



MATH-090 / MATH 095 Student Success by Attempt from 2006-2007 to 2010-2011
MATH-090 ABC / MATH 095-ABC Student Success in Sequence from 2008-2009 to 2010-2011

Overview: At the request of Crafton Hills College Math faculty, the Office of Research and Planning examined the effectiveness of students completing the MATH-090ABC or MATH-095ABC sequence in relation to repeating MATH-090 or MATH095 two more times.

Background: MATH-090, Elementary Algebra is a 4 unit pre-collegiate level lecture course with a minimum of 64 hours of instruction designed to prepare students who would describe their math skill level as “pretty good at fractions, signed numbers, equations but I need to know algebra from the beginning.” MATH-095, Intermediate Algebra is a 4 unit pre-collegiate level lecture course with a minimum of 64 hours of instruction designed to prepare students who would describe their math skill level as “ok with some algebra but need to get my AA requirement and prepare for transfer courses.” Students are placed in either of these courses based on eligibility as determined by their assessment scores and educational background measures on the Accuplacer math assessment tests.

As an alternative, the MATH-090 and MATH-095 A, B, C courses were developed for students who “would benefit from more than 18 weeks to learn the material” and would prefer a “more hands-on learning environment.” In these courses, the curriculum is separated into lecture and lab hours. In each section of the sequence students earn between 1 to 1.5 units and must complete all parts (i.e. A, B, and C) to earn the 4 units and meet the equivalent requirements needed to obtain an AA and the pre-requisite for transfer level math. The A, B, C classes have been offered at Crafton on a limited basis beginning in the 2008-2009 academic year. Students currently self-select to enroll in this alternative format.

The two research questions posed by MATH faculty were:

1. Should students be required to take MATH-090 A, B, C if they have been unsuccessful completing MATH-090 after two attempts?
2. Should students be required to take MATH-095 A, B, C if they have been unsuccessful completing MATH-095 after two attempts?

Accordingly, the purpose of this brief is to provide information that helps to facilitate the discussion about whether or not to require students to enroll in the MATH-090ABC or MATH-095ABC sequence.

Methodology: The Office of Research and Planning identified all students who earned a grade on record in MATH-090 and MATH-095 from the 2006-2007 through 2010-2011 academic years. Grade on record (GOR) was defined as an A, B, C, D, F, P, NP W, or I grade. The earliest term attempt – regardless of grade earned on record – was recorded as the first course attempt, the next term attempt recorded as the second course attempt, and so on. In this manner, a record of each student’s number of attempts – and corresponding outcome – was linearly recorded. In regard to course outcomes, success rates were examined. Success rate is defined as the number of A, B, C, or P grades earned, divided by the total number of grades earned on record.

Similarly, all students who earned a GOR in MATH-090 A, B, C and MATH-095 A, B, C from 2008-2009 through 2010-2011 academic years were identified. An unduplicated file of the students who

successfully completed the “A” portion was used to merge the “B” and “C” records and identify students who were successful in all three parts of the course required to meet the AA degree requirement.

Findings:

Research Question #1: Should students be required to take MATH-090 A, B, C if they have been unsuccessful completing MATH-090 after two attempts?

The success rate in MATH-090 for students making three or more attempts was 45%. Conversely, 38% of the students who started in MATH-090A successfully completed all three courses in the sequence

MATH-090

- In the most recent five academic years, there were 3,206 students who were identified as making a first attempt at MATH-090.
- Of those, 53% were successful (N=1,691) and 47% (N=1,515) of the students did not successfully complete the course.
- While 43% of the unsuccessful students (N=647) made a second attempt to successfully complete the course, 57% (N=868) did not enroll in MATH-090 a second time.
- Of the 647 students identified as making a second attempt at MATH-090, 42% (N=272) were successful while 58% (N=375) did not successfully complete MATH-090 in their second attempt.
- Of the 375 students who were not successful in their first and second attempts, 36% (N=135) made a third attempt to successfully complete MATH-090.
- While 39% (N=53) of those students were successful in their third attempt, 61% (N=82) did not successfully complete MATH-090 for the third time.
- 33% (N=27) of the unsuccessful students made an additional attempt, and of those 30% (N=8) were successful while 70% (N=19) were not successful in four or more attempts.
- **In all, of the 135 students who made three or more attempts, 61 (45%) successfully completed MATH-090.**

MATH-090 A, B, C

- In the most recent three academic years, there were 119 students who enrolled in MATH-090A. Of those, 18% (N=22) were not successful, while the majority, 82% (N=97) were successful and eligible to enroll in MATH-090B.
- 99% of the students, (N=96) subsequently enrolled in MATH-090B.
- Of the 96 students who attempted MATH-090B, 28% (N=27) were not successful, while 72% (N=69) of the MATH-090B students successfully completed this portion of the course and were eligible to enroll in MATH-090C.
- 51% of the students (N=49) subsequently enrolled in MATH-090C of which 92% (N=45) were successful.
- **Therefore, 45 of the 119 students (38%) who started the MATH-090ABC sequence successfully completed all of the three courses needed to meet the AA degree requirement and the equivalency for MATH-090.**

Figure 1: Attempts and Success of CHC students in MATH-090 2006-2007 to 2010-2011 Academic Years.

