

ACT CAAP Writing Test Results California State University, Fresno

By Xia Liu, Research Analyst, IRAP

In spring 2006, faculty teaching sections of upper division writing courses were encouraged to make one class meeting available in which to give their students ACT's Collegiate Assessment of Academic Proficiency (CAAP) Writing Test. In April, the University Testing Office coordinated the distribution and collection of examinations with faculty. Of the 1,917 students from 75 writing class sections 1,047 took the exam. After excluding missing student ID entries, there are a total of 951 entries with valid test scores and ID.

Institutional Sample and national sample

Approximately 30% of the sample identified themselves as Caucasian, 75% as having English as their first language, and 73% were 25 years of age or less. Nearly 50% of the sample identified themselves as seniors, 41% as juniors and 5% as sophomores. National student sample are mainly from north central (72%) and southern (20%) regions. Among the national student sample with self-reported racial information, 74% Caucasian, 11% Black, 2% Asian/Pacific Islander, 3% Mexican-American. There is 73% sophomore in the national student sample. There is no information available regarding the age and whether English is their first language for national student sample. Therefore, our institutional sample cannot be compared to the national sample.

Overall Performance

The CAAP Test reports a scaled maximum score of 80 for the writing score and 25 for the Usage/Mechanics score and the Rhetoric score.

Table 1. Descriptive statistics for ACT writing test scores for Fresno State students

	N	Mean	Min	Max	Std. Deviation
Writing Score	951	60.4	47	73	5.2
Mechanics Score	951	15.3	9	21	2.6
Rhetoric Score	951	15.3	9	21	2.7

Gender

Table 2 shows group statistics for test scores by gender. According to the T-Test significance levels in the table, gender differences were not significant in the results of any of the three testing scores. Males comprised approximately 41% of our campus sample taking the test. University figures report approximately 41% of our campus student body is male, so our sample tested for writing is representative of the gender distribution University-wide.

Table 2. ACT writing scores by gender

	sex	N	Mean	Std. Deviation	Mean Difference	Sig.
Writing Score	Male	388	60.7	5.2	0.3	0.298
	Female	555	60.3	5.1		
Mechanics Score	Male	388	15.4	2.6	0.1	0.605
	Female	555	15.3	2.5		
Rhetoric Score	Male	388	15.4	2.7	0.2	0.182
	Female	555	15.2	2.7		

Ethnicity

Group statistics by ethnicity are shown in Table 3. ANOVA is used to test the difference in scores between ethnic groups: White, Asian, Hispanic, Chicano, African American, Southeast Asian and other (all other ethnic groups). Results show that white students do better on the writing skills test than students in any other identifiable ethnic groups.

Table 3a. ACT writing scores by ethnicity

		N	Mean	Std. Deviation	95% Confidence Interval for Mean		Min	Max
					Lower Bound	Upper Bound		
Writing Score	No response	54	59.6	4.8	58.3	60.9	48	72
	Asian	70	58.5	4.5	57.4	59.5	51	69
	Black	44	58.6	4.5	57.2	59.9	50	67
	Hispanic	71	58.7	4.8	57.6	59.8	47	70
	Chicano	214	59.1	4.6	58.5	59.7	49	70
	White	288	63.2	4.7	62.7	63.8	52	72
	Other	100	60.2	4.9	59.2	61.2	48	71

	Prefer not to respond	53	61.9	5.4	60.4	63.4	49	73
	Southeast Asian	57	57.2	4.9	55.9	58.6	49	71
	Total	951	60.4	5.1	60.1	60.8	47	73
Mechanics Score	No response	54	14.9	2.4	14.2	15.5	9	20
	Asian	70	14.6	2.2	14.0	15.1	10	20
	Black	44	14.4	2.4	13.7	15.2	9	19
	Hispanic	71	14.4	2.4	13.8	15.0	9	20
	Chicano	214	14.7	2.4	14.4	15.0	10	20
	White	288	16.6	2.3	16.3	16.9	11	21
	Other	100	15.2	2.6	14.7	15.7	9	21
	Prefer not to respond	53	15.9	2.7	15.2	16.7	11	21
	Southeast Asian	57	13.9	2.7	13.2	14.6	9	20
	Total	951	15.3	2.6	15.2	15.5	9	21
Rhetoric Score	No response	54	14.8	2.6	14.1	15.5	9	21
	Asian	70	14.1	2.5	13.5	14.7	10	19
	Black	44	14.3	2.3	13.7	15.0	10	19
	Hispanic	71	14.5	2.5	13.9	15.1	9	21
	Chicano	214	14.6	2.4	14.3	15.0	10	20
	White	288	16.7	2.5	16.4	17.0	10	21
	Other	100	15.2	2.6	14.7	15.7	10	21
	Prefer not to respond	53	16.0	2.8	15.3	16.8	10	21
	Southeast Asian	57	13.7	2.3	13.1	14.3	10	21
	Total	951	15.3	2.7	15.1	15.5	9	21

