

## **Santa Ana College Effectiveness of the Preliminary Math ReDesign**

**March 2015**

Understanding that math is the bottleneck of college success, faculty embarked on a redesign of the area of most concern to students at Santa Ana College, pre-transfer level curriculum. The elementary algebra (Math 060) and intermediate algebra (Math 080/081) were combined into one six-unit one-semester course. The course is designed into two paths: Math 083 is geared toward social science and liberal arts students and Math 084 is for students interested in business and STEM (science, technology, engineering and math) careers. The contents are the same; however, activities and applications are geared toward the areas of study so that students can easily relate.

In Fall 2014, the Math Department implemented the redesign program and table 1 displays the grade distribution for classes involved in the pre-transfer level curriculum. In reviewing course performance, students enrolled in the newly designed courses (Math 083 and 084) are not as successful (with success rate of 57% and 37% respectively) as the old model courses (Math 060, 080, and 081) of 49%, 53% and 62% respectively (table 1 on page 2).

However, in the old model students are required to complete two courses (Math 060 and 080 or Math 060 and 081) to be the equivalent of the one-course of either Math 083 or 084. Therefore, success should be measured by how many of those who enrolled in Math 060 and successfully completed Math 060 and 080 or Math 060 and 081. An analysis of those enrolled in Math 060 during Fall 2013 and Spring 2014, given two semesters to complete both Math 060 and 080 or Math 060 and 081 for success rates of 19% and 17% respectively (tables 2a, 2b on page 2). In looking further, one-third (34%) of the Fall 2010 Math 060 students completed the two-course sequence (Math 080/081) within four full semesters (fall and spring) and two summer sessions (table 3).

When students are required to take coursework over multiple semesters, it takes them longer to complete it, if at all. Less than 20% completed the two-course sequence within two full semesters and 34% completed that same two-course sequence within four full semesters; whereas, 45% of those enrolled in a single-semester algebra course completed Math 083/084.

The result of this study in itself is limited for many reasons: the redesign program had only one semester of implementation, a small number of sections offered, a variation of course performance due to the small number of instructors, etc. It is recommended that there be a well-rounded program assessment, faculty and staff to consider additional sources of information and that this analysis be conducted again after program implementation has had time for refinement.

Table 1  
**Santa Ana College**  
**Grade Distributions of Pre-Transfer Math Courses, Fall 2014**

Course	Successful					Non-Successful				W, I
	A	B	C	P	Total Success	D	F	NP	Total Non-Success	
Math 060 (n=786)	12%	16%	21%	0%	49%	10%	18%	0%	28%	23%
Math 080 (n=225)	12%	18%	23%	0%	53%	14%	13%	0%	27%	20%
Math 081 (n=688)	15%	20%	27%	0%	62%	9%	12%	0%	21%	17%
Math 083 (n=66)	5%	23%	24%	5%	57%	15%	12%	2%	29%	15%
Math 084 (n=101)	7%	10%	20%	0%	37%	14%	17%	0%	31%	33%

Table 2a  
**Santa Ana College**  
**Math 060 Students Tracked To Math 080/081 Within One Year, Fall 2013 Cohort**

Math 060		Tracked to Math 080		Tracked to Math 081		Total Success
Enrollment	Success	Enrollment	Success (grade A,B,C,P)	Enrollment	Success (grade A,B,C,P)	
Fall 2013 N=1015	467	72	48	239	148	19% (196/1015)

Table 2b  
**Santa Ana College**  
**Math 060 Students Tracked To Math 080/081 Within One Year, Spring 2014 Cohort**

Math 060		Tracked to Math 080		Tracked to Math 081		Total Success
Enrollment	Success	Enrollment	Success (grade A,B,C,P)	Enrollment	Success (grade A,B,C,P)	
Spring 2014 N=820	418	61	33	160	103	17% (136/820)

Table 3  
**Santa Ana College**  
**Math 060 Students Tracked To Math 080/081 Within Two Years, Fall 2010 Cohort**

Math 060		Tracked to Math 080/081		Total Success
Enrollment	Success	Enrollment	Success (grade A,B,C,P)	
Fall 2010 N=731	442	345	251	34% 215/731