Nashville State Community College — Nashville, TN

Product Used MyMathLab
Course Names Developmental Math Sequence

Nashville State 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.

TWO YEAR • FEWER THAN 10,000 STUDENTS

Course Implementation

The high failure rate in developmental math often prevented Nashville State Community College students from beginning college math courses and delayed progress towards graduation. Historically, only 14 percent of students that began the developmental math program at the Basic Math level continued to college-level math. Intermediate Algebra had a success rate of 45 percent for AY 2009/10.

Math faculty modeled the NSCC redesign on SMART Math at Jackson State Community College. Integrating these changes with NCAT course redesign principles created a modularized, technology-driven course that allowed students to focus on concepts relevant to their career goals, to have access to one-on-one assistance when needed and to potentially complete developmental math requirements in one semester.

The curriculum was divided into five modules, which students progressed through as they demonstrated mastery of the topics. Students were required to attend class every week in a Math Learning Lab staffed with instructors and tutors, who were available for individual assistance or small group discussions. Pearson's MyLabPlus provided immediate feedback and individualized instruction. Homework, practice, and exams were standardized for each module to diminish course drift and the variability in quantity and quality of instructor feedback and course content.

Results and Data

Student scores from fall 2010 traditional sections were compared to student scores in redesign sections from fall 2011. Students in redesigned sections scored significantly higher overall in course competencies when compared to students in traditional sections.

The competencies and the percent increase in scores from the traditional to redesign course were as follows:

- Real numbers and Operations increased from 67% to 84%—a 25% increase.
- Algebraic Expressions increased from 53% to 81%—a 53% increase.
- Linear Functions and Graphs increased from 47% to 81%—a 72% increase.
- Linear Equations/Inequalities increased from 53% to 87%—a 64% increase.

(The fifth competency, Modeling and Critical Thinking, was unique to the redesigned course and did not have an equivalent in the traditional course.)

Other Impacts on Students

- Redesign students performed better in college-level Math for Liberal Arts with a success rate of 100 percent versus 59 percent for traditional students.
- According to student comments from course evaluation forms based on a five-point scale, students enjoyed the computer lab setting (4.1), believed they were better at math at the end of the course (4.2), felt prepared for college-level math (4.0), liked the immediate feedback on homework and tests (4.4), and felt the critical-thinking activities helped to tie the material together (3.9).

Conclusions

The improved learning outcomes and subsequent success rates indicate that the developmental math redesign is having a positive impact. NSCC faculty expect this trend to continue as the team continues to modify course content and delivery. The changes to the developmental math program most likely will extend into other college-level math courses.