

Getting rid of midterms is hard: a retrospective

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The data here is a bit older.

This is a non-positive result.

Gotta go fast.

A trolley problem

Two students both score 49% in your class.

You need to bump exactly one of them to 50% (don't try this at home).

Student A scored 17% on the final exam

Student B scored 50% on the final exam

Which student do you pick?

A trolley problem

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Which student do you pick?

One/some/most/all instructors hold the final exam as a reliable test of student's capabilities. Students should know what to expect early so that they can make changes.

Midterms – the case against

Midterms are **stressful**

- Considering a full course load, students may have something like 10 midterms in something like 8 weeks.

Midterms are **logistically challenging**

- With 4239 students, the final exam takes place simultaneously in 29 rooms including two gyms. This is not realistic mid-term.
- Evening midterms have ethical concerns and may soon be outlawed.
- In-class midterms must take place over several days meaning the instructional team must write many versions of the midterm.

Midterms – the case for

Midterms provide **structure**

- Midterms provide deadlines for students to become proficient with a subset of the material.
- Midterms communicate expectations for the final exam.

Midterms provide **feedback**

- Midterms provide students with realistic information about how they are performing in the course.
- For some students, this is a strong signal that their study strategies need to change.

An alternative – practice/completion midterms

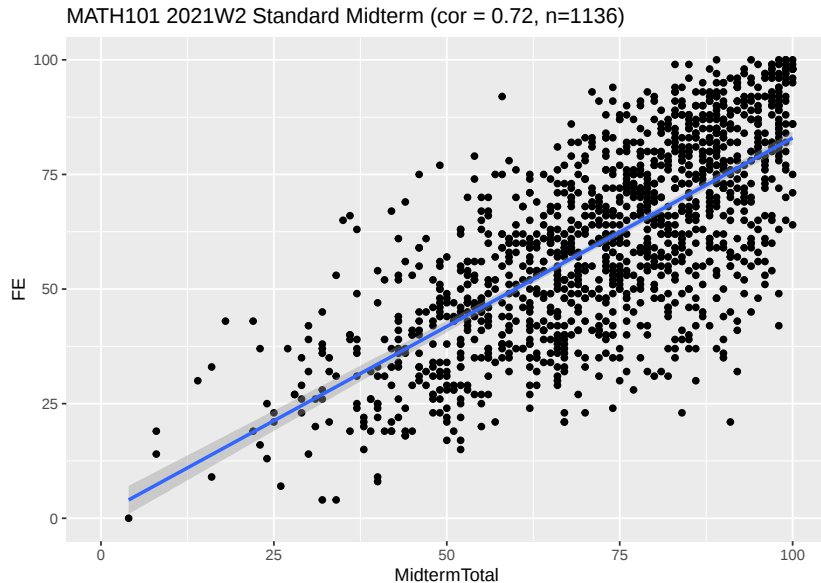
Pilot in 2021W2 in MATH 105 (commerce calc 2)

- To provide feedback students were given take home midterms.
- Students were given full points so long as they submitted an attempts at these “completion” midterms.
- The instructional team graded and returned the midterms as usual to provide students with all the feedback they would normally receive.

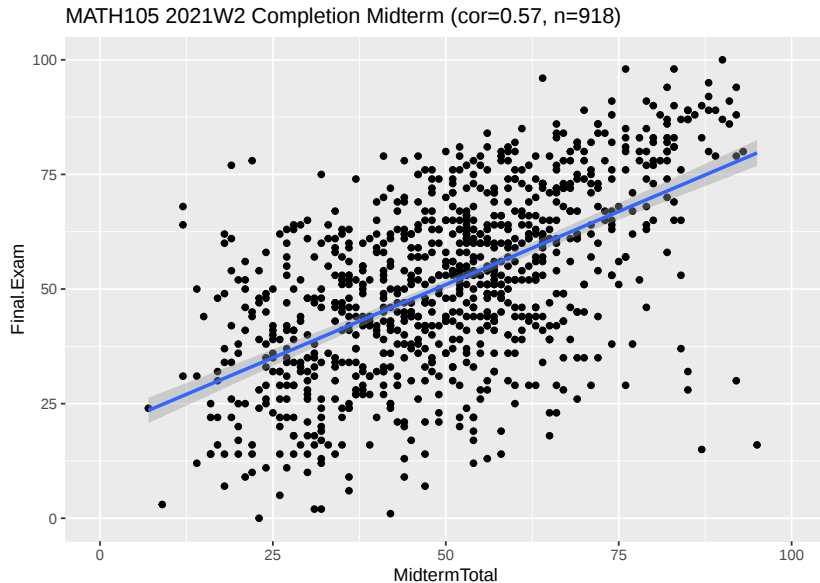
Grade data (see plots)

