

Has the LMC DE Program impacted persistence to and success in transfer-level math and English courses?

**A revised summary of recent LMC DE persistence studies,
originally prepared by Myra for BSI work in FA 07
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LMC students who begin two-levels below transfer:

Based on our most recent cohort study, LMC students who begin two-levels below transfer persist to Eng 100 at lower rates than the statewide comparison group. (See footnote for cautions about this comparison.)¹

FA 03 Eng 70 cohort (n=240): 24% enroll in Eng 100 by FA 06
Center for Student Success MIS data: 31%

However, cohort studies over the last ten years in developmental English at LMC show significant increases in persistence to and success in transfer-level English for students beginning two-levels below transfer. (Note: Eng 100 is LMC's 1A)

FA 93 Eng 70 cohort (n=177): 4.5% successfully completed Eng 100 by FA 96
FA 99 Eng 70 cohort (n = 239): 9% successfully completed Eng 100 by FA 02
FA 03 Eng 70 cohort (n=240): 18% successfully completed Eng 100 by FA 06

How much of an improvement can we expect in this last figure?

If we think about the trajectory of an Eng 70 student who successfully completes a transfer-level English course, this student has successfully completed Eng 70, enrolled in Eng 90, successfully completed Eng 90, enrolled in Eng 100 and successfully completed Eng 100. So is 18% an impressive figure or not? For comparison, let's use the overall college success and persistence rates. We do not have success rates that reflect the increased time allotted to students in the cohort, so we will need to estimate. LMC's overall success rate hovers around 70%; this figure includes non-academic courses, such as PE; LMC transferable course success rate likewise is usually about 70%. So let's be optimistic and assume that 70% of students taking developmental English will successfully complete each course within the time frame of the study. LMC's overall semester-to-semester persistence rate is usually between 55-60%. Let's assume that the persistence of students who are at the college several semesters is higher, so let's be

¹ Statewide, The Center for Student Success (a project of the Research and Planning Group) conducted an MIS Project that followed student persistence from lower level English courses to any transferable English class *after 8 semesters*. The sample size for this study was 40,150 students. We cannot directly compare our numbers to their numbers because of two differences:

1. The CSS study allowed eight semesters before measuring persistence, our study allowed 6 semesters
2. The CSS study used any transferable English course, our study used the equivalent of English 1A

optimistic and estimate that 70% of those who successfully complete a course will enroll in the next course in the sequence. Based on these estimates, what percentage of those enrolled in English 70 would successfully complete a transfer-level English course? Well, if 70% successfully complete Eng 70 and, of those who successfully complete Eng 70, 70% enroll in Eng 90, etc., we would have $0.70 (0.70) (0.70) (0.70) (0.70) = 16.8%$ successfully completing a transfer-level English course. So the 18% persistence figure for the English 70 cohort is a respectable expectation for students attaining their goal of English preparation for transfer.

Here are the actual cohort percentages: $(0.68) (0.74) (0.73) (0.66) (0.74) = 18%$

Number enrolled in Eng 70 FA 03	Passed Eng 70 by FA 06	Enrolled in Eng 90 by FA 06	Passed Eng 90 by FA 06	Enrolled in Eng 100 by FA 06	Passed Eng 100 by FA 06	percent of cohort who passed Eng 100
240	163/240=68%	121/163=74%	88/121=73%	58/88=66%	43/58=74%	43/240=18%

Though we lack both statewide comparisons and longitudinal LMC comparisons for math, a recent cohort study of students beginning two-levels below transfer in the LMC developmental math sequence showed comparable persistence to and success in transfer-level math.

FA 03 Math 25 (Elementary Algebra)
cohort (n=292): 17% successfully completed a transfer math course by FA 06

Here are the actual cohort percentages: $(0.63) (0.64) (0.81) (0.57) (0.89) = 17%$

Number enrolled in Math 25 FA 03	Passed Math 25 by FA 06	Enrolled in Math 30 by FA 06	Passed Math 30 by FA 06	Enrolled in transfer-level math by FA 06	Passed transfer-level math by FA 06	Percent of cohort who passed transfer-level math
292	185/292=63%	118/185=64%	96/118=81%	55/96=57%	49/55=89%	49/292=17%

Students who begin one-level below transfer:

Based on the two most recent cohort studies, LMC students who begin one-level below transfer persist to Eng 100 at rates comparable to the statewide comparison group.

FA 03 Eng 90 cohort (n=497): 54% enroll in Eng 100 by FA 05
FA 04 Eng 90 cohort (n=553): 54% enroll in Eng 100 by FA 06
Center for Student Success MIS data: 56%

Three Eng 90 cohort studies show no significant change in success in Eng 100 for those who enroll in consecutive semesters; however, if we include students who “stop out”, we see significant increases:

FA 02 Eng 90 cohort (n=476): 31% successfully completed Eng 100 by SP 03
 FA 03 Eng 90 cohort (n=497): 31% successfully completed Eng 100 by SP 04,
 42% by FA 05
 FA 04 Eng 90 cohort (n=553): 28% successfully completed Eng 100 by SP 05,
 38% by FA 06

We see the same pattern in two Math 30 (Intermediate Algebra) cohort studies:

FA 03 Math 30 cohort (n=320): 26% successfully completed a transfer math course
 by SP 04, 39% by FA 05
 FA 04 Math 30 cohort (n=337): 23% successfully completed a transfer math course
 by SP 05, 37% by FA 06

For comparison, let's again use the overall college success rate of 70% and a optimistic persistence rate of 70% to account for the increase in time frame. Based on these estimates, what percentage of those enrolled in an English or math course that is one-level below transfer would successfully complete a transfer-level course? We would have $0.70 (0.70) (0.70) = 34.3\%$ successfully completing a transfer-level math or English course. The FA 03 and FA 04 cohorts of DE students exceed this percentage if they are given two years.

Here are the actual percentages from the cohorts:

	Number enrolled in Eng 90	Passed Eng 90	Enrolled in Eng 100	Passed Eng 100	percent of cohort who passed Eng 100
FA 03 cohort; achievement by FA 05	497	331/497=67%	268/331=81%	209/268=78%	209/497=42% $(0.67)(0.81)(0.78) = 42\%$
FA 04 cohort; achievement by FA 06	553	377/553=68%	301/377=80%	211/301=70%	211/553=38% $(0.68)(0.80)(0.70) = 38\%$

	Number enrolled in Math 30	Passed Math 30	Enrolled in transfer math	Passed transfer math	percent of cohort who passed transfer math
FA 03 cohort; achievement by FA 05	320	242/320=76%	171/242=71%	124/171=73%	124/320=39% $(0.76)(0.71)(0.73)=39\%$
FA 04 cohort; achievement by FA 06	337	254/337=75%	178/254=70%	126/178=71%	126/337=37% $(0.75)(0.70)(0.71)=37\%$

So can we conclude that the Developmental Education Program at LMC has positively impacted persistence to and success in transfer-level math and English? Well, we can definitely say that there have been significant improvements in English 100 completion rates for students beginning two-levels below 1A since the English department implemented an integrated reading and writing curriculum in 1999. We can also say that, since the Math Department implemented the Developmental Math Program in 2003, we have seen that developmental math students persist to and succeed in transfer-level math courses at rates comparable to those in English.