Driving Change, Year One:
Redesigning Calc I and II

Scan for sample materials & references

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By Ethan Gwaltney, Isabel Harris, Anna Lowery, Betul Orcan-Ekmekci, José Pastrana, Taylor Payne, Sarah Ruth Nicholls, Anthony Várilly-Alvarado, Stephen Wang, Richard Wong

Questions, comments, feedback?

We redesigned our calculus courses to be ***highly coordinated***, and ***active-learning based***.

We incorporated ***metacognitive reflection assignments*** to encourage student resilience.

We used ***low-stakes weekly quizzes*** to intervene when students needed additional support.

We incorporated ***out-of-class support structures*** via participation incentives.

Highly coordinated means:

- Common homework, quizzes, and exams
- Weekly coordination meetings
- Flexibility in implementing activities

Reflection assignments include:

Math Autobiography

- At the beginning of the semester, students reflect on their prior mathematical experiences and habits.

"Who are you, and how do you relate to math?"

Weekly Check-in

- Every week, students review and reflect on what they have learned.

"Do you have any lingering questions about the material covered this week?"

"Is there anything I need to know as your teacher this week?

Pre/Post Exam Wrapper

- Students report on their study strategies and rate their perceived knowledge/mastery.

"How will you study for the exam?"

"What will you do differently in preparing for the next exam?

Advice Letter

- At the end of the semester, students write a letter with advice for future calculus students.

"What do you wish you had known before taking this course? How will this knowledge help you in the future?"

Support structures include:

Midweek Math Training

- Weekly peer-led exam practice sessions.

"Attending weekly MMT sessions helped me fill in gaps in my understanding and keep up with the material."

"I personally attended every week with my best friend, we both did the problems together and held each other accountable."

Study Sessions

- Open office hours in a collaborative workspace.

"I also found that forming a study group was invaluable. Discussing problems with peers not only clarified my understanding but also exposed me to different problem-solving approaches."

Drop-in Study

- Peer tutoring run by the Office of Academic Support (OASUS).

"I started attending the OASUS drop-in study sessions about halfway through this semester and they've been a huge help ... I've met some other students in Math 102 there as well who I study with now."

Math 110

- Optional 1 credit course; just-in-time pre-calculus instruction and practice.

"[Math 110] really helped me to succeed... because of the lower stakes environment it allowed me to feel comfortable making mistakes and solving problems."

How effective was [resource] in assisting your learning of calculus this semester? (*n=163*)