- The scores on the completion midterms (MATH 105 2021W2) didn't provide the same predictive power as for traditional exams (MATH 101 2021W2) but were still predictive.
- A group of students scored much better on the midterms than on the final exam – they did not get a good message about their performance in the course.

Pilot data – traditional midterm (applied science calc 2)



Pilot data – completion midterm (commerce calc 2)



Student experience **survey** (survey of 112 students out of 1026)

- The test reduced students anxiety overall (84%) but increased anxiety for the final exam in about half of students (44%).
- Most students (76%) didn't study for the completion midterm as much as they would have for a traditional midterm. About half (46%) attempted less problems than they otherwise would have.
- Some students remark that they studied less, but to capacity and didn't cram – leading to a better learning environment.
- Some students suggest in-person completion midterms.

Push to production – Calc 1 and Calc 2 everywhere

In 2022/2023 we two ran completion midterms each in Calc 1 and Calc 2, respectively. We called them **practice exams**.

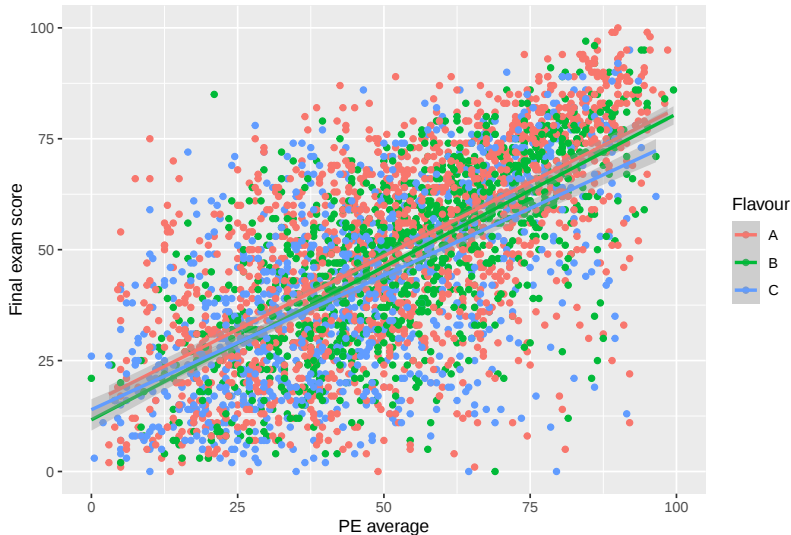
- Students could sign up for optional sittings of the midterm or submit them to our LMS (Canvas).
- Sign up for the in-person sittings was about 30% in term 1 for midterm 1. This dropped to about 10% by term 2 midterm 2.
- Term 1 (MATH 100) midterm scores correlated well with final exam scores, but term 2 (MATH 101) midterm scores did not.

The course was split into three **flavours**

- A: Applied science
- B: Biological science
- C: Commerce science

Term 1 (MATH 100) Practice Exams

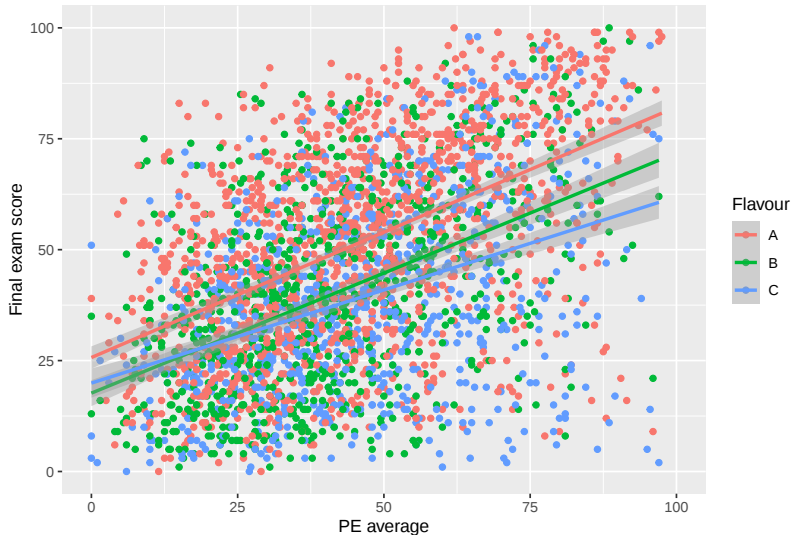
MATH100 2022W1 Practice Exams (cor=0.67, n=3775)



