



Montana's Two-Year Education Course Redesign Models

The College!NOW conference Best Practices for Serving the Underprepared Student was held on June 6-7, 2012 in Billings, Montana and focused on developmental education reform strategies. Following keynote and workshop sessions from national experts, selected panel members from Montana's two-year colleges shared a brief overview of course redesign models. The four presentation summaries follow:

UM Helena COT: Computer Based, Self-Paced for Multiple Levels of Math

UM Helena offers a computer based, self-paced math course for Pre-Algebra, Introductory Algebra, Intermediate Algebra and College Algebra. Students can accelerate through the material by pretesting out of homework problems or can take more time on certain topics if needed. The class models a computer lab where all four levels of students meet at a scheduled class time with one instructor available for individual questions.

Preliminary data shows pass rates of 75%-92%. Interest in the course is high as classes fill every semester. Several students complete two to three courses in one semester.

Challenges include working with the registrar to set enrollment caps, moving students into new courses late in the semester if they have completed two or more classes and the implications for financial aid, and motivating students to maintain a steady pace throughout the semester.

Presenter: Joyce Walborn, Math Instructor, UM Helena COT

Currently in her eighth year of teaching, Joyce oversees all developmental mathematics courses at UM Helena. She holds a bachelor's degree from the University of Washington and a master's degree from the University of Montana where her studies focused on understanding how developmental mathematics students learn. Joyce has also taught junior high math which prepared her for just about everything!

MSU Billings COT: Mastery Learning, Pre-Testing and Personalized Computer Homework

Although the creation of our Academic Support Center with smaller classes and the use of technology improved the success of our developmental math students, we found that Intermediate Algebra was still a roadblock for many students in their pursuit of a college education. In 2009, we developed a modular approach based on mastery learning that still retains the classroom environment. The course redesign combines pre-testing with personalized computer homework, lectures, study skills enhancements, classroom activities and paper-pencil testing. It allows students to avoid repeating an entire semester when life happens but also provides students the opportunity to complete the developmental math series in one semester if they desire.

Our current data comes from the pilot phase of the course redesign. The average score on the common final exam was 88% compared to 73% in the traditional course. Another major indicator was the rate at which Introductory Algebra students succeeded in the Introductory Algebra portion of the pilot course. The passing rate for these students in the pilot was 64%. During that same time, students in the traditional Introductory Algebra course passed at a rate of 50%. The last, and likely most important, benefit of the pilot was the fact that one-third of the students taking the course saved time in the redesign model. Thirty-five percent of Introductory Algebra students passed the two-course sequence in less than one year.

Presenter: Vivian Zabrocki, Math Instructor, Academic Support Center, MSU Billings

In the fall of 1994, Vivian began teaching as a part-time instructor for the math department at MSU Billings. She taught Intermediate Algebra and developed and taught a Beginning Algebra course. In the fall of 2001, Vivian accepted a full-time position as an Academic Support and Learning Specialist and continued to teach Intermediate Algebra. During this time she also created the first online math courses for the math department, including Intermediate Algebra, College Algebra and Contemporary Math. Vivian also earned a Masters of Education with an emphasis in teaching math online.

MSU Great Falls COT: Accelerated Instruction and Assessment for Effectiveness

During the past 10 years the developmental education pendulum has swung from creating more levels of developmental instruction in an effort to better prepare students for college-level coursework to reducing the time spent in developmental courses in an effort to better retain students and move them more quickly into college-level coursework. The task of course redesign is to create or use models that accelerate the developmental education instruction while still providing the support and teaching the skills that students need to be successful in their college-level classes. Many models exist; they can incorporate modules, mastery learning, computer-aided instruction, co-enrollment, lab components, "flipped" classrooms, small group tutoring, Structured Learning Assistance (SLA), and other forms of instruction and support. Regardless of the model selected, all redesigned courses need to include a strong assessment piece to determine if the redesign is truly effective or not. The assessment needs to measure retention and capture college readiness. It is also imperative that those redesigning courses work with Student Services professionals, such as the Registrar and Financial Aid director, in order to work out the logistics and make the redesign viable for students. MSU-Great Falls COT is currently combining Introductory Algebra and Intermediate Algebra into a redesigned course and exploring ways to accelerate developmental writing, probably by having students enroll in College Writing I and attaching a developmental writing lab to the course for those who would normally place into developmental writing.

Presenter: Leanne Frost, Director of Developmental Education and Transfer at Montana State University-Great Falls College of Technology

Leanne Frost is currently the Director of Developmental Education and Transfer at Montana State University-Great Falls College of Technology. Before moving to Great Falls, she was the Assistant Director and then the Interim Director of the Academic Support Center at MSU-Billings. She has spent almost 10 years working in developmental education, including teaching developmental writing and reading improvement. She has presented on and written articles about developmental education topics. Ms. Frost holds a Developmental Education Specialist certification from the Kellogg Institute at Appalachian State University and has been actively involved in the National Association for Developmental Education (NADE). She also has a Master's in Education and a Master's in Reading from MSU-Billings.

MSU Gallatin College Programs: Self-Paced Mastery Program

MSU Bozeman has had a "tutor assisted course" in Math at the Intro/Intermediate Algebra level for many years. Gallatin College will be assuming responsibility for this course starting January 2013 and work is in progress to redesign the existing course to utilize current technologies and attempt to improve success rates. This course will be self-paced with mastery requirements.

Presenter: Shelli Spannring, Math faculty, MSU Gallatin College Programs

Shelli Spannring has been a Math faculty member teaching classroom-based developmental Math for Gallatin College since 2005.