



## Developmental Math Progression and College Algebra Success

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

Achieving the Dream (AtD) Initiative

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"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. There are five AtD student outcome indicators: (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; and (5) Graduation. 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 student outcomes.

Feedback? Questions? Contact Dr. Maritha Burmeister at (210) 531-3369

### INTRODUCTION

This research assessed the successful completion of developmental Math courses, and progression to and success in college Algebra (Math 1314) by the Fall 2002 cohort of St. Philip's College first-time-in-college (FTIC) students.

### HIGHLIGHTS

By completing the developmental Math sequence and attempting Math 1314, developmental Math students are nearly as successful in this course as students not needing developmental Math. Most developmental students, however, do not "make it" to (i.e., do not get to enroll in) Math 1314.

The Math progression analysis indicates that the lower the Math course level where FTIC students start, the poorer the rate of success they attain in any subsequent Math course. For example, success in Math 0301, Math 0302, Math 0303, and Math 1314 was lower for students starting in Math 0300 than for the students starting in Math 0301.

Less than 5% of FTIC students who initially attempted Math 0300 successfully completed college Algebra within three years. The rate of success was 78% for students not needing developmental Math.

The majority of FTIC students come to SPC with inadequate Math skills (66% of Math 1314 students needed to take developmental Math courses). The need to collaborate with high schools to better prepare students in Math before they come to ACCD is evident.

### METHODOLOGY

Grades (including dual-credit and excluding transfer students) were collected by SPC Planning and Research for the initial and subsequent Math courses taken by the Fall 2002 SPC FTIC cohort through Summer 2005. Success in college Algebra refers to the successful completion (grades A, B, or C) rate in Math 1314. Successful Math progression refers to the rate of successful completion of any Math course based on the number of students 'attempting' (enrolled at census date) the initial Math course.

### FINDINGS

#### 1. Success in College Algebra

Figures 1 and 2 answer the question "How does the successful completion of college Algebra compare between the students who required developmental Math courses and the students