Flavour A: 0.66
Flavour B: 0.70
Flavour C: 0.61

Term 2 (MATH 101) Practice Exams

MATH101 2022W2 Practice Exams (cor=0.47, n=3084)



Flavour A: 0.50
Flavour B: 0.49
Flavour C: 0.39

Return to traditional midterms

Students' thoughts on midterms (Dec/April Survey, May focus groups)

- “Could implement midterms that count towards your final mark.”
- “Having a midterm to check how I’m doing halfway through would have been nice.”
- “Midterms should be brought back practice midterms don’t help anyone.”
- “The marking scheme is also perfect, with the practice exams being very helpful. I really appreciate that this mark scheme is focused on actual learning, not getting the right answer immediately every time.”
- Students in focus groups remarked that the accountability of traditional midterms was valuable for them and their peers.

Return to traditional midterms

Instructors' thoughts on midterms

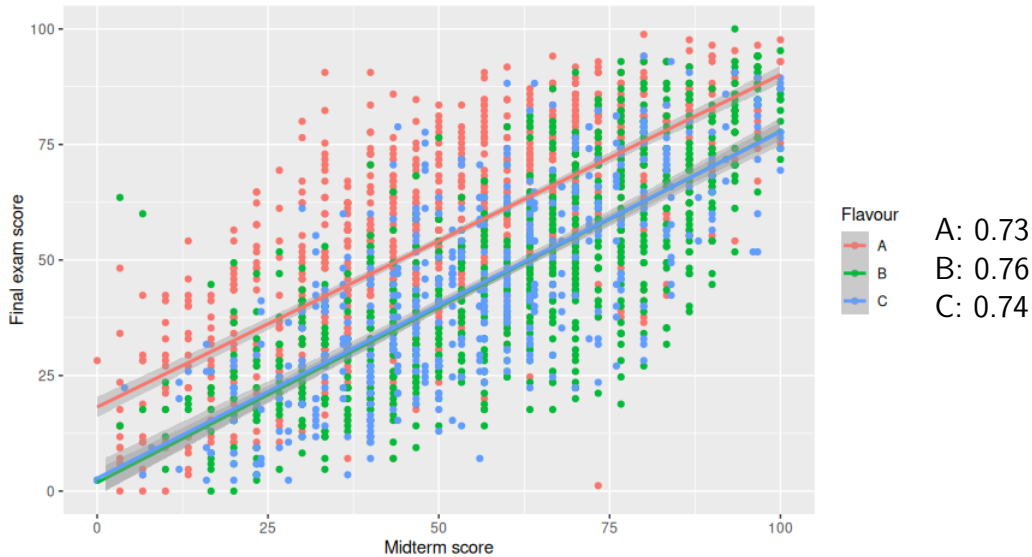
- Students had not grasped earlier concepts by the end of the course – attributed to lack of midterm studying.
- Despite the midterms being similar difficulty to the final exam, students were surprised by the difficulty of the final exam – attributed to the lack of attention to the midterms.
- The non-exam course components are (expectantly) well done by students (online homework, group written homework, engagement) – worry that students who need a signal aren't getting it.

A personal thought

- We need to provide structures and scaffold behaviours that will lead students towards the learning objectives. Students benefit from a clear and early signal about what will be required for success. Midterms are one way.

Today – Calc 2 in Jan 2026

MATH101 2025W2 Midterm/Final (cor=0.69, n=2528)



Future?

Back to 6 Quizzes a la 2016? (time is a wheel)

With unlimited resources I might

- Midterm in week 3
- Midterm in week 4
- Grade is 90% max + 10% min

Thanks!

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