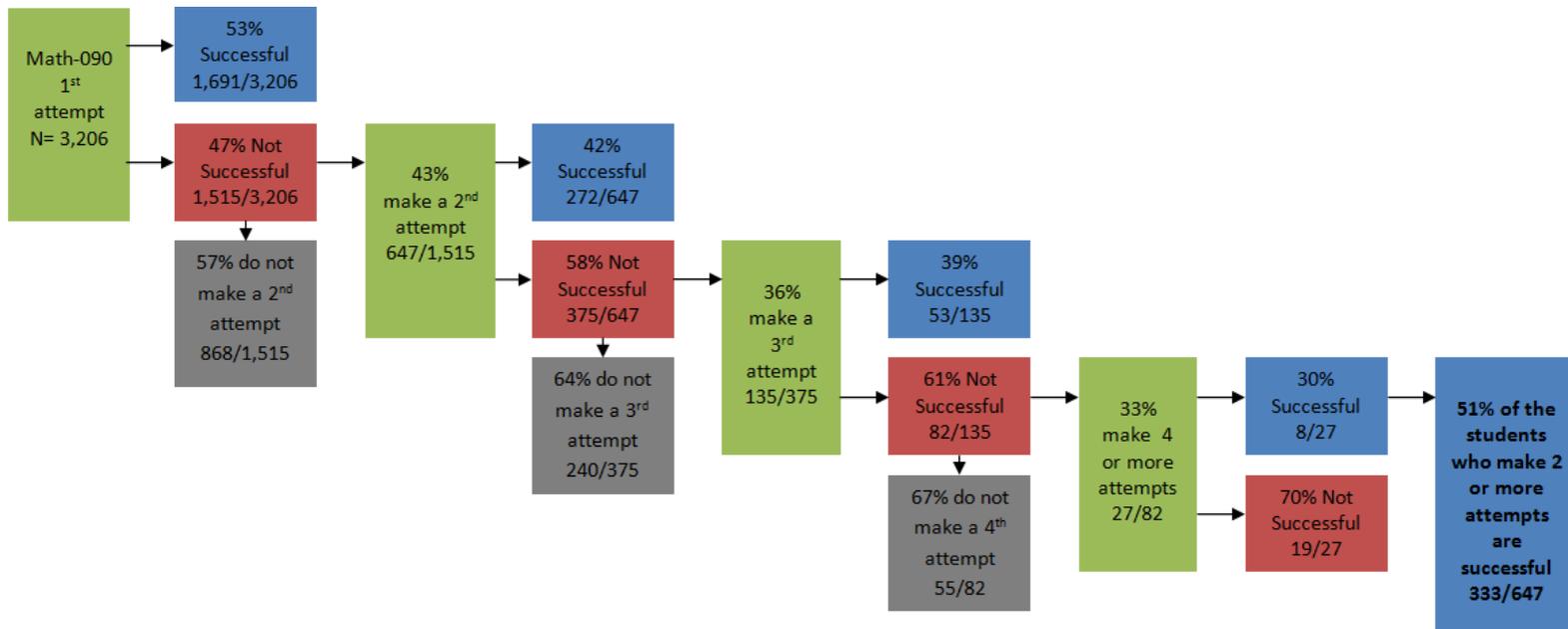
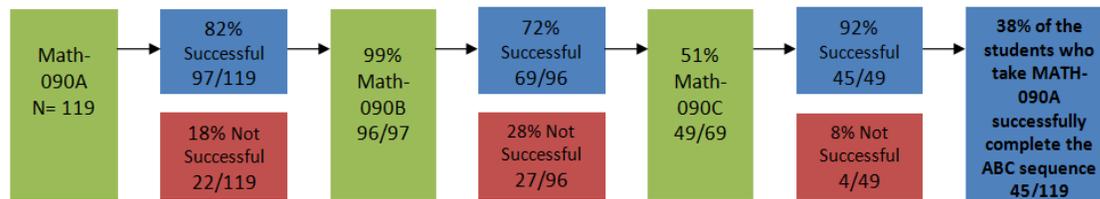


Figure 2: Success of CHC students in MATH-090 A, B, and C 2008-2009 to 2010-2011 Academic Years.



Findings:

Research Question #2: Should students be required to take MATH-095 A, B, C if they have been unsuccessful completing MATH-095 after two attempts?

The success rate in MATH-095 for students making three or more attempts was %. Conversely, 45% of the students who started in MATH-095A successfully completed all three courses in the sequence.

