

Product Used **MyMathLab**

Course Names **Developmental Math Sequence**

Volunteer State 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

Prior to fall 2011, the Developmental Studies Program in Math (DSPM) at Volunteer State Community College (VSCC) comprised three, three-credit courses: Basic Mathematics, Elementary Algebra, and Intermediate Algebra. Once placed into the DSPM sequence, all students were required to pass Intermediate Algebra before progressing to college-level math.

VSCC recognized that the DSPM program was not working for all of its students and that a change was due. Student success rates were less than 50%. Many students repeated DSPM courses multiple times. Facing three developmental math courses was overwhelming to many students, especially those at the lowest level—many simply gave up since they faced, at a minimum, three semesters in developmental math. The program needed to be streamlined, the time spent in developmental math shortened, overall student performance enhanced, and completion rates improved.

VSCC's redesign promoted active mastery learning by utilizing proven MyMathLab-based learning resources supported by on-demand, one-on-one assistance. Students learned math by doing math as they worked in the Learning Commons emporium guided by instructors, staff and tutors.

Each student placing into the new developmental math program called Learning Support Math (LSM) began with competency 1. However, pretesting permitted prepared students to move immediately beyond any competency in which initial mastery was demonstrated. Additionally, there were multiple exit points, allowing some students access to general education math courses sooner. The curriculum was streamlined as students were required to demonstrate mastery only in those math competencies germane to their chosen program of study. Students in LSM had the opportunity to move quickly through the competencies, and once completed, move on to their next required math course.

## Results and Data

### Basic Math

- Statistical results indicated significantly higher scores in Basic Math skills in the redesigned course (mean 79.12) over the traditional course (mean 69.17). *(Students in traditional Basic Math were those with ACT math subscores of 13 and below, students taking the redesigned Learning Support Math had ACT subscores of 13–18.)*

### Elementary Algebra

- Statistical results indicated significantly higher mean scores in Elementary Algebra in the redesigned course (mean 73.93%) over the traditional course (mean 63.07%).
- The percentage of students failing the exam in the traditional course was 66.4 percent; the percentage dropped to 46.9 percent in the redesigned course. *(Students in traditional Elementary Algebra were those with ACT math sub-scores of 14–16 and below, whereas students taking the redesigned Learning Support Math had ACT subscores of 13–18.)*

### Intermediate Algebra

- The percentage of students failing the exam in the traditional course was 70.4 percent; the percentage dropped to 44.9 percent. *(Prior to redesign, students were placed into Intermediate Algebra with an ACT Math sub-score of 17–18. After redesign, students with an ACT below 19 were placed into Learning Support Math.)*

### Other Impacts on Students

Almost one-third of Elementary Algebra students in the redesign cohort demonstrated mastery by midterm and, thus, proceeded to their next required math course. About a dozen of these students successfully finished the next math course in the same semester.

*25.5 percent more Intermediate Algebra students passed the exam in the redesigned course than in the traditional course*

## Conclusions

VCSS will not return to the traditional lecture approach for developmental mathematics. VSCC has addressed the big challenges and has made significant progress toward solutions in each case. The VSCC strategic plan includes the opportunity for general education math courses within the Learning Commons emporium. Major renovation to the VSCC library will soon be underway and will include a new, larger emporium with space for increased offerings and class sizes of 50.

VSCC has redesigned its commitment to high school mathematics and preparation of high school students by

piloting a bridge opportunity with area high schools in fall 2012. Algebra II students will be assessed utilizing a VSCC final exam to demonstrate college-preparedness as an alternative to ACT. Those students who demonstrate mastery may then enroll in a dual-enrollment math course in the subsequent semester, thereby increasing the probability of completing a college-level math course before high school graduation and the probability of college success and graduation.