

MCCC Math Pre-Redesign vs. Post-Redesign Outcomes

Data were acquired from FL2009 to SU2011 and WI2012 to FL2013; FL2011 was excluded since both traditional and redesigned math courses were employed that semester. For first-try completion rates, when students had multiple records for one course, the first record was the record used. Tests for statistical significance were not conducted except for post-MATH-151 courses, since grading methods were incongruent pre and post-redesign. For pre-redesign year-long cohort tracking, I could not examine just B and above because if a student received a C, for instance, they passed by pre-redesign standards and thus did not retake the course; artificially setting the standard to a B to be congruent with post-redesign grading would appear as if they failed and did not try again.

First-Try MATH-090 Completion Rates

		Grade			Total
		Pass*	Fail*	W	
Pre-Redesign (FL2009 - SU2011)	Count	467	378	203	1048
	%	44.6%	36.1%	19.4%	100%
Post-Redesign (WI2012 - FL2013)	Count	394	473	163	1030
	%	38.3%	45.9%	15.8%	100%

* Pre-Redesign "Pass" = A – D whereas Post-Redesign "Pass" = A – B, so success rates are not directly comparable.

Cohort MATH-090 Completion Rates Within Year

		N	First-Time Pass	Passed Within a Year	Failed or W & Reattempted Within a Year
Pre-Redesign (FL09, WI10, FL10 cohorts)	Count	789	346	368	74
	%		43.9%	46.6%	16.7%
Post-Redesign (WI12 & WI13 cohorts)	Count	302	107	123	44
	%		35.4%	40.7%	22.6%

Note: Pre-Redesign "Pass" = A – D whereas Post-Redesign "Pass" = A – B

First-Try MATH-092/150 Completion Rates

		A	B	C	D	E	W	Pass (80+%)	Fail (< 80%)	Total
Pre-Redesign (FL2009 - SU2011)	Count	318	338	343	142	315	286	NA	NA	1742
	%	18.3%	19.4%	19.7%	8.2%	18.1%	16.4%	NA	NA	100%
Post-Redesign (WI2012 - SU2012)	Count	103	54	NA	NA	82	75	NA	NA	314
	%	32.8%	17.2%	NA	NA	26.1%	23.9%	NA	NA	100%
Post-Redesign (FL2012 - FL2013)	Count	NA	NA	NA	NA	NA	108	322	351	781
	%	NA	NA	NA	NA	NA	13.8%	41.2%	44.9%	100%

First-Try MATH-092/150 Completion Rates (Data recategorized from above)

		Pass (80+%)	Fail (< 80%)	W	Total
Pre-Redesign (FL2009 - SU2011)	Count	656	800	286	1742
	%	37.7%	45.9%	16.4%	100%
Post-Redesign (WI2012 - FL2013)	Count	479	433	183	1095
	%	43.7%	39.5%	16.7%	100%

Cohort MATH-092/150 Completion Rates Within Year

		N	First-Time Pass	Passed Within a Year	Failed or W & Retattempted Within a Year
Pre-Redesign (FL09, WI10, FL10 cohorts)	Count	1326	891	924	71
	%		67.2%	69.7%	16.3%
Post-Redesign (WI12 & WI13 cohorts)	Count	471	200	234	67
	%		42.5%	49.7%	24.7%

Note: Pre-Redesign "Pass" = A – D whereas Post-Redesign "Pass" = A – B

First-Try MATH-151 Completion Rates

		Grade						Total
		A	B	C	D	E	W	
Pre-Redesign	Count	175	204	208	100	137	210	1034
(FL2009 - SU2011)	%	16.9%	19.7%	20.1%	9.7%	13.2%	20.3%	100%
Post-Redesign	Count	412	210	11*	0	226	125	984
(WI2012 – FL2013)	%	41.9%	21.3%	1.1%	0.0%	23.0%	12.7%	100%

*Students who completed the course with a B, but did not regularly attend, received a C.

First-Try MATH-151 Completion Rates (Data recategorized from above)

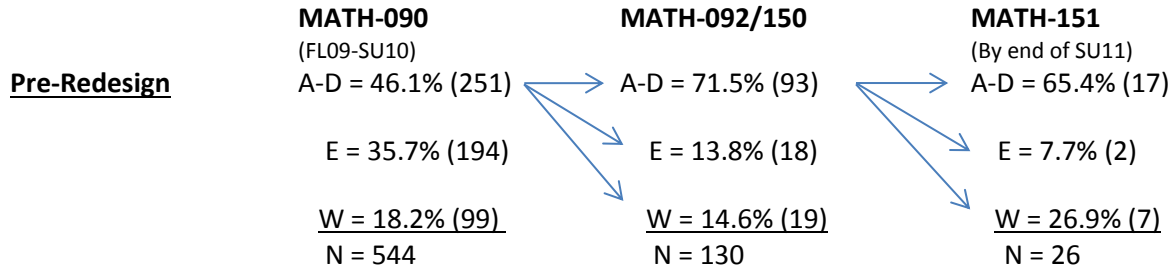
		Pass (80+%)	Fail (< 80%)	W	Total
Pre-Redesign	Count	379	445	210	1034
(FL2009 - SU2011)	%	36.7%	43.0%	20.3%	100%
Post-Redesign	Count	622	237	125	984
(WI2012 – FL2013)	%	63.2%	24.1%	12.7%	100%