MATH-095

- In the most recent five academic years, there were 4,585 students who were identified as making a first attempt at MATH-095.
- Of those, 59% were successful (N=2,714) and 41% (N=1,870) of the students did not successfully complete the course.
- While 46% of the unsuccessful students (N=856) made a second attempt to successfully complete the course, 54% (N=1,014) did not enroll in MATH-095 a second time.
- Of the 856 students identified as making a second attempt at MATH-095, 53% (N=453) were successful while 47% (N=403) did not successfully complete MATH-095 in their second attempt.
- Of the 403 students who were not successful in their first and second attempts, 34% (N=136) made a third attempt to successfully complete MATH-095.
- While 46% (N=62) of the students were successful in their third attempt, 54% (N=74) did not successfully complete MATH-095 for the third time.
- Of the 23 students who make a fourth attempt, 13 (57%) are successful while 10 students (43%) are not successful for the fourth time.
- **In all, of the 136 students who made three or more attempts, 55% (N=75) successfully completed MATH-095.**

MATH-095 A, B, C

- In the most recent three academic years, there were 184 students who enrolled in MATH-095A. Of those, 31% (N=57) were not successful, while the majority, 69% (N=127) were successful and eligible to enroll in MATH-095B.
- 78% of the students, (N=99) subsequently enrolled in MATH-095B.
- Of the 99 students who attempted MATH-095B, 7% (N=7) were not successful, while 93% (N=92) of the MATH-095B students successfully completed this portion of the course and were eligible to enroll in MATH-095C.
- 100% of the students (N=92) subsequently enrolled in MATH-095C of which 90% (N=83) were successful.
- **Therefore, 83 of the 184 students (45%) who started the MATH-095ABC sequence successfully completed all of the three courses needed to meet the AA degree requirement and the equivalency for MATH-095.**

Figure 3: Attempts and Success of CHC students in MATH-095 2006-2007 to 2010-2011 Academic Years.

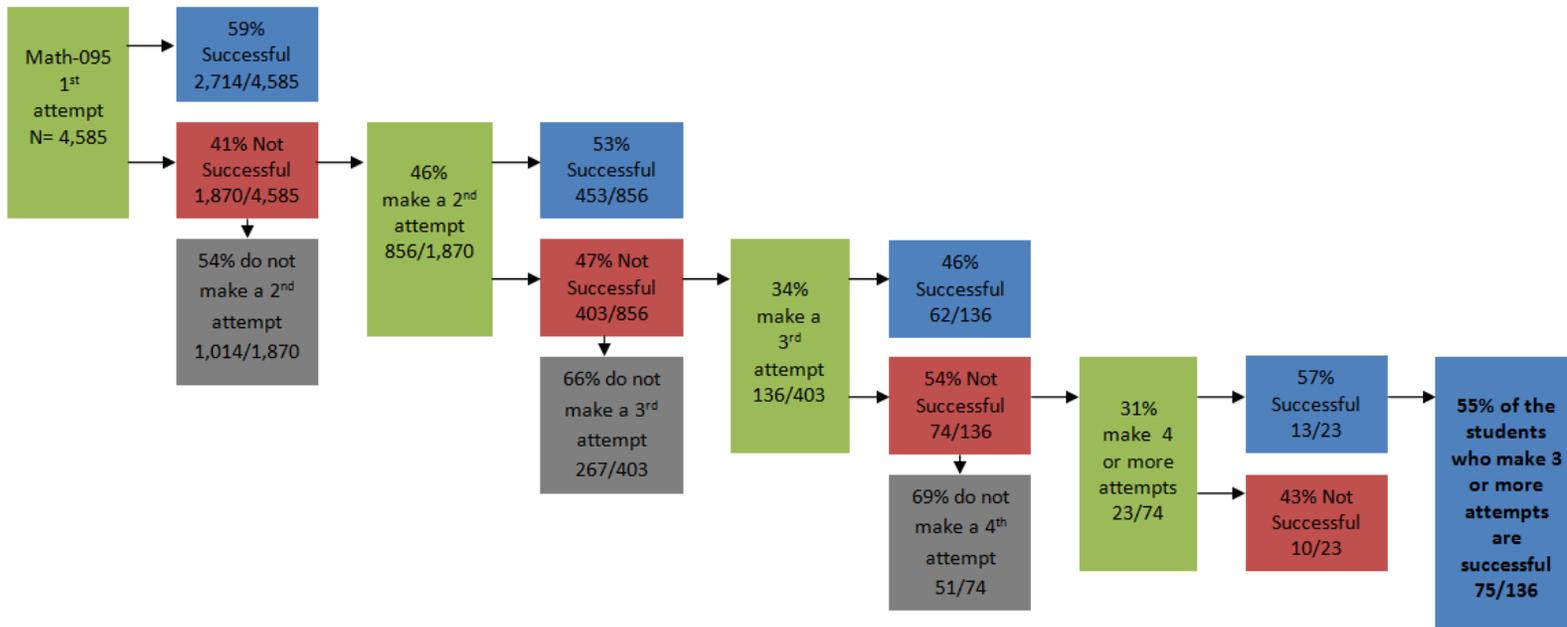


Figure 4: Success of CHC students in MATH-095 A, B, and C 2008-2009 to 2010-2011 Academic Years.

