

The Higher Learning Commission Action Project Directory

Des Moines Area Community College

Project Details			
Title	Developmental MAT 064 Pilot	Status	REVIEWED
Category	1-Helping Students Learn	Updated	09-26-2013
Timeline		Reviewed	10-10-2013
	Planned Project Kickoff 01-03-2012	Created	11-30-2012
	Target Completion 08-26-2013	Version	1

1: Project Goal

A: Design and pilot a redesigned developmental math course that addresses the specific concepts and skills needed to be successful in non-STEM college level mathematics courses. The DMACC courses specifically addressed are MAT110 (Math for Liberal Arts) or MAT157/BUS211 (Elementary Statistics).

2: Reasons For Project

A: The success of students in developmental mathematics has traditionally been very poor in relation to grades, course retention, term-term persistence and degree completion. Currently DMACC offers several developmental math courses. Many developmental students are in a non-STEM track and intend to take MAT110 (Math for Liberal Arts) or MAT157/BUS211 (Elementary Statistics) to complete the college level math requirement for graduation. Our current offerings of MAT063 (Elementary Algebra I) and MAT073 (Elementary Algebra II) are primarily geared to remediate high school mathematics and prepare student for college level algebra courses. A majority of students struggle to pass MAT063 or MAT073 and neither course transitions well into the college level MAT110 or MAT157/BUS211 courses.

Students coming into the developmental courses have various levels of math ability and it is difficult to provide effective instruction for all students.

Math COMPASS assessments currently used by DMACC do not provide specific strengths and weaknesses of individual students. We have found limited effectiveness in using COMPASS scores in placing students in appropriate coursework.

There is little evidence to show that the current developmental sequenced course work prepares students for MAT110 (Math for Liberal Arts) or MAT157/BUS211 (Elementary Statistics).

3: Organizational Areas Affected

A: Academic programming and Math faculty are affected. The Curriculum Commission will be responsible for the review and recommendation of the new course. Advising will be working with students to place them in the course. The IT department will be supporting the technology in the classrooms. The Office of Institutional Effectiveness will provide data and support analysis. Academic Achievement centers will provide tutoring support.

4: Key Organizational Process(es)

A: A course will be developed that has specific skills needed for transitioning to MAT110 and MAT157/BUS211. Pretesting of students in the new course will provide specific strengths and weaknesses for students and at the same time faculty will be provided an aggregate of the class strengths and weaknesses for class customization.

Focused training modules will be based on individualized student procedural skills as well as student success initiatives in the classroom.

Technology, peers and teachers will provide feedback to the students' coursework.

Faculty will be able to track and monitor student time on task.

It is anticipated that successful completion of the pilot, faculty will have a more direct approach to provide the most personalized instruction based on individual course section needs and students will transition to and successfully complete MAT110 and MAT157/BUS211.

5: Project Time Frame Rationale

A: The time allotted for this action project encompasses the development of the course proposal and approval by the curriculum commission. The projected goal is to have the course available to pilot in fall term 2012. Two semesters of course offerings will provide the opportunity to study participation, passing, success, and transition to college level courses of students. Math faculty satisfaction in instructional processes will be able to be assessed.

6: Project Success Monitoring

A: Monitoring will be conducted at each phase of development.

7: Project Outcome Measures

A: Successful outcomes of this pilot will demonstrate increased student retention, passing and success in the MAT064 course, as well as increased transition to and success in MAT110, MAT157/BUS211.

Project Update

1: Project Accomplishments and Status

A: The success of students in developmental mathematics has traditionally been very poor in relation to grades, retention, persistence and success. Most students taking developmental math courses intend to progress to MAT110 (Math for Liberal Arts), or MAT157/BUS211 (Statistics) to fulfill graduation requirements. This has been problematic since a majority of these students do not pass the developmental courses. In MAT063 (Elementary Algebra) 55% students failed or withdrew from the course in 2012/13. Likewise in MAT073 (Elementary Algebra II) 37% students failed or withdrew from the course in that same time period. A design team of Math faculty convened. They studied the literature and attended conferences and ultimately used national research based studies on student learning in math to design a conceptual based versus skills based developmental Math course MAT064 (College Prep Math) that promotes metacognitive learning skills. This requires that the course be offered face-face with a web-based My Math Lab used for practice and individualized course section instruction in all MAT064 offerings. With the creation of the MAT064 course the faculty, both full-time and adjunct teaching the new course established a Google hang-out community where they meet bi-monthly to strategize the course, share best practices, and troubleshoot problems with student learning. At this update, every one of the six DMAACC campuses is offering the MAT064 course and 498 students have enrolled in it. Instructors from five of the six campuses participate in the Google Community. The pieces are in place to be able to study retention, persistence and success in these students. In addition, ALEKS assessment was studied and tested as alternative assessment tool to COMPASS for placement. ALEKS provides assessment and self-remediation opportunities for students. With the full support of Senior Administration, they implemented a pilot program to test ALEKS. ALEKS has now been adopted as a mandatory cut-off and placement requirement for all math students starting in fall 2014. The impact for students on this requirement will be to avoid misplacement in remedial courses and save tuition dollars. The project is complete as it was written.

