

Measuring learning gain in multi-attempt quizzes

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Update on a multi-attempt quiz

EAMS 2021 talk:

“Moodle quizzes with immediate feedback and unlimited attempts”

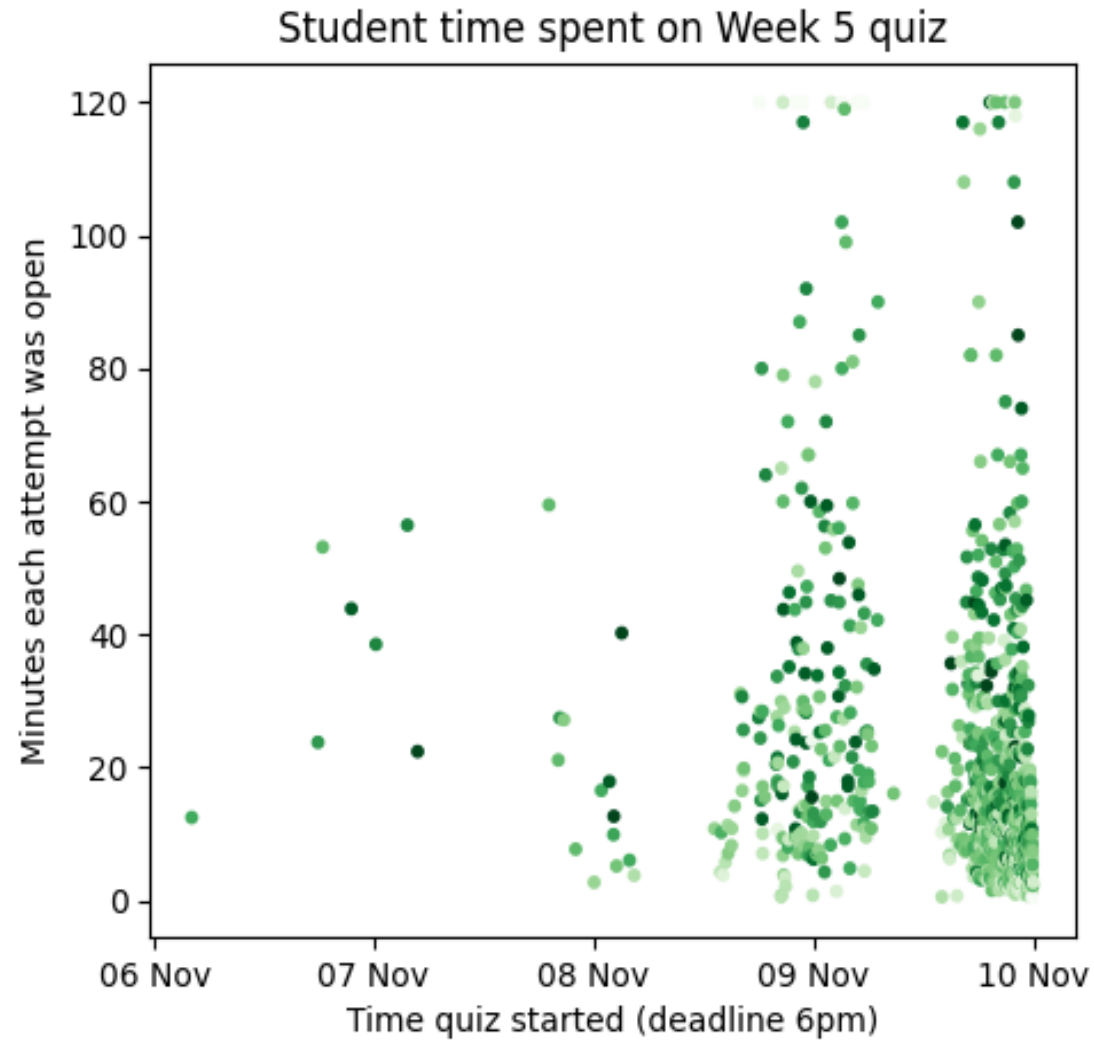
Planned changes:

- *Convert R/Exams -> STACK (easier for me to make changes)*
- *Last attempt -> Highest mark (encourage persistence)*
 - *+ limit attempts (discourage brute force)*
- *Negative marking of incorrect answers (deflate grades)*
- *2-hour time limit per attempt (encourage focus)*

