

Back-to-Back Math: Strategies for Ensuring Successive Semester Enrollment

For students beginning college in developmental math, the pipeline to degree completion has leaks. Nationally, 70 percent of students placed into remediation fail to enroll in a gateway math course within two academic years, and only 1 in 10 developmental students ever graduate (Vandal, 2015). While many exit points exist on the pipeline to completion, close examination of gateway course completion data suggests that developmental students are more likely to drop out between math courses than they are to fail any individual course (Bailey, Jeong, & Cho, 2010; Jenkins, Jaggars, & Roksa, 2009).

This brief summarizes findings from the field and initial research from the New Mathways Project (NMP) on the relationship between gateway course completion and persistence between courses. It describes strategies that foster back-to-back math enrollment by encouraging students to enroll in a college-level math course in the semester immediately following completion of their developmental coursework.

Strengthening the Pipeline to Degree Completion

The NMP significantly improves gateway course completion rates by increasing student success in individual courses and by creating coherent, accelerated, yearlong pathways for developmental students. The NMP model accelerates coursework by replacing two to three levels of developmental math with one semester. This evidence-based approach also reduces leaks in the pipeline to completion by decreasing the number of transition points that a student must overcome to progress from entry to credit-bearing coursework (Charles A. Dana Center, 2014).

Data available from the Texas Higher Education Board (THECB, 2014) show that only 24 percent of all first-time-in-college (FTIC) developmental education students in Texas completed developmental courses in one year, and just 8 percent of those students completed a college-level course in the same amount of time.

Comparatively, 64 percent of NMP students in AY 2014 completed developmental coursework in *one* semester, and 23 percent of those NMP students also received college-level math credit in one year.

Impressively, gateway completion rates were even higher (43%) at schools that successfully encouraged successive semester enrollment in a yearlong pathway.

These data suggest that increasing success in individual courses is necessary

but not sufficient. Institutions must plug the leak between developmental math and college-level courses.

For students enrolling in developmental education courses:	All FTIC, Community College Students (THECB Data)		THE New Mathways PROJECT
	AY 2013	AY 2014	
Developmental Education Completion	24% in one year <small>n=32,624</small>	64% in one semester <small>n=1,306</small>	
Gateway Course Completion	8% in one year	23% in one year	
Gateway Course Completion: Subset of Colleges Successfully using Back-to-Back Math	n/a	43% in one year	

Back-to-Back Math Enrollment Strategies: Solutions from the Field

Many colleges that use the NMP model have addressed this gap by implementing back-to-back math strategies that encourage students in developmental math to enroll in college-level math in the following semester. These institutions use simple incentives, intentional course planning, and positive messaging to propel students towards the crucial momentum point of gateway course completion.

The Dana Center conducted interviews at colleges that use back-to-back math strategies and identified a range of creative approaches to encourage student persistence between semesters. Several promising practices emerged across campuses:

1. Establish a culture of successive semester enrollment with clear, timely, and consistent communication. Colleges should consider a variety of methods to normalize successive enrollment in math courses. This process should include sharing data with faculty, advisors, and students about how enrollment choices affect the likelihood of course completion.
2. Make successive semester enrollment easy and appealing. Incentivize back-to-back math by removing barriers, offering guidance and support, and broadly disseminating information about how and why to enroll in successive semesters.
3. Encourage students to enroll as a cohort. The active, group learning strategies associated with NMP courses promote development of strong social bonds among students as they become partners in learning. Build on the strength of these relationships by encouraging students to enroll with their classmates.

Specifically, advisors, faculty, and administrators should consider the following strategies:

Advisors

- *Communicate to establish the expectation of back-to-back math.* Advisors at Kilgore College inform students registered in an accelerated developmental math course that it is part of a two-semester experience that allows them to complete math requirements in one year.
- *Make math enrollment the default.* Advisors at The University of Texas at Arlington automatically enroll students who need to take math in math courses. Students can choose scheduling details, but they are required to enroll in math.

Faculty

- *Use class time to provide information about successive semester enrollment.* Professors who teach mathematics and student success courses in the Alamo Colleges encourage back-to-back math by telling students enrolled in developmental math to register for a college-level course. They discuss college-level math course options and how those courses align to students' majors. They also offer in-class time to walk the students through the registration process.
- *Incentivize early student enrollment in college-level courses.* Professors at El Paso Community College offer extra credit to developmental students who show proof of registration in a college-level math course.
- *Reinforce messages about back-to-back math* by putting information about expectations for the yearlong pathway in course syllabi and using informal student contracts.

- *Collaborate with student support services to promote back-to-back math.* At Northeast Texas Community College, faculty members work with advisors to follow up with any NMP developmental students who have not registered for a college-level course. They coordinate with students to make the college-level course fit into their class schedules.

Administrators

- *Prioritize the use of parallel and “prime-time” scheduling.* Consistency in class days and times increases the likelihood that students can continue to accommodate work or family schedules. A professor at South Texas College offers his developmental math students the opportunity to enroll in his college-level math class at the same time in the following semester. The majority of his students accept the offer.
- *Provide early enrollment for developmental students.* Trinity Valley Community College permits early registration for college-level math for NMP students. This incentivizes students to continue to make progress towards completion and allows them more flexibility when creating their schedules.
- *Use institutional policy to require continuous enrollment.* Some institutions require continuous enrollment in math until students satisfy their developmental math requirements. Consider extending this policy to require continuous enrollment through completion of a college-level math course.

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