Developing critical thinking skills through gamification in learning

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Ideal environment



CONVENTIONAL LEARNING VS PERSONALISED LEARNING

Conventional learning

- · Setting relies on passive students
- Course material is predetermined via textbook
- Uses generic model that does not account for student's preferences and unique character.
- Somewhat ineffective and boring



Personalised learning

- Teachers' role is to guide in a collaborative and interactive setting
- Student centred independent to search out sources and experts online
- Students have the power to focus on their interest and personal goals

What is gamification?

'the use of game design elements in non-game contexts' (Deterding, S. et al, 2011)

The concept of gamification is defined as transforming activities, system capabilities, services, products or organisational structures into gaming experiences (Hamari, J., 2014)

"..to create competition between two different parties and learn through the competition" (Al azawi et al., 2016)



Why gamification?

Easy and attractive (Rahman, Ahmad & Hashim, 2018)

Helps students in socialising and increase social networking (Rahman, Ahmad & Hashim, 2018 &De-Marcos, L., Garcia-Lopez, E., & Garcia-Cabot, 2016)

Increase interactions between educators – students and students- students

Aligned with Malaysia Education Blueprint 2013 – 2025 (PPPM)

Encourage learning activities and increase learning engagement (Mahfuzah Mohamad, Sazali & Salleh, 2018).

Improves students cognitive skills (da Rocha Seixas et al., 2016)

Motivation to implement gamification:

Philosophy subject

Require students to practice thinking skills and a lot of reading. Some students perceive philosophy course as boring.

Students fall asleep during lesson

Class schedule 5 – 7.50pm every Thursdays. Last class of the day. Students are tired and cannot focus.



Engagement

Lack of engagement. Students tend to do other activities in the classroom rather than focusing on the lesson.

Large number of students

Managing assessment

Variety of assessment can be used, not only pen and paper based. Can use online quizzes, PowerPoint, video, to assess student.



Topirceanu, 2017

Ideal environment



RESEARCH OBJECTIVES

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To enhance students' critical thinking skills through gamification in learning

To explore students' perception on gamification in learning

OUR CASE STUDY

- Gamifying philosophy course to students with science background
- Subject : Logic and critical thinking
- Faculty's elective course, over 100 students each semester





METHODOLOGY (SAMPLING)



RESEARCH DESIGN

- After add and drop week
- Pre-test (Malaysian Critical Thinking Instrument Version 6, MaCTIv6)

Week 3

- Gamified learning
- Week 4 • Online and Offline gamification Week 13

A WORLD

- Study week. End of lectures.
- Post-test (Malaysian Critical Thinking Instrument
- Week 14 Version 6, MaCTIv6)

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THE LEARNING



THE MALAYSIAN CRITICAL THINKING INSTRUMENT VERSION 6 (MACTIV6)

Based on the conceptualization of the Malaysian society critical thinking model namely the "Akbar Critical Thinking Model", which is designed to measure four cognitive skill areas: cognitive complexity, thinking disposition, metacognition, and conscience.

For this study - cognitive, metacognitive, and conscience.

DEVELOPER



DATA ANALYSIS

Rasch Measure/ Analysis. Level of difficulty/ critical for each item is considered.

FORM B Metacognition 19 items Likert scale 1 – 5 (strongly disagree – strongly agree)

FORM C Conscience 36 items Scale of 0 – 100%

RESULTS



والمسار السنة إلى





SUMMARY OF FINDINGS



- Students show great improvement in cognitive skills items.
- Low performance in conscience demonstrate that such contents have not been emphasized in the course.
- Students demonstrate a mediocre level of metacognition in the course.

STUDENTS' PERCEPTIONS ON GAMIFICATION

• 90.1% thinks that the gamification made the class more interesting

- 78% perceives that gamification increase the interaction between students and lecturers
- 78% thinks that gamification helped them to understand the subject easily.

CONCLUSION

- Most students agree that gamification has helped them focus on class learning
- Disappointed when no quiz given to them
- Shows that students prefer more exercise for the subject as it help them in their understanding on the topics
- Educator needs to embed online and offline type of gamification – 1) for varieties of approach 2) contingency plans if there is no internet connection at that time
- Downsides for online 1) students left their mobile phone/ laptop at home 2) gadget has no battery
- Educator needs to prepare early for materials prior each class (online quiz need to be designed early)

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Let's gamify and empower you students!

Thank you

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