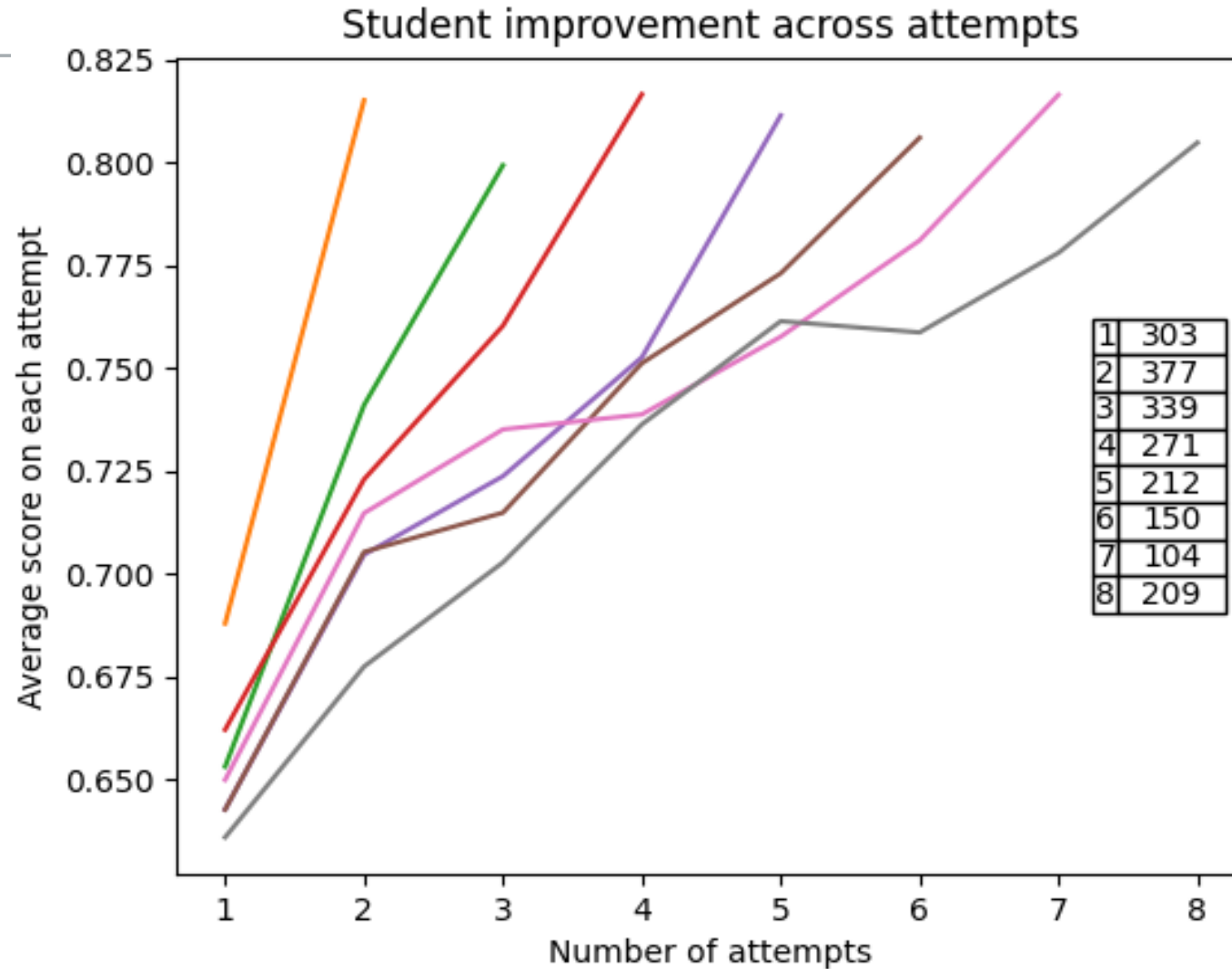
Multi-attempt quiz style

- Questions all written in STACK
- Quiz is five Multiple True/False (MTF) questions, each containing:
 - A specific concept or situation to be assessed
 - Four T/F statements about that concept
- Each T/F statement has several (3-6) variants (in “Question variables”)
- Students are allowed 8 attempts; after each attempt
 - They get their marks, some feedback, but not the right answers
 - The question variants randomly change (coded in “Question variables”)
- Quiz admin:
 - Each weekly quiz is worth 1% of their overall grade
 - Negative marking is used (implemented using PRT in STACK)
 - Their highest mark counts
 - Each attempt has a time limit of 2 hours
 - 10 minute delay between attempts

Student effort on quizzes



Learning gain



Student comments

From anonymous student survey:

- 20 of 50 respondents commented positively on the quizzes (unprompted!)

"I love the idea of multiple quiz attempts, I spent much more time on them than I would have if there were only 1 attempt like in most other modules, and as a result I understood the content much better."

"I loved the ethos of the quizzes, "keep trying until you get as good a mark as you can", because it ensured that I kept up with all the subtleties of each week's content."

"the format of the moodle quizzes was brilliant"

Plan for the future

- Emulate in selected other modules
 - Replace existing single-attempt quizzes with multi-attempt style
 - 2 month paid student intern starts in July to help with this
 - Reallocate some GTA marking time to enhance quizzes instead

Thanks!
