you are interested in gamification in learning, please contact me at:

- edwinmok@cuhk.edu.hk
- 9839-2947 (WhatsApp)

100 ⭐

Yes

TAKEAWAYS

1. Get started with two to three activities. 20 ⭐
2. Make the scenario simple.
3. Give a story: Students respond favourably to questions related to the real world.
4. Foster interaction with students and among students.

Wanna know my contact info?

No

Thank you 8 ⭐

Don't forget to find out your performance based on the STARS you get!

Excellent: 100+ ⭐ Very Good: 76 – 100 ⭐ Good: 51 – 75 ⭐ Fair: 26 – 50 ⭐ Poor: 0 – 25 ⭐

Finish

- Buckley, P., & Doyle, E. (2016). Gamification and student motivation. Interactive learning environments, 24(6), 1162-1175.
- Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). From Game Design Elements to Gamefulness: Defining "Gamification". In A. Lugmayr et al. (Ed.), MindTrek 2011 (pp. 9-15). Tampere, Findland: ACM.
- Garris, R., Ahlers, R. & Driskell, J. E. (2002). Games, motivation and learning: A research and practice model. Simulation & Gaming, 33(4), 441-467.
- Kapp, K. M. (2012). The gamification of learning and instruction (p. 93). San Francisco: Wiley.
- Majuri, J., Koivisto, J., & Hamari, J. (2018). Gamification of education and learning: A review of empirical literature. In Proceedings of the 2nd International GamiFIN Conference, GamiFIN 2018. CEUR-WS.
- Nicholson, S. (2015). A recipe for meaningful gamification. In Gamification in education and business (pp. 1-20). Springer, Cham.
- Wilson, K. A., Bedwell, W. L., Lazzara, E. H., Salas, E., Burke, C. S., Estock, J. L., ... & Conkey, C. (2009). Relationships between game attributes and learning outcomes: Review and research proposals. Simulation & gaming, 40(2), 217-266.