

In spring 2012, the VCCS implemented significant changes to developmental math placement and instruction across the system. To measure the impact of the redesign, the VCCS is tracking students from their initial assessment for college-readiness through placement in developmental math courses, then into college-level courses, and finally through graduation or transfer.

Study Cohort

This is the second snapshot in a series following 11,117 students who took the Virginia Placement Test-Math (VPT-Math) prior to January 15, 2012 and subsequently enrolled in the spring 2012 term. These students were the first group to complete the VPT-Math and as a result, are the only group able to enroll in a year of redesigned developmental math courses.

Cohort Progress through Developmental Math

- Of the study cohort, 57% (6,308) of students placed into units 1-5 and 10% (1,115) of students placed into units 6-9 of developmental math, while 33% (3,694) of students placed directly into college-level math.
- Of students who placed into units 1-5, 71% (4,468) enrolled in developmental math within 4 terms, 3% (196) enrolled in only college-level math courses, and 26% (1,644) did not enroll in any math courses.
 - Of the 4,468 students who enrolled in developmental math within 4 terms, 32% (1,425) completed their required developmental units while 7% (314) enrolled in college-level math courses without completing their developmental math requirements.
- Of students who placed into units 6-9, 36% (399) enrolled in developmental math within 4 terms, 36% (404) enrolled in only college-level math courses, and 28% (314) did not enroll in any math courses.
 - Of the 399 students who enrolled in developmental math within 4 terms, 41% (163) completed their required developmental units while 13% (53) enrolled in college-level math courses without completing their developmental math requirements.
- 56% of students in the total study cohort either successfully completed their required developmental math units or were ready for college-level math by the end of spring 2013.

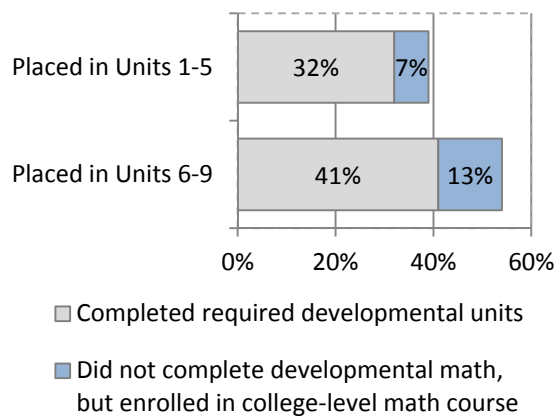
Overall Progress through Developmental Math

- The percentage of students enrolling in developmental math who made progress (i.e., passed at least one course/unit) increased from 50% in fall 2011 to 65% in fall 2012.
- While the average number of developmental math credit hours completed within a semester stayed the same (2.1), the average number of developmental math credit hours attempted has been reduced due to the redesign, from 4.2 in fall 2011 to 2.8 in fall 2012.

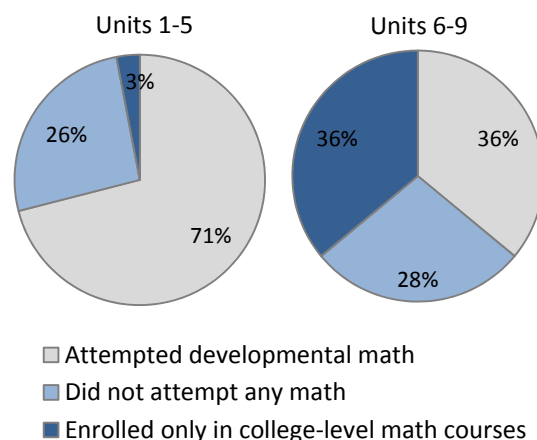
Reflections

In fall 2011, half the students who enrolled in developmental math did not complete any credits. A year later, under the redesigned system, nearly two-thirds of students made progress in completing their developmental math requirements. More than half the students in the study cohort were prepared to enter college-level math by the end of the spring 2013 term. Though still a work in progress, developmental mathematics redesign appears to be better diagnosing students' needs; and helping them advance to college-level mathematics at a faster pace.