2: Institution Involvement

A: The Math Faculty met frequently as a unit with the design team in developing this project. They used college data supplied by the Institutional Effectiveness Office to study math success in relation to grades, retention, persistence and degree completion. They researched alternative assessment tools and selected ALEKS as an assessment tool as an alternative to the current COMPASS assessment tool used by the College. They received full support from Senior Administration in piloting ALEKS and additionally, full support from the Academic Achievement Center and the Testing Center to implement the tool. Human Resources is working DMAACC's Distance Learning Department and Blackboard to develop the Google community model for faculty development across the college.

3: Next Steps

A: While this action project is being retired, data will continue to be collected and studied to build additional improvements and support for student learning in Math.

The Math Department is also looking at the processes of this action project to potentially create redesign teams for all math courses.

4: Resulting Effective Practices

A: Faculty used assessment data on the developmental courses as the baseline for this initiative. The data provided concrete, non-judgmental insight from which to develop their questions and focus a multi-pronged initiative for improving student learning support. Math faculty teaching the MAT064 course have established a Google hang-out community where they meet bi-monthly to strategize the course, mentor adjunct faculty, troubleshoot problems and enhance consistency in student learning. The community includes the original course design team of full-time faculty as well as adjuncts teaching the course. The resulting best practice one of is community, sharing, quality, consistency and rigor.

While the initial project was focused on non-STEM college level math courses, STEM topics such as Nursing, Computers, and Chemistry are imbedded in the instructional model of the course and DMACC science programs are looking at it as a resource to support students and enhance their programs.

5: Project Challenges

A: There are no challenges still being faced with this project.

Update Review

1: Project Accomplishments and Status

A: Des Moines Area Community College has made great progress in meeting the goals set forth for this Action Project. The Math faculty design team successfully designed a conceptual based hybrid developmental Math course MAT064 that promotes metacognitive learning skills. The implementation of this developmental mathematics course on every one of the six Des Moines Area Community College campuses is an accomplishment worth celebrating. This commitment aligns with the HLC Criterion 3 Teaching and Learning: Quality, Resources, and Support as well as AQIP Category 1 Helping Students Learn. The Google hang-out community is an exemplary demonstration of using technology for collaborative means and is an example of the Principle of High Performing Organizations Promoting Collaboration. The College may want to consider sharing this accomplishment with other institutions as a presentation at the Higher Learning Commission's Annual Meeting. The College has indicated that the Action Project is complete as it was written and is commended for this successful completion.

2: Institution Involvement

A: The frequent effort toward collaboration between the Math faculty and the design team is honorable. The project shows a constant commitment to collaboration and the foresight to plan proactively with sustainability, AQIP Category 5 Leading and Communicating. The College involved the Institutional Effectiveness Office, the Academic Achievement Center, the Testing Center, Senior Administration, and the Human Resources Department. This inclusion provided support for the project and demonstrates the Principles of High Performing Organizations Broad-based Involvement and Promoting Collaboration. The Action Project provides added value by using the Google community model as a delivery method to further faculty development across the College.

3: Next Steps

A:

The College has indicated that its next step is to close this Action Project. The College will continue to collect data and analyze that data to build additional improvements and support for student learning in Math. Additional redesign teams may be created for all math courses. This conveys support from leadership and dedication to a culture of continuous quality improvement, AQIP Category 8 Planning Continuous Improvement. Des Moines Area Community College may benefit from a system of using measures to quantify and analyze data and integrate the results into setting targets for improvement, outlining performance results, or discussing comparative data, AQIP Category 7 Measuring Effectiveness. In addition, Des Moines Area Community College should celebrate the success of this Action Project and recognize the individuals and departments most impacted by the project.

4: Resulting Effective Practices

A: This project is a strong example of how change can be facilitated and embraced when a focused and collaborative approach is undertaken. This Action Project resulted in encouraging best practice in the areas of building community, sharing, quality, consistency and rigor. The use of the Google hang-out community exhibits the AQIP Categories 1 Helping Students Learn and 5 Leading and Communicating. The College is to be commended on using several Principles of High Performing Organizations Foresight to Plan Proactively, Promoting Collaboration, and Broad-based Involvement.

5: Project Challenges

A: The original project indicated successful outcomes of this pilot will demonstrate increased student retention, passing and success in the MAT064 course, as well as increased transition to and success in MAT110, MAT157/BUS211. While no challenges now exist, the College will want to consider measures for collecting the critical data needed to provide for meaningful understanding, diagnosis, and improvement by measuring and reporting outcomes as well as progress toward those outcomes. The College may also want to focus on measuring improvement over time as well as transparently and publicly report progress and success. This data may be used to identify both barriers to student achievement and actions that can lead to further improved student success. It is evident Des Moines Area Community College understands the obstacles and is committed to sustaining the Action Project initiatives. Be sure to celebrate your success and continue to communicate progress throughout the College, AQIP Category 5 Leading and Communicating. These strategies will help to build upon this project's success for continuous quality improvement.