GAMIFICATION

Gamification is the use of game thinking and game mechanics in non-game contexts to engage users.

Image from https://presentermedia.com

CONTINUUM

Gamification

Uses game principles and elements to motivate learning rather than actual games

Game based learning

Uses games or video games as a means for learning

Serious games

Computer based immersive games with educational and informative purposes

RESEARCH LITERACY (RL) - OUR CHALLENGE

- **PROBLEM:** There are problems associated with traditional RL content delivery and assessment - students can disengage, lose motivation, experience high anxiety and fail to generalise learning.

- **SOLUTION:** Gamification of and supported participatory learning are possible solutions that can impact the student learning experience.

KEY FINDINGS

1. POSITIVE OUTCOMES
2. CONTROL
3. MOTIVATION
4. GROUP WORK
5. ATTITUDES

KEY INSIGHT - POSITIVE OUTCOMES

★ Students responded positively to gamified features such as Knowledge Check Quizzes, self monitoring progress tools

★ Students preferred to learn remotely using E-Learning activities.

★ Gamified activities that provided real world applications of the topic were useful in increasing students perceptions of course value and are linked to exam performance.

Key Learning

More tools such as these could be incorporated into future interventions

KEY INSIGHT - CONTROL

★ Students felt in control of their learning when they had the freedom to conjecture, hypothesis, explore and fail without negative consequence.

★ Course instructors feel that too much student control over learning may have negative outcomes if they are not appropriately monitored and assisted by a teaching professional.

Key Learning

A balance is required between student and instructor led control of learning that takes account of different learning styles across students.

KEY INSIGHT - MOTIVATION

★ The introduction of gamified elements alone was not powerful enough to cultivate more positive, less anxious attitudes in students.

★ Intrinsically motivated students responded better to gamified interventions than those extrinsically motivated students.

Key Learning

A profile of student motivations should be compiled to design a more effective intervention.

KEY INSIGHT - GROUP WORK

★ Negative attitudes (frustration & incompetency) increased when students were unfamiliar/inexperienced working in groups, but gamified cooperation was successful in eliciting positive attitudes in better functioning groups.

★ Inexperience with gamified elements and group work also resulted in negative learning outcomes such as gaps in knowledge and poor understanding of statistical concepts.

Key Learning

In the future gamified co operation, should only be incorporated when students are; (1) experienced in group work, or (2) supported to develop collaborative working skills prior to the intervention.

KEY INSIGHT - ATTITUDES

★ We did not find the expected increase in attitudes (SAT-36) when measured following gamified activities
  ○ Coincided with moving into more complex statistics (week 6)
  ○ Gathered a second post SAT-36 measure (week 12)
★ Attitudes in week 12 increased from week 5 but not significantly beyond pre-SAT-36 levels. are linked to exam performance.

Key Learning

Pre–Post measures should be taken before and after full module. Likely to need a control group to measure against.

NEXT STEPS

NS126 2018-19

- Remove group work and associated gamified elements (e.g. badges), but retain all others

- Redesign group tasks & explore time table options

NS126 2019-2020

- Split year long module into two semester long modules

- Semester 1 module: Introducing research
    - Incorporate supported group work (instruction, practise)

- Semester 2 module: Reintroduce adapted group tasks

CONCLUSION - DID GAMIFICATION WORK?
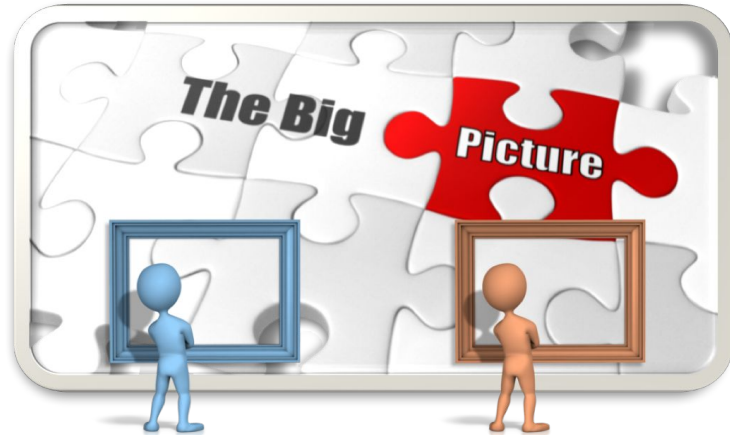
THANKS!

Any questions?

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ADDITIONAL SLIDES

DESIGN

Considerations

Goals and objectives

★ Aspects of learning
★ Aim to improve attitudes

Broad appeal

Ability to opt-out

Time/support required

How to evaluate?

Avoid

Quizzes for quizzes sake

★ League tables, badges with no associated learning objective

Disenfranchising sub-groups of students

Over-complication

CREDITS

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