Rancho Santiago Community College District

RESEARCH DEPARTMENT

Report

Santa Ana College
Core Competencies: Assessing Students Communication Skills in Math Coursework

August 2009

During the Spring 2009 semester, the Santa Ana College's Math Department assessed the general education Communication Skills core competency, specifically, reading and writing, as part of their SLO assessment cycle. As a department they hoped to demonstrate a positive change (over the period of one semester) in their students' abilities to read and write effectively and analytically and to comprehend at a college level. Students will write in an organized and grammatically correct fashion to explain their feelings and support a conclusion.

Students were assessed during the 3rd week of the semester and, identically, during the 13th week. Specific instructions, along with a scoring rubric, were provided to all instructors. Responses were scored on a 5-point Likert scale of 0-4, with 0 being a blank paper and 4 being correct answer stated in a complete sentence. Scoring of written responses was to be based upon both the correctness of the mathematics and the clarity of the presentation.

The question given to all math students was:

> *"A large inhabited island has a total land area of 20,000 square miles. Each person on the island requires an average of 2 square miles of "living space" for housing, food production, and other activities. The population doubles every 30 years. In the year 1990 the population of the island was 400 people." What will the population be in the year 2020? Estimate the year when there will be 6,000 people on the island.*

Forty-eight instructors assessed a total of 98 classes in all levels of the math sequence. 1,640 students completed both pre- and post- assessments and analysis was performed on these matches.

Findings:

- Overall, average gains were .38 (just over one-third point).
- Math 280 students expressed the highest gains (1.20 points, on average); however, there were only 15 students.
- Math N06 (n=103) and Math N47 (n=27) showed the next highest skills gains (.73 and .75, respectively).
- On average, the largest groups of students assessed (Math 060 and Math 080) showed only one-third point gain (.33 and .36, respectively).
- With the exception of Math 185, students in all sections, on average, showed skill gains to some extent.
- The largest proportion of students (35%) showed no change; the second largest group (28%), showed one point gain in skills.

Assessment of Math Coursework
for Reading and Writing Core Competencies at SAC
Spring 2009

Course	Gain/Loss from Pre- to Post-Assessment											Total	Average Change
	-4	-3	-2	-1	0	0.5	1	1.5	2	3	4		
N05	0	0	1	1	13	0	5	0	1	3	0	24	**0.54**
	0%	0%	4%	4%	54%	0%	21%	0%	4%	13%	0%	100%	
N06	0	0	1	10	32	0	37	0	20	2	1	103	**0.73**
	0%	0%	1%	10%	31%	0%	36%	0%	19%	2%	1%	100%	
N47	0	1	0	3	9	0	5	0	6	2	1	27	**0.78**
	0%	4%	0%	11%	33%	0%	19%	0%	22%	7%	4%	100%	
N48	0	0	8	25	77	0	49	0	20	5	2	186	**0.38**
	0%	0%	4%	13%	41%	0%	26%	0%	11%	3%	1%	100%	
60	0	4	19	59	109	0	108	0	44	9	1	353	**0.33**
	0%	1%	5%	17%	31%	0%	31%	0%	13%	3%	0%	100%	
80	1	2	11	49	101	2	84	1	33	9	2	295	**0.36**
	0%	1%	4%	17%	34%	1%	29%	0%	11%	3%	1%	100%	
105	0	1	1	11	25	0	18	0	10	3	0	69	**0.45**
	0%	1%	1%	16%	36%	0%	26%	0%	15%	4%	0%	100%	
140	0	0	10	24	49	0	27	0	15	4	0	129	**0.19**
	0%	0%	8%	19%	38%	0%	21%	0%	12%	3%	0%	100%	
150	1	1	3	3	34	0	23	0	4	2	1	72	**0.35**
	1%	1%	4%	4%	47%	0%	32%	0%	6%	3%	1%	100%	
160	0	0	2	9	37	0	18	0	12	4	0	82	**0.50**
	0%	0%	2%	11%	45%	0%	22%	0%	15%	5%	0%	100%	
170	0	0	2	11	17	0	20	0	11	2	0	63	**0.52**
	0%	0%	3%	18%	27%	0%	32%	0%	18%	3%	0%	100%	
180	1	3	2	13	21	0	18	0	12	3	0	73	**0.29**
	1%	4%	3%	18%	29%	0%	25%	0%	16%	4%	0%	100%	
185	0	1	3	6	4	0	2	0	1	0	2	19	**-0.16**
	0%	5%	16%	32%	21%	0%	11%	0%	5%	0%	11%	100%	
203	0	1	3	0	1	0	2	0	6	0	0	13	**0.39**
	0%	8%	23%	0%	8%	0%	15%	0%	46%	0%	0%	100%	
219	0	0	6	23	48	0	32	0	4	3	1	117	**0.15**
	0%	0%	5%	20%	41%	0%	27%	0%	3%	3%	1%	100%	
280	0	0	0	1	2	0	6	0	5	1	0	15	**1.20**
	0%	0%	0%	7%	13%	0%	40%	0%	33%	7%	0%	100%	
Total	**3**	**14**	**72**	**248**	**579**	**2**	**454**	**1**	**204**	**52**	**11**	**1640**	**0.38**
	0%	**1%**	**4%**	**15%**	**35%**	**0%**	**28%**	**0%**	**12%**	**3%**	**1%**	**100%**	