### Understanding student perceptions and engagement for formative assessment: A study of interactive online quizzes

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#### Introduction

Formative activities are integral for student learning and students engaging with them are more likely to achieve success in summative assessments [1, 2]. However, engagement with optional activities by students can be low. How should formative activities be incentivised?

We investigated student engagement with, and perceptions of, interactive online quizzes on a 60 credit Level 2 core physics module. • Quizzes are indirectly incentivised by reflective item in tutor-marked assignments (TMAs), and quizzes carry no direct credit. • 1 summative TMA, 25% of module grade. • 5 formative TMAs, students must achieve a threshold to pass module.

#### Methodology

- Quantitative learning analytics data for 4 academic years investigated (2019/20 – 2022/23, 1900 students).
- Qualitative survey of 2022/23 student cohort (30 responses, 14% response rate).

#### Quiz repetition behaviour in more detail

Looking at the intersection between the number of quizzes attempted and the number repeated reveals a more complex behaviour.

There is an anticorrelation between quiz reuse and exam score, for a given number of quizzes completed.

For students completing fewer than 5 quizzes, quiz reuse does not appear to be an effective learning strategy.

For students completing 5 or more quizzes, light reuse seems to be optimal.

#### Conclusions

Studies by Kibble and Agnew, Kerr and Watt both found module credit of 1% per quiz yielded nearly 100% engagement whereas engagement was approximately 50% without [3, 4] 80% of students in this study engaged with quizzes, which suggests indirect incentivisation through reflective items in other assignments is an effective assessment strategy for engagement.

We found that quiz use and reuse are correlated with exam success. The effects are weaker than engagement with substantive tutor-marked assignments (TMAs), but can still have a significant effect. An intersectional analysis of quiz use and reuse shows a more complex behaviour than requires further investigation.

Our survey of student motivations revealed that the quiz difficulty is appropriate for the course, they are useful for revision despite the time commitment needed, and that students enjoy the quizzes. This indicates that the quizzes in this study are authentic assessment activities and valued by students, potentially contributing to the high levels of engagement [5].

#### References


