



Research Brief

Developmental Math Academic Success



Department of Planning, Research, and Effectiveness
(<http://www.alamo.edu/spc>)

Achieving the Dream (AtD) Initiative

May 2011

"Achieving the Dream: Community Colleges Count" is a multi-year initiative funded by the Lumina Foundation for Education that addresses the challenge of providing low income students and students of color with opportunities for academic success. The AtD student outcome indicators are the following: (1) Successful completion of developmental (remedial) courses and progression to college-level courses; (2) Enrollment and successful completion of college-level "gatekeeper" courses; (3) Productive grades (C or higher) in all courses; (4) Semester to semester persistence; (5) Graduation; and (6) Transfer (a PAC-specific goal). All colleges of the Alamo Community College District participate in this initiative to cultivate and promote a culture of evidence, accountability, equity, and excellence in support of the student outcomes. Feedback? Questions? Contact Mecca Salahuddin, msalahuddin1@alamo.edu, (210) 486-2897.

What has been the result of Developmental Math success initiatives at the College within the last five years?

Introduction

At SPC, the Math department has increased the support services for students requiring developmental education. In 2006, the Math department began requiring developmental math students in Math 0300 – 0303 to co-enroll in a computer math lab for one hour per week per semester. The lab component is designed where students may practice homework problems with a tutor available. The intent of the computer math lab is to introduce the students to the Mathematics Tutoring Lab. Students can receive help in the Math Computer lab (Who is your Bob?) or in the Math paper/pencil lab. All regular developmental math classes - Math 0300, Math 0301, Math 0302, and Math 0303 courses - have the 1-hour required lab component. For Math 0350, instructors have the option to require a computer lab component. Math 0351 and Math 0352 require a 2-hour lab instead of a 1-hour lab. Last summer, the department instituted Math 0353, accelerated and intensive developmental math for STEM majors, which has a 3-hour lab.

Methodology

Data were collected on students enrolled in the four levels of developmental math for the previous five years (2005-2009). Figure 1 shows 38.9% of the students were referred to Level 2 (MATH0301) of developmental math. MATH 0301 focuses on topics related to natural number exponents; algebraic expressions; linear equations and inequalities; concepts of lines; and appropriate

applications. The next highest level of referral was Level 1 (MATH0300) at 22.8%. MATH0300 focuses on operations involving whole numbers, fractions, decimals, and integers; as well as order of operations; and appropriate applications.

Following are results based on course completion, successful completion, and enrollment and completion of college level courses, known as gatekeeper courses.

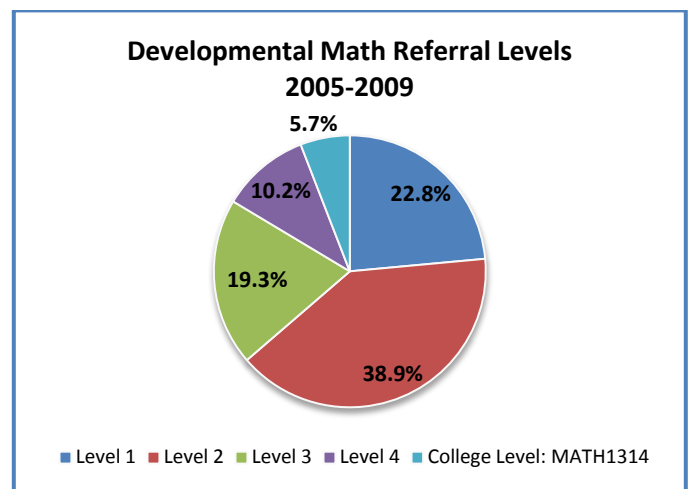


Figure 1: Percentage of Students Referred to Developmental English (2005-2009)

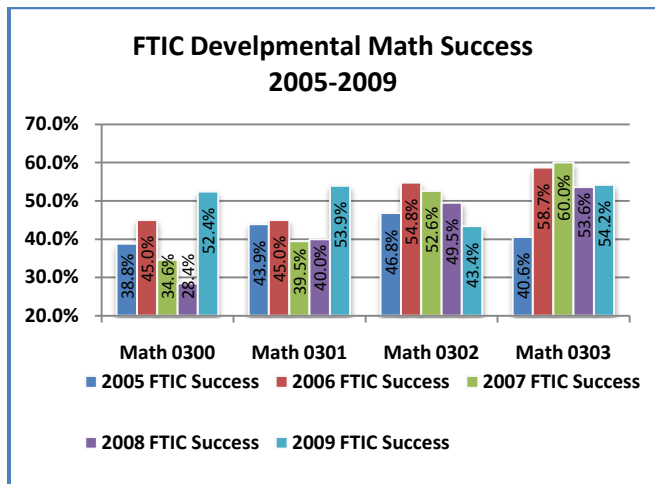
Results

1) Successful Course Completion

Successful course completion is defined as the percentage of students who complete the course with a grade of A, B, or C.