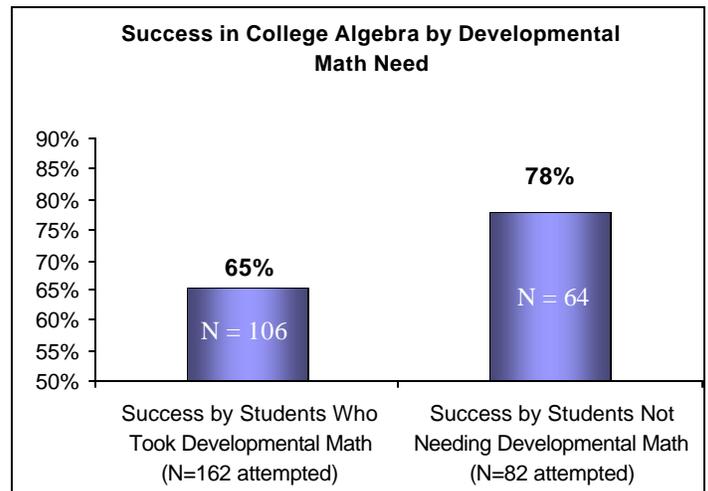


Figure 1

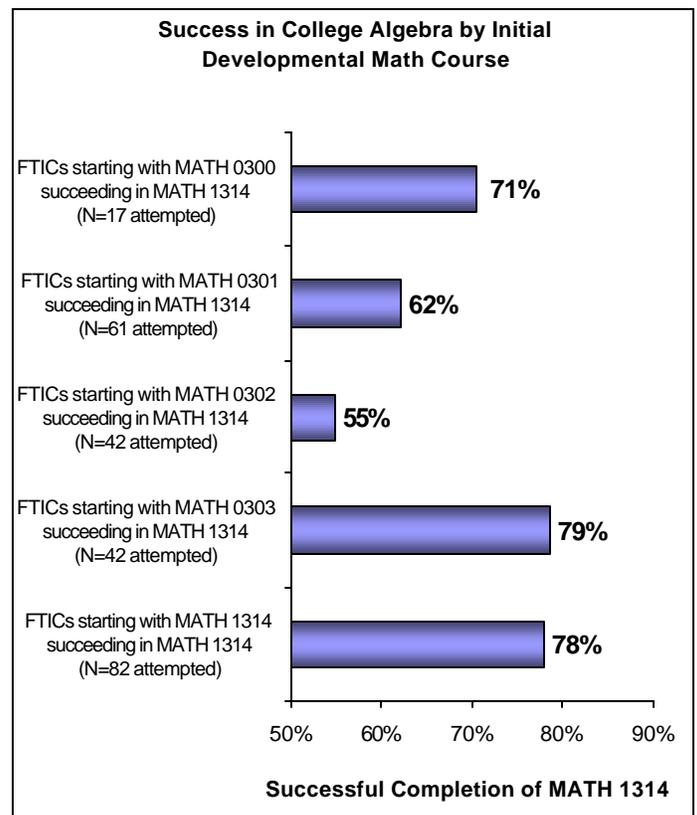


Figure 2

Comparatively, developmental math students succeeded at a lower rate than non-developmental math students. Figure 2 more specifically illustrates the rates of success in Math 1314 according to the students' starting developmental Math course.

Students who had started their Math progression from Math 0300 were nearly as successful (71%) in Math 1314 as those who started at higher Math Levels (Math 0303, 79% success rate and Math 1314, a 78% success rate). Those starting with Math 0301 and Math 0302 had considerably lower rates of success (62% and 55%, respectively). This suggests that students who need the most and the least remediation are having the most success in Math 1314.

## 2. Successful Math Progression

Figure 3 answers the question "How many developmental students from the cohort 'make it' to and attempt Math 1314?" Developmental students who start at higher Math levels are more likely to attempt college Algebra later. Only 5% of those who started in Math 0300 attempted Math 1314, compared to 47% of those who started in Math 0303.

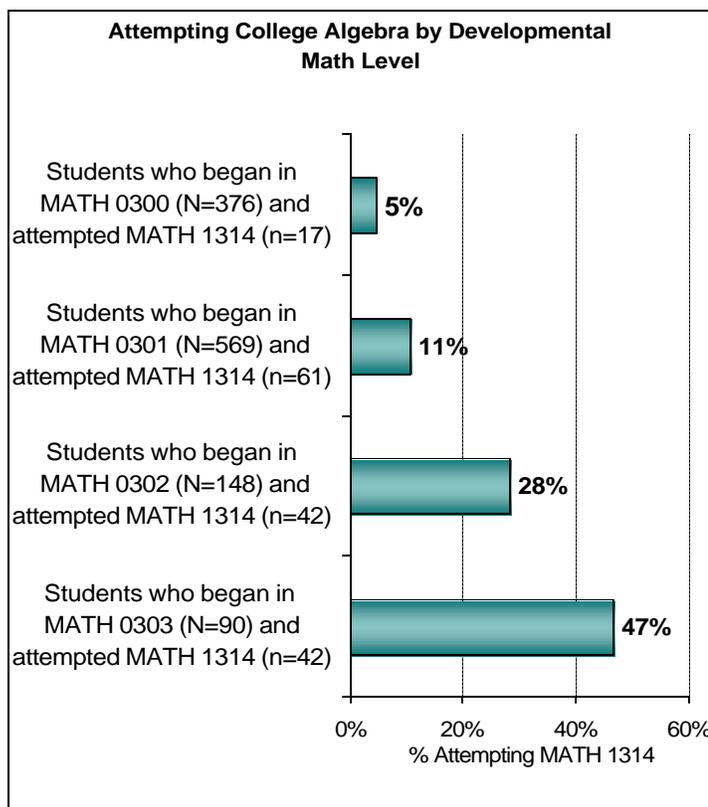


Figure 3

Figure 4 answers the question "How many developmental students from the cohort 'make it' to, attempt, and **succeed** in Math 1314?" by illustrating the successful completion and progression in Math according to the students' starting Math course.