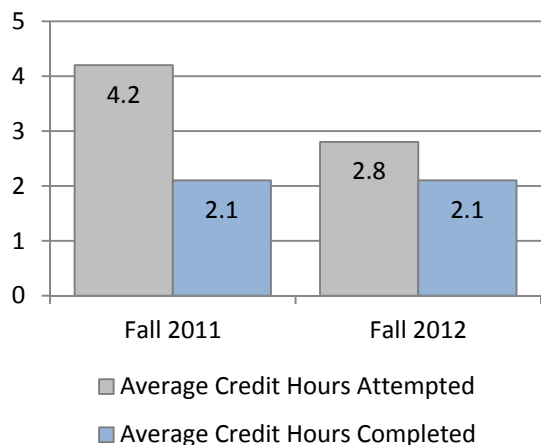
Outcomes for Students Attempting Developmental Math Within Four Terms of Placement



Developmental Math Outcomes by Placement



Developmental Math Credit Hours Attempted and Completed



**STUDENT PLACEMENT, ENROLLMENT, AND SUCCESS IN
DEVELOPMENTAL MATH FROM SPRING 2012 THROUGH SPRING 2013**

College	Took VPT Math and Enrolled in VCCS in Spring 2012	Students Placed In Units 1-5	Students Placed In Units 6-9	Placed in Units 1-5		Placed in Units 6-9		Total Students in Initial Cohort Who Needed Developmental Math and Succeeded Within 4 Terms or Were College-Ready	
				Enrolled in Developmental Math	Completed All Required Units 1-5	Enrolled in Developmental Math	Completed All Required Units 6-9	N	%
	N	%	%	N	%	N	%	N	%
Blue Ridge	271	58%	14%	120	41%	13	69%	156	58%
Central Virginia	383	62%	11%	175	6%	13	—*	188	49%
Dabney S. Lancaster	188	54%	14%	74	30%	9	44%	105	56%
Danville	279	54%	5%	89	17%	—*	—*	141	51%
Eastern Shore	73	78%	10%	33	12%	—*	—*	24	33%
Germanna	755	65%	10%	399	24%	25	20%	353	47%
J. Sargeant Reynolds	978	59%	9%	360	21%	48	33%	489	50%
John Tyler	522	58%	11%	220	30%	18	28%	276	53%
Lord Fairfax	423	65%	11%	213	32%	23	17%	214	51%
Mountain Empire	128	76%	14%	66	21%	—*	—*	58	45%
New River	137	59%	9%	43	14%	—*	—*	78	57%
Northern Virginia	2,779	36%	11%	733	50%	108	53%	2,070	74%
Patrick Henry	111	76%	4%	48	21%	—*	—*	48	43%
Paul D. Camp	140	79%	6%	84	23%	—*	—*	48	34%
Piedmont Virginia	371	58%	9%	177	31%	13	54%	201	54%
Rappahannock	186	67%	10%	78	24%	—*	—*	83	45%
Southside Virginia	313	77%	7%	164	40%	7	43%	160	51%
Southwest Virginia	124	70%	7%	60	23%	—*	—*	62	50%
Thomas Nelson	544	65%	9%	259	31%	23	48%	255	47%
Tidewater	1,591	64%	9%	726	33%	53	45%	813	51%
Virginia Highlands	122	75%	11%	67	12%	—*	—*	56	46%
Virginia Western	544	60%	12%	195	47%	11	55%	292	54%
Wytheville	155	71%	8%	85	42%	—*	—*	78	50%
VCCS Total	11,117	57%	10%	4,468	32%	399	41%	6,248	56%

* If there are less than 5 students in cell, data are not reported to protect privacy.

Developmental Math Unit Guide

Based on their performance on the VPT-Math, students could be required to take any of the units in the table below.

Unit	Unit Name
Unit 0	Operations with Whole Numbers
Unit 1	Operations with Positive Fractions
Unit 2	Operations with Positive Decimals and Percents
Unit 3	Algebra Basics
Unit 4	First Degree Equations and Inequalities in One Variable
Unit 5	Linear Equations, Inequalities and Systems of Linear Equations in Two Variables
Unit 6	Exponents, Factoring and Polynomial Equations
Unit 7	Rational Expressions and Equations
Unit 8	Rational Exponents and Radicals
Unit 9	Functions, Quadratic Equations, and Parabolas

How Were Data Generated?

CRT class files were used to produce enrollment data. PS_STDNT_TEST_COMP and PS_STDNT_GRPS_HIST tables from Oracle database were used to generate placement and completion data.

Definitions for Placed and Completed

- Placed in units – those who did not pass placement test and subsequently did not pass some or all of required diagnostics.
- Completed units – those who satisfied developmental math requirements for all units by either passing diagnostics in placement test or completing developmental math modules.

Upcoming Research

Future snapshots will continue to track this first group of VPT-Math test takers to look at the following:

- Success in College-Level Math Courses (December 2013)
 - Initial Graduation and Transfer (June 2014)
- Visit <http://www.vccs.edu/studentssuccess> to learn more about student success.