Table 3b. ANOVA model statistics

		Sum of Squares	df	Mean Square	F	Sig.
Writing Score	Between Groups	3,976.151	8	497.019	22.113	0.000
	Within Groups	21,172.476	942	22.476		
	Total	25,148.627	950			
Mechanics Score	Between Groups	847.562	8	105.945	18.318	0.000
	Within Groups	5,448.169	942	5.784		
	Total	6,295.731	950			
Rhetoric Score	Between Groups	1,029.063	8	128.633	20.772	0.000
	Within Groups	5,833.568	942	6.193		
	Total	6,862.631	950			

English as first language

The T-test results in Table 4 show that students whose first language is English performed significantly better than students whose first language is not English (significance level is less than 0.00001).

Table 4. ACT writing scores by English as first language

	English	N	Mean	Std. Deviation	Mean Difference	Sig.
Writing Score	First language	716	61.6	4.9	4.6	0.000
	Not first language	224	57.0	4.2		
Mechanics Score	First language	716	15.8	2.5	2.0	0.000
	Not first language	224	13.8	2.2		
Rhetoric Score	First language	716	15.9	2.6	2.4	0.000
	Not first language	224	13.5	2.2		

Student level

Of the students who completed the test, 91% are Junior or Senior students. To test whether there is a difference between Junior, Senior and other student levels, ANOVA is used in the study. The results show that there is no significant difference on ACT writing test scores by student level (significant level at $p > 0.29$).

Table 5a. ACT writing scores by student level

		N	Mean	Std. Deviation	95% Confidence Interval for Mean		Min	Max
					Lower Bound	Upper Bound		
Writing Score	Other	82	59.6	6	58.3	61	48	72
	Junior	387	60.6	4.9	60.1	61.1	49	72
	Senior	482	60.4	5.2	60	60.9	47	73
	Total	951	60.4	5.1	60.1	60.8	47	73
Mechanics Score	Other	82	15	3	14.3	15.6	9	21
	Junior	387	15.4	2.4	15.2	15.7	10	21
	Senior	482	15.3	2.6	15.1	15.5	9	21
	Total	951	15.3	2.6	15.2	15.5	9	21
Rhetoric Score	Other	82	14.9	3.1	14.2	15.5	9	21
	Junior	387	15.4	2.6	15.1	15.6	10	21
	Senior	482	15.3	2.7	15.1	15.5	9	21

	Total	951	15.3	2.7	15.1	15.5	9	21
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Table 5b. ANOVA model statistics

		Sum of Squares	df	Mean Square	F	Sig.
Writing Score	Between Groups	65.447	2	32.723	1.237	.291
	Within Groups	25083.180	948	26.459		
	Total	25148.627	950			
Mechanics Score	Between Groups	14.264	2	7.132	1.076	.341
	Within Groups	6281.466	948	6.626		
	Total	6295.731	950			
Rhetoric Score	Between Groups	16.773	2	8.387	1.161	.314
	Within Groups	6845.858	948	7.221		
	Total	6862.631	950			

Table 5c. Pairwise comparison on student level

Dependent Variable	(I) Education Level	(J) Education Level	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Writing Score	Other	Junior	-1.0	0.6	0.3	-2.5	0.5
		Senior	-0.8	0.6	0.6	-2.3	0.7
	Junior	Other	1.0	0.6	0.3	-0.5	2.5
		Senior	0.2	0.4	1.0	-0.7	1.0
	Senior	Other	0.8	0.6	0.6	-0.7	2.3
		Junior	-0.2	0.4	1.0	-1.0	0.7
Mechanics Score	Other	Junior	-0.5	0.3	0.4	-1.2	0.3
		Senior	-0.4	0.3	0.8	-1.1	0.4
	Junior	Other	0.5	0.3	0.4	-0.3	1.2
		Senior	0.1	0.2	1.0	-0.3	0.5
	Senior	Other	0.4	0.3	0.8	-0.4	1.1
		Junior	-0.1	0.2	1.0	-0.5	0.3
Rhetoric Score	Other	Junior	-0.5	0.3	0.4	-1.3	0.3
		Senior	-0.4	0.3	0.5	-1.2	0.3
	Junior	Other	0.5	0.3	0.4	-0.3	1.3
		Senior	0.1	0.2	1.0	-0.4	0.5
	Senior	Other	0.4	0.3	0.5	-0.3	1.2
		Junior	-0.1	0.2	1.0	-0.5	0.4