The dark blue line ("students starting in Math 0300") indicates that the group of Math 0300 starters (N = 376) had a declining success rate as they progressed through subsequent Math courses. While 53% (N = 199) of the Math 0300 group succeeded in Math 0300, only 3% (N = 12) of them succeeded in Math 1314 in the reporting period.

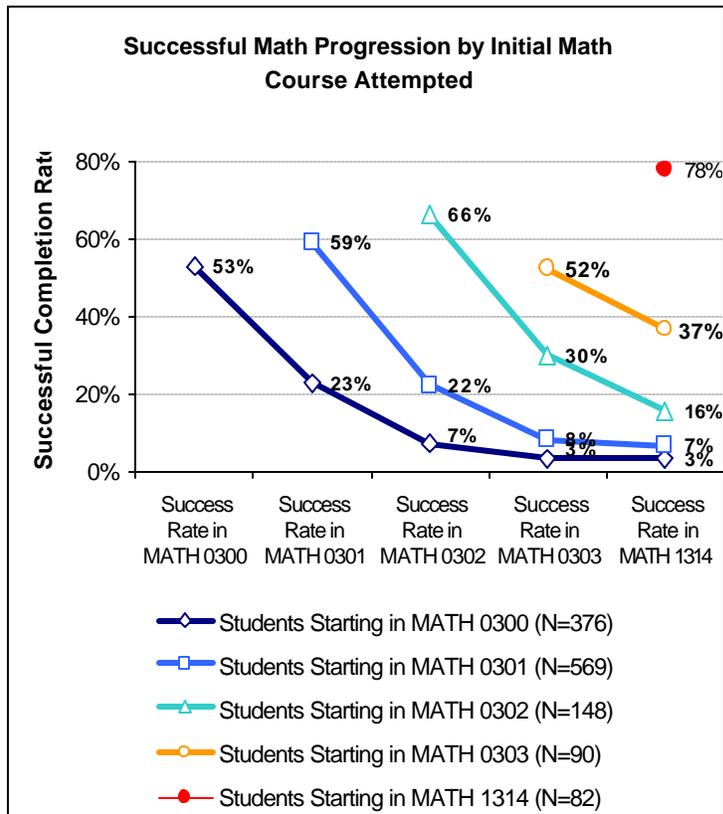


Figure 4

A similar declining pattern in the Math success progression was observed in the other student groups who started in Math 0301, Math 0302, and Math 0303. The students who did not require developmental Math (N = 82) had the highest rate of success (78%) in Math 1314.

## 3. Developmental Math Background

Figure 5 shows the number of developmental Math levels completed by FTIC students who attempted college Algebra between Fall 2000 and Summer 2005. Cumulatively, 66% of students attempting Math 1314 within the reporting period took at least one developmental Math course.

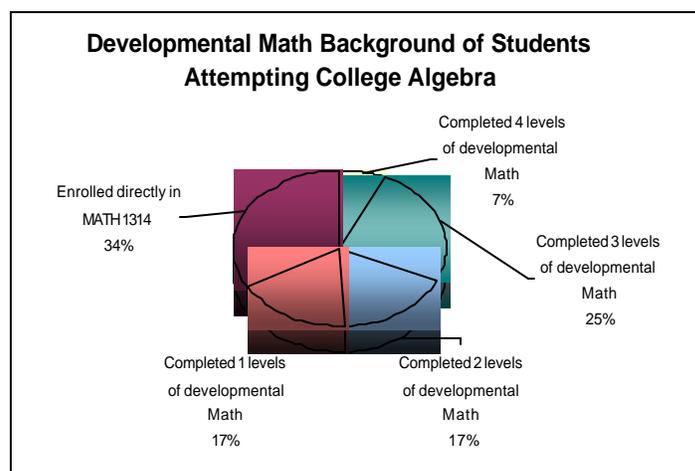


Figure 5