

Executive Summary

Assessment of AP Participation and Academic Success at Texas A&M University

Prepared for the
Texas Center for Advanced Placement (AP) / International Baccalaureate (IB) Initiatives,
A Cooperative Partnership of the
Texas Education Agency and the Texas A&M University System

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Executive Summary

The purpose of this study was to assess Advanced Placement participation and academic success of students at Texas A&M University. The establishment of benchmark data regarding AP students in terms of selected characteristics and performance scores and the relationships and differences of these attributes to academic success at Texas A&M University was the focus of this research.

Specifically, three areas of inquiry were examined:

1. The extent of AP participation for Texas A&M University freshmen.
2. The extent of significant differences in characteristics and performance scores for students within the AP participation group.
3. The extent of significant differences in characteristics and performance scores for students who differed in terms of AP participation (AP vs. Non-AP).

Data for this study was obtained from the Student Information Management System of Texas A&M University for the school year 2001-2002. The population for this study was comprised of 6513 Texas A&M University freshmen. The obtained data was fractionated based on Advanced Placement course credit and resulted in two groups consisting of 3088 students who received some form of AP course credit and 3425 students who did not receive course credit by AP examinations. Only students with complete information in terms of fall and spring grade point ratios and full-time course loads of 12 or more class credits were utilized in this study. This resulted in a data set of 5896 participants. The AP group consisted of 2913 students while the Non-AP group contained 2983 students.

Eight performance scores were extracted from the obtained data set and utilized in the analyses. SAT, ACT, TASP, TASPW, TASP (high school performance indicators that the students possessed before coming to Texas A&M University) and FGPR, SPGPR, SSGPR (university indicators of first year academic performance at Texas A&M University) comprised the 8 performance variables. Students were classified by 5 characteristic variables - group, gender, ethnicity, class size and class rank.

Highlights

- **AP Participation**
Almost 50% of the freshmen for the Fall 2001-2002 had some form of AP credit.
- **AP Student Group**
*The most frequent form of AP credit was for English.
Within AP English, students earning an AP score of 5 did academically better than students scoring a 4 and the students with the latter score outperformed students scoring a 3.*

- **Relationships and Differences**

- Relationships

- Between Performance Variables

In the total sample, the degree of linear relationship for the performance variables was consistent. Measures of first year university academic success tended to group together and the indicators of high school academic ability tended to overlap with each other.

- Between Characteristic and Performance Variables

The relationships between the characteristic variables and performance factors ranged from near zero to almost high. The higher degrees of association were observed for the variable of Group.

- Differences

- Group

Based on the overall analyses conducted in this project, students at Texas A&M University who received AP credit academically outperformed Non-AP students. When AP and Non-AP students were classified in terms of SAT ability, the AP students still outperformed the Non-AP students.

- Gender

Males exhibited significantly different means from females in terms of SAT scores, however, females outperformed their male counterparts in terms of grade point ratios attained during their first year at Texas A&M University.

- Ethnicity

African American, American Indian and Hispanic students were underrepresented in this study. Their AP and high school performance scores were generally lower than the other ethnic categories.

- Class Size

Students from larger class size environments comprised a greater portion of the AP Group than students from medium and small class sizes. Students from larger class sizes generally outperformed the other students. The students from medium and small class sizes exhibited equivalent performance scores.

- Class Rank

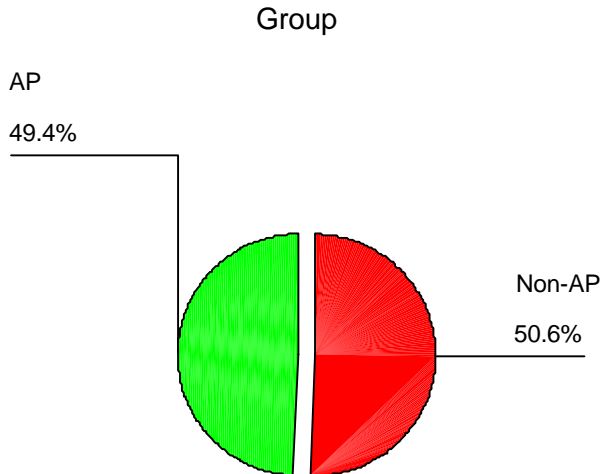
In terms of indicators of high school and first year academic ability at Texas A&M University, students possessing better high school class ranks outscored those with lower class rankings.

Results Summary

- **AP Participation**

Almost 50% of the freshmen for the Fall 2001-2002 had some form of AP credit.

Figure 1. Percentages in terms of Group



Participation in terms of Group and the other four characteristic variables are presented in Table 1.

Table 1.

Summary of Frequencies and Percents for the Characteristic Variables

(N = 5896)

Characteristic Variable	Level	Frequency	Percent
Group	AP	2913	49.4
	Non-AP	2983	50.6
Gender	Female	3084	52.3
	Male	2812	47.7
Ethnicity	African American	157	2.7
	Hispanic	611	10.4
	Native American	32	.5
	Asian/Pacific Islander	196	3.3
	White	4870	82.6
	Other	30	.5
Class Size	Small	1966	33.3
	Medium	1969	33.4
	Large	1961	33.3
Class Rank	1 st Quartile	1531	26.0
	2 nd Quartile	1428	24.2
	3 rd Quartile	1456	24.7
	4 th Quartile	1481	25.1

Table 2.
 Summary of Frequencies and Percents for Group by Characteristic Variables (N = 5896)