Freshman or transfer

The T-test results in Table 6 show that there is no difference between students that enrolled as freshman or as transfers on their writing scores (significance level > 0.7).

Table 6. ACT writing scores by entering student type

	Freshman enrollment	N	Mean	Std. Deviation	Mean Difference	Sig.
Writing Score	Freshman	403	60.5	5.2	-0.1	0.876
	Not freshman	547	60.6	5.1		
Mechanics Score	Freshman	403	15.4	2.6	0.0	0.984
	Not freshman	547	15.4	2.5		
Rhetoric Score	Freshman	403	15.3	2.7	0.0	0.784
	Not freshman	547	15.4	2.7		

Cumulative GPA

Students with a higher cumulative GPA perform better on the writing tests than students with a lower cumulative GPA. Students with a cumulative GPA above 3.50, performed better on the writing tests than any other students. Students with a cumulative GPA at the range of 3.01~3.50, did better than students with lower than 3.00 cumulative GPA. There is no significant difference between students whose cumulative GPA is at 2.51~3.00 and students whose GPA is below 2.50.

Table 7a ACT writing scores by student cumulative GPA

		N	Mean	Std. Deviation	95% Confidence Interval for Mean		Min	Max
					Lower Bound	Upper Bound		
Writing Score	below 2.50	202	58.822	4.660	58.175	59.468	48	72
	2.51-3.00	347	59.775	4.861	59.262	60.288	47	72
	3.01-3.50	300	61.020	5.169	60.433	61.607	48	73
	3.51 or above	102	64.225	4.848	63.273	65.178	51	72
	Total	951	60.443	5.145	60.115	60.770	47	73
Mechanics Score	below 2.50	202	14.495	2.363	14.167	14.823	9	21
	2.51-3.00	347	14.965	2.472	14.704	15.226	9	21
	3.01-3.50	300	15.707	2.584	15.413	16.000	9	21
	3.51 or above	102	16.990	2.340	16.531	17.450	11	21
	Total	951	15.317	2.574	15.153	15.480	9	21
Rhetoric Score	below 2.50	202	14.540	2.474	14.196	14.883	9	21
	2.51-3.00	347	14.974	2.546	14.705	15.243	9	21
	3.01-3.50	300	15.463	2.699	15.157	15.770	10	21
	3.51 or	102	17.314	2.509	16.821	17.807	10	21

	above							
	Total	951	15.287	2.688	15.116	15.458	9	21

Table 7b. ANOVA model statistics

		Sum of Squares	df	Mean Square	F	Sig.
Writing Score	Between Groups	2244.882	3	748.294	30.940	.000
	Within Groups	22903.745	947	24.186		
	Total	25148.627	950			
Mechanics Score	Between Groups	510.474	3	170.158	27.853	.000
	Within Groups	5785.257	947	6.109		
	Total	6295.731	950			
Rhetoric Score	Between Groups	575.124	3	191.708	28.874	.000
	Within Groups	6287.507	947	6.639		
	Total	6862.631	950			

