

Product Used **MyMathLab**Course Names **Developmental Math Sequence**

Northern Virginia Community College used MyMathlab in its Developmental Math course redesign as part of the Changing the Equation (CTE) National Center for Academic Transformation/Gates Foundation grant. All CTE participants implemented the Emporium Model at their two-year institutions. [This white paper](#) documents the best practices drawn from these CTE schools.

## Course Implementation

The overall success rate in Northern Virginia Community College's (NOVA's) developmental mathematics courses—Arithmetic, Algebra I and Algebra II—was below 50 percent. Most classes were taught using a traditional lecture method. More-prepared students often lost motivation, while the pace was often too fast for the less-prepared student. Typically, a student who failed the course had to repeat the entire course. Plus, with so many instructors delivering these courses, it was difficult to maintain consistency in the learning outcomes.

NOVA redesigned all three of its developmental mathematics courses into one unified course, Developmental Mathematics.

Each NOVA campus established a math computer lab staffed by faculty, instructional assistants and peer tutors to provide one-on-one assistance to students as needed. Each student was required to spend a minimum of two hours per week in

the lab, in addition to a scheduled two-hour class in a computer classroom. MyMathLab provided diagnostic and record-keeping functions and immediate feedback to students. The class instructor discussed weekly progress with each student, providing support and encouragement and building a sense of community among the learners.

This redesign addressed students' varying levels of preparation. The course was more active and learner-centered and was based on a mastery approach, requiring more time-on-task than in the traditional model. Uniform learning outcomes were reinforced through frequent practice and immediate feedback. Students were allowed to focus on the skills they lacked and to progress through the units at their own pace. If a student failed a module, he or she was required to repeat only that module, not the entire course.

## Results and Data

Students in the redesign learned significantly more than students in the traditional format as measured by performance on exam questions given to both groups of students before and after redesign (table 1). For traditional sections in spring 2011, 60.9% of the answers were correct; for the redesigned sections in spring 2012, 88.3% of the answers were correct. This amounts to an impressive 45% improvement in performance by redesign students over traditional students.

### Other Student Gains

- Seventy-six percent of students surveyed agreed or strongly agreed with the statement, "Overall, I am satisfied with the MASTER Math course;"

- Sixty-nine percent of students surveyed agreed or strongly agreed that "the way the class is set up helps me stay on task with learning the course material."
- Ten percent of students completed more work in a single semester than was required.

Course	Spring 2010 Traditional	Spring 2011 Redesign	Fall 2011 Redesign	Spring 2012 Redesign
Arithmetic	66.3%	80.4%	84.3%	84.3%
Algebra I	64.7%	91.8%	93.3%	90.7%
Algebra II	57.2%	83.6%	88.7%	87%

Table 1. Percent of Students Giving Correct Exam Answers, Spring 2010–Spring 2012

## Conclusions

Students no longer spend time on material on which they demonstrated competency via the placement test; they move more quickly through required units and qualify for credit-level math courses; and they have flexibility in scheduling and study times, with individualized assistance available upon request

six days a week. There is the opportunity to complete their developmental math requirements in less time and with less cost. For those students who need to go slowly because of special learning needs, the redesign structure works for them as well, since the student, not the teacher, sets the pace.