The data in Graph 1 shows successful course completion among first time in college (FTIC) students for 2005 -2009. The data indicates an upward trend in successful course completion among students enrolled

in Math 0300, 0301, and 0303. However, there was a slight decrease in the percentage for students enrolled in Math 0302. This decline can be attributed to curriculum changes at the College. These changes included expanding the content of Math 0302 to include topics previously taught in Math 0303.



Graph 1: FTIC students' success rates in Developmental Math (2005 -2009).

Figure 2 shows the percentage of students who within three years of enrolling and completing developmental math enrolled in college level math – Math 1314. College level math is considered a gatekeeper course and focuses on the study of quadratics; polynomials, rational, logarithms, and exponential functions. As well as, focus on systems of equations; progressions; sequences and series; and matrices and determinants.

As shown, there is was an increase in the percentage of students enrolling in College Level Math upon completion of their developmental education requirements. Of the Fall 2005 students, 29.4% progressed to college level math within three years. This number increased to 33.2% for the Fall 2006 cohort of students.

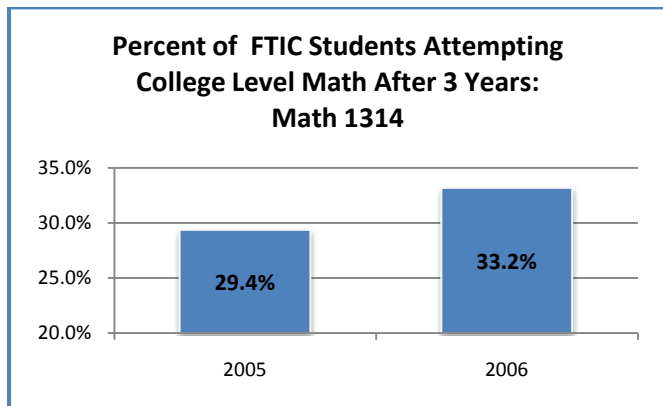


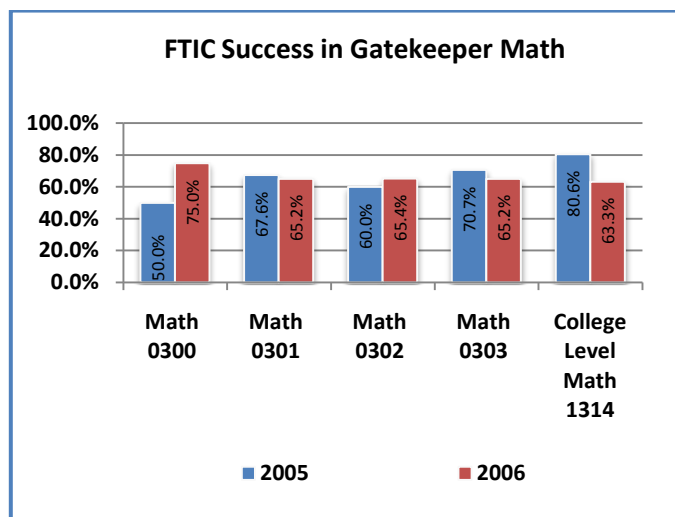
Figure 2: The percentage of students completing Developmental Math who enrolled in College Level Math

A previous research brief, [Developmental Math Progression](#), showed that students completing their

developmental math sequence were as successful in college level math as those enrolled directly into college level math.

2) Successful Course Completion in College level Math

Graph 2 indicates data for the Fall 2005 and 2006 developmental education cohort of students. Results show an increase in success rates in college-level math among students initially placed in developmental Math 0300 and 0302. However, there was a decline for those students initially placed in Math 0301 and 0303. In addition, there was a decline among students initially placed in college-level math.



Graph 2: Success Rates in College Level Math by initial placement level.

3) New Developmental Math Initiatives

In addition to the tutoring math lab requirement, the SPC Math department has implemented additional initiatives to impact student success. These initiatives will consist of:

- a) non-course-based remedial Prep for Accuplacer Student Success (PASS) and
- b) course-based, modular accelerated developmental education. The College will offer "Ready, Set, Go!" for math students.

Stay tuned for further information on these new initiatives and the Achieve the Dream outcome indicators in future research briefs.

Please visit the Achieve the Dream <http://www.alamo.edu/spc/admin/iprdept/ATD.aspx> website for other Research Briefs.