Table 7c. Pairwise comparison on cumulative GPA

Dependent Variable	(I) CumGPA	(J) CumGPA	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Writing Score	below 2.50	2.51-3.00	-0.953	0.435	0.172	-2.104	0.197
		3.01-3.50	-2.198(*)	0.448	0.000	-3.382	-1.015
		3.51 or above	-5.404(*)	0.597	0.000	-6.983	-3.824
	2.51-3.00	below 2.50	0.953	0.435	0.172	-0.197	2.104
		3.01-3.50	-1.245(*)	0.388	0.008	-2.270	-0.220
		3.51 or above	-4.450(*)	0.554	0.000	-5.915	-2.986
	3.01-3.50	below 2.50	2.198(*)	0.448	0.000	1.015	3.382
		2.51-3.00	1.245(*)	0.388	0.008	0.220	2.270
		3.51 or above	-3.205(*)	0.564	0.000	-4.696	-1.715
	3.51 or above	below 2.50	5.404(*)	0.597	0.000	3.824	6.983
		2.51-3.00	4.450(*)	0.554	0.000	2.986	5.915
		3.01-3.50	3.205(*)	0.564	0.000	1.715	4.696
Mechanics Score	below 2.50	2.51-3.00	-0.470	0.219	0.191	-1.049	0.108
		3.01-3.50	-1.21162(*)	0.225	0.000	-1.806	-0.617
		3.51 or above	-2.49515(*)	0.300	0.000	-3.289	-1.701
	2.51-3.00	below 2.50	0.470	0.219	0.191	-0.108	1.049
		3.01-3.50	-.74125(*)	0.195	0.001	-1.256	-0.226
		3.51 or above	-2.02478(*)	0.278	0.000	-2.761	-1.289
	3.01-3.50	below 2.50	1.21162(*)	0.225	0.000	0.617	1.806
		2.51-3.00	.74125(*)	0.195	0.001	0.226	1.256

		3.51 or above	-1.28353(*)	0.283	0.000	-2.033	-0.535
	3.51 or above	below 2.50	2.49515(*)	0.300	0.000	1.701	3.289
		2.51-3.00	2.02478(*)	0.278	0.000	1.289	2.761
		3.01-3.50	1.28353(*)	0.283	0.000	0.535	2.033
Rhetoric Score	below 2.50	2.51-3.00	-0.434	0.228	0.342	-1.037	0.168
		3.01-3.50	-.92373(*)	0.235	0.001	-1.544	-0.304
		3.51 or above	-2.77412(*)	0.313	0.000	-3.602	-1.947
	2.51-3.00	below 2.50	0.434	0.228	0.342	-0.168	1.037
		3.01-3.50	-0.489	0.203	0.097	-1.026	0.048
		3.51 or above	-2.33966(*)	0.290	0.000	-3.107	-1.572
	3.01-3.50	below 2.50	.92373(*)	0.235	0.001	0.304	1.544
		2.51-3.00	0.489	0.203	0.097	-0.048	1.026
		3.51 or above	-1.85039(*)	0.295	0.000	-2.631	-1.070
	3.51 or above	below 2.50	2.77412(*)	0.313	0.000	1.947	3.602
		2.51-3.00	2.33966(*)	0.290	0.000	1.572	3.107
		3.01-3.50	1.85039(*)	0.295	0.000	1.070	2.631

Full Time/Part Time

T-test results show that there is no difference in writing scores between students enrolled part-time and those enrolled full-time.

Table 8. ACT writing scores by Full/Part time enrollment status

	FPT	N	Mean	Std. Deviation	Mean Difference	Sig.
Writing Score	Full time	865	60.5	5.2	-0.1	0.903
	Part time	66	60.6	4.1		
Mechanics Score	Full time	865	15.3	2.6	0.0	0.899
	Part time	66	15.3	2.1		
Rhetoric Score	Full time	865	15.3	2.7	-0.1	0.780
	Part time	66	15.4	2.4		

Professional/Non-professional

T-tests show that differences in the Professional/ Non-Professional students on writing scores are not significant. Students with majors in agriculture, business, computer and information sciences, education, engineering, health science and industrial technology are

defined as professional students. Students with majors in the sciences, arts and humanities, mathematics, and social sciences are defined as non-professional students. According to the list of majors provided by test center, non-professional majors include: biological science, communication, general studies, fine and applied arts, foreign language, home economics, letters, mathematics, philosophy/religion and social science. The rest of majors are professional majors, they are: agriculture, architecture, business, office management, marketing and purchasing, community service, computer and information science, education, engineering, health professionals and trade & industrial.

Table 9. ACT writing scores by Professional/Non-professional

	ProfessionalMajor	N	Mean	Std. Deviation	Mean Difference	Sig.
Writing Score	non-professional	262	60.6	5.4	-0.1	0.766
	professional	580	60.5	5.0		
Mechanics Score	non-professional	262	15.4	2.7	-0.1	0.553
	professional	580	15.3	2.5		
Rhetoric Score	non-professional	262	15.4	2.8	-0.1	0.850
	professional	580	15.3	2.6		