Characteristic Variable	Level	Frequency	Percent	
Gender	Female	AP Non-AP	1534 1550	52.3
	Male	AP Non-AP	1379 1443	47.4
Ethnicity	African American	AP Non-AP	58 99	2.7
	Hispanic	AP Non-AP	296 315	10.4
	Native American	AP Non-AP	16 16	.5
	Asian/Pacific Islander	AP Non-AP	112 84	3.3
	White	AP Non-AP	2413 2457	82.6
	Other	AP Non-AP	18 12	.5
Class Size	Small	AP Non-AP	817 1149	33.3
	Medium	AP Non-AP	1004 965	33.4
	Large	AP Non-AP	1092 869	33.3
Class Rank	1 st Quartile	AP Non-AP	819 712	26.0
	2 nd Quartile	AP Non-AP	726 702	24.2
	3 rd Quartile	AP Non-AP	714 742	24.7
	4 th Quartile	AP Non-AP	654 827	25.1

- **AP Student Group**

The most frequent form of AP credit was for English. The frequencies for English and the other subject matter areas are given in Table 3.

Table 3.
Frequencies for Extent of AP Course Credit

	Frequencies	Percent
English		
AP English Credit	1470	50.46
No AP English Credit	1443	49.54
Mathematics		
AP Math Credit	408	14.01
No AP Math Credit	2505	85.99
Foreign Language		
AP Fling Credit	199	6.83
No AP Fling Credit	2714	93.17
Chemistry		
AP Chem Credit	157	5.39
No AP Chem Credit	2756	94.61
Physics		
AP Phys Credit	144	4.94
No AP Phys Credit	2769	95.06
Biology		
AP Biol Credit	136	4.67
No AP Biol Credit	2777	95.33
Other AP Credit	399	13.70

Within AP English, students earning an AP score of 5 did academically better than students scoring a 4 and the students with the latter score outperformed students scoring a 3. The frequencies and percents for AP English scores are presented in Table 4 and the university performances associated with the AP scores are given in Table 5.

Table 4. Summary of AP Scores in terms of English

AP Score	Frequency	Percent
3	759	51.6
4	535	36.4
5	176	12.0

Table 5. Means for AP English Categories for FGPR, SPGPR & SSGPR

AP English Category	FGPR	SPGPR	SSGPR
3	3.03	3.03	3.25
4	3.25	3.23	3.38
5	3.46	3.41	3.62

There were significant differences in the means for FGPR and SPGPR presented in Table 5.

- **Relationships and Differences**

Relationships

Between Performance Variables

In the total sample, the degree of linear relationship for the performance variables was consistent. Measures of first year university academic success tended to group together and the indicators of high school academic ability tended to overlap with each other.

Table 6.
Total Group Correlation* Matrix

	FGPR	SPGPR	SSGPR	SAT	ACT	TASPR	TASPW	TASPM
FGPR	1.000	.526	.305	.060	.002	.046	-.088	.081
SPGPR		1.000	.741	.273	.292	.129	-.039	.319
SSGPR			1.000	.364	.527	.344	.176	.496
SAT				1.000	.654	.554	.470	.508
ACT					1.000	.524	.276	.543
TASPR						1.000	.422	.636
TASPW							1.000	.285
TASPM								1.000

* The closer to 1.00 the higher degree of relationship between two variables.

Between Characteristic and Performance Variables

The relationships between the characteristic variables and performance variables ranged from near zero to high. The higher degrees of association were observed for the variable of Group.

Differences

The means for all of the performance variables in terms of Group and Group by Characteristic Variables are summarized in Table 7.

Table 7. Means for SAT, ACT, TASPR***, TASPW, TASPM, FGPR, SPGPR, & SSGPR*** for 2001-02 Freshmen at Texas A&M University

Characteristic Variable	TAMU		Texas (1999-00)*		TAMU					
	SAT	ACT	SAT	ACT	TASPR	TASPW	TASPM	FGPR	SGPR	SSGPR
All (n=5896)	1166.92	24.89	990	20.3	258.02	240.80	257.93	2.83	2.84	3.06
Group										
AP (n= 2913)	1218.20	26.21			260.31	241.98	260.01	2.99	2.99	3.25
Non-AP (n= 2983)	1114.49	23.71			257.16	240.36	257.16	2.66	2.69	2.88
Gender										
Female (n=3084)	1140.92	24.75	973	20.3	257.24	242.55	255.86	2.85	2.90	3.11
AP	1190.46	26.08			257.87	243.49	254.75	3.02	3.05	3.29
Non-AP	1086.29	23.50			257.00	242.19	256.27	2.68	2.75	2.93
Male (n= 2812)	1195.35	25.06	1010	20.2	258.93	238.71	260.44	2.80	2.77	3.00
AP	1249.13	26.38			263.26	240.12	266.43	2.95	2.91	3.19
Non-AP	1141.49	23.95			257.34	238.20	258.23	2.64	2.63	2.84
Ethnicity										
African American (n=157)	1057.36	21.39	849	17.2	253.40	234.63	243.39	2.56	2.57	2.29
AP	1132.41	23.34			268.09	240.00	258.64	2.71	2.83	2.49
Non-AP	1010.23	20.15			249.73	233.26	239.74	2.45	2.42	2.22
Hispanic (n=611)	1099.60	22.75	900**	18.0**	255.20	236.29	254.63	2.58	2.69	3.07
AP	1136.37	23.49			254.02	239.09	251.45	2.67	2.75	3.13
Non-AP	1065.87	22.10			255.93	234.58	256.59	2.50	2.64	3.02
Native American (n=32)	1186.00	24.90	985	20.1	266.33	240.00	244.67	2.90	2.74	3.17
AP	1251.88	27