Program Review/Planning Excerpts on Fast Track Math

Planning Year 2012-2013

We are designing a pilot program as another pathway through the developmental math sequence. This pathway will allow students to accelerate their completion of the graduation requirements and progression to a college level math course. This redesign will eliminate overlap between courses and modularize the content for mastery learning. These courses will require computerized classrooms with individual student stations. This course redesign is driven by results colleges across the nation have shown in improving in retention, success, and persistence in their developmental math courses. Our redesign pilot will build upon the best practices of these successful programs.

Despite having qualified and dedicated instructors and multiple pathways for our students, retention and success rates have remained static. This dilemma is a national problem and has triggered redesign efforts across the country. Our goal with our redesign is to improve our retention, success and persistence rates in our developmental math courses.

We hope to implement our math redesign pilot in the Fall of 2012. Data from other colleges have shown noted improvement in retention, success and persistence as a result of this type of redesign. We recommend that the college support the redesign efforts so that more students reach their graduation goals here at Rio Hondo College.

The math department will decide on one standard software to be used in the redesign pilot to enable the students to be more successful in their developmental math courses. We are currently in the process of exploring our options so as to choose the software that best fits in the redesign.

Planning Year 2013-2014

We have found very mixed results in our assessment data of SLOs. Since our data is inputted as class totals, observations about individual students are made anectodally in our department discussions each semester. We have found that many students make mistakes if the lesson was not recent, or can set up a problem but make computational errors in their solution. Students with passing grades in the class overall are not necessarily proficient for each SLO. The Fast Track Math classes that are being piloted this year (2012-2013) address these issues by implementing a mastery learning requirement. Students are required to master each lesson before moving on to the next. We anticipate increased proficiency levels on SLOs with this type of mastery. In order to expand this new approach here at Rio Hondo College, the Basic Skills Program is in need of more computer classrooms and/or mobile laptop stations for use in our regular classrooms.

The traditional basic skills mathematics sequence of four classes (Math 20, 30, 50, 70) has been reduced to three classes (Math 33, 53, 73) in the new Fast Track Math sequence being piloted currently in Fall of 2012. This was accomplished by eliminating the significant overlap of topics between Math 20 and 30 as well as between Math 50 and 70. The new Fast Track curriculum uses individualized instruction based on mastery learning, currently using iLearn as the mathematics software. Students must show 90% mastery of a lesson, chapter or unit on iLearn to skip ahead, and 80% mastery of a lesson, chapter or unit while in learning mode to move ahead. There are weekly critical thinking activities in groups in class with a writing component for reflection on the activity. Students must earn 70% or better on written exams to move on to the next exam. There is a minimum pacing for each course, but a student can accelerate through the coursework and place into college level mathematics. Four sections of Math 33: Fast Track Prealgebra have been piloted in the Fall of 2012 with four instructors using a standardized syllabus, pacing and grading system. Math 53: Fast Track Elementary Algebra will commence in the Spring of 2013.

Several instructors collaborated over the last year to create the new Fast Track Math sequence of classes. This approach builds upon similar successful programs from across the nation. We have taken the tried and true individualized instruction approach using mathematics software and have added weekly critical thinking activities with written reflections to the curriculum. We also have written pre-tests and written exams so that we can check for accurate notation. As far as we know, we are the first of these types of programs in the nation to include critical thinking activities and a writing reflection component as part of the grade. All instructors teaching these courses use a standardized syllabus, pacing plan and grading requirements.

We have designed the Fast Track Math sequence as another pathway through the developmental math courses. This pathway allows students to accelerate their completion of the graduation requirements and progression to a college level math course. This course redesign has been driven by data that other colleges have shown in improving retention, success, and persistence rates in their developmental math courses across the nation. Our Fast Track Math curriculum has built upon the best practices of these successful programs. We recommend that the college support the redesign efforts so that more students reach their graduation goals here at Rio Hondo College.

Planning Year 2014-2015

A common theme throughout the courses is that computational errors occur more frequently than errors in order of operations or the setup for a problem. Student performance on application problems is universally far below the benchmark for the SLOs. We noticed that between our regular lecture PreAlgebra Math 30 and our Fast Track PreAlgebra Math 33, Math 33 students performed better on the SLOs concerning fractions.

The Fast Track Math courses have been developed to address gaps in understanding in content. Since these courses have only recently been implemented, we do not yet have adequate data to see improvement in SLO assessment results, with the exception of the fraction example above.

The new Fast Track curriculum uses individualized instruction based on mastery learning, currently using iLearn as the mathematics software. Students must show 90% mastery of a lesson, chapter or unit on iLearn to skip ahead, and 80% mastery of a lesson, chapter or unit while in learning mode to move ahead. There are weekly critical thinking activities in groups in class with a writing component for reflection on the activity. Students must earn 70% or better on written exams to move on to the next exam. There is a minimum pacing for each course, but a student can accelerate through the coursework and place into college level mathematics.

Three out of the four instructors teaching Math 33-Fast Track Prealgebra meet every other Thursday for one to two hours. Leah Griffith runs these meetings to support the two new part-time faculty members now teaching the course. They discuss the progress of the students in their classes, the critical thinking activities for past and upcoming weeks, and the rubrics for grading exams. As we expand our Fast Track course offerings in upcoming semesters, we will be training new instructors so that they understand how to implement this new type of individualized curriculum in a computerized classroom.

Our current levels of retention and success mirror results in other two-year colleges nationally. We are not content with being as good as everyone else, we want to be measurably better. Each semester we need to plan enough time for effective dialogue concerning SLO assessment data and how it informs our instruction. We will be keeping data on the progress of our Fast Track students and hope to show measurable improvement for students in the program.

We are still rolling out these courses, and only Math 33 has been taught twice. We do not want to include first semester data from our new classes as we are working out the kinks that first semester.