Cohort MATH-151 Completion Rates Within Year

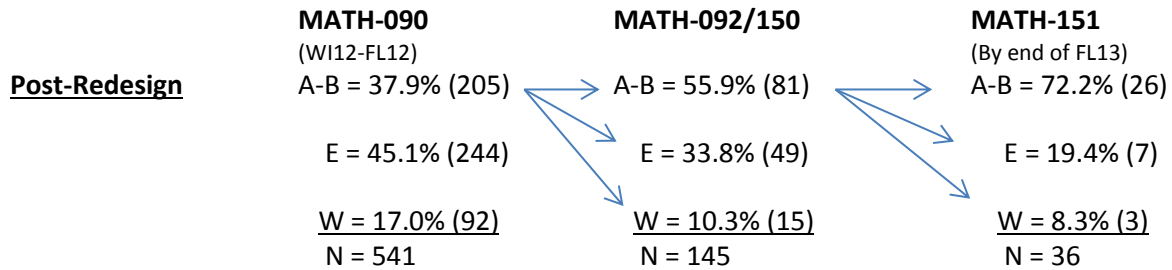
		N	First-Time Pass	Passed Within a Year	Failed or W & Reattempted Within a Year
Pre-Redesign	Count	731	482	516	68
(FL09, WI10, FL10 cohorts)	%		65.9%	70.6%	27.2%
Post-Redesign	Count	398	249	270	35
(WI12 & WI13 cohorts)	%		62.6%	67.8%	23.5%

Note: Pre-Redesign “Pass” = A – D whereas Post-Redesign “Pass” = A – B

Trajectories of Developmental Math Sequence: Pre-Redesign vs. Post-Redesign



- 46.1% (251/544) passed 090 on the first try with A-D.
- 51.8% (130/251) of those who passed 090 with A-D, attempted 092/150; 71.5% (93/130) passed 092/150 with A-D.
- 28.0% (26/93) of those who passed 092/150 with A-D, attempted 151; 65.4% (17/26) passed 151 with A-D.
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- 37.9% (205/541) passed 090 on the first try with A-B.
- 70.7% (145/205) of those who passed 090 with A-B, attempted 092/150; 55.9% (81/145) passed 092/150 with A-B.
- 44.4% (36/81) of those who passed 092/150 with A-B, attempted 151; 72.2% (26/36) passed 151 with A-B.

Average Grades of MATH-151 Completers in Subsequent Math Courses

		N	Mean	SD
156	Pre-Redesign 151	11	2.7	1.2
	Post-Redesign 151	12	2.6	1.1
157	Pre-Redesign 151	143	2.7	1.0
	Post-Redesign 151	80	2.6	1.4
162	Pre-Redesign 151	106	2.6	1.0
	Post-Redesign 151	61	2.6	1.0
164	Pre-Redesign 151	47	2.3	1.4
	Post-Redesign 151	20	2.0	1.3
154	Pre-Redesign 151	23	2.6	1.3
	Post-Redesign 151	11	2.0	1.3

None of the above math classes' results were statistically significant, meaning that while pre-redesign and post-redesign group means sometimes appear to differ, we cannot be confident that true differences exist due to the variation within each group's grades (SD), and/or small sample sizes.

MCCC Math Pre-Redesign vs. Post-Redesign Results Summary

Data were acquired from FL2009 to SU2011 and WI2012 to FL2013; FL2011 was excluded since both traditional and redesigned math courses were employed that semester. For first-try completion rates, when students had multiple records for one course, the first record was the record used. Tests for statistical significance were not conducted except for post-MATH-151 courses, since grading methods were incongruent pre and post-redesign. For pre-redesign year-long cohort tracking, I could not examine just B and above because if a student received a C, they passed by pre-redesign standards and thus did not retake the course; artificially setting the standard to a B to be congruent with post-redesign grading would appear as if they failed and did not try again.

MATH-090

Pre-redesign 090 had 6.3% more passes than post-redesign, but also lower standards (“D” as opposed to “B”) and more withdrawals. Post-redesign outcomes were more favorable in terms of 5.9% more students who failed or withdrew the first time, reattempting the course, and 2.6% more students passing the course within a year.

MATH-092/150

Post-redesign had 6% more first-time passes when 80% or above was considered passing. The cohort tracking analysis demonstrated that 4.7% more students were successful the second time around during post-redesign vs. pre-redesign implementation. Post-redesign, more students who failed or withdrew initially, attempted the course again within a year.

MATH-151

Post-redesign had 26.5% more first-time passes when 80% or above was considered passing. The cohort tracking analysis demonstrated that 0.5% more students were successful the second time around during post-redesign vs. pre-redesign implementation. Pre-redesign, more students who failed or withdrew initially, attempted the course again within a year.

Post-MATH-151

Outcomes in MATH-156, 157, 162, 164, and 154 were not reliably different between the pre-redesign and post-redesign MATH-151 groups.

MATH-090 to 092/150 to 151 Sequence Tracking

090: Pre-redesign, 8% more students passed their first-time, although the standard for passing was lower.

092/150: Post-redesign, 19% more students who passed 090, attempted 092/150. Regarding course completion, 15.6% more students in the pre-redesign cohort completed the course, although the standard for passing was lower.

151: Post-redesign, 16.4% more students who passed 092/150, attempted 151. Regarding course completion, 6.8% more students in the post-redesign cohort completed the course, despite the higher standard.

Few students within either model completed the 090 to 092/150 to 151 math sequence in a 5-6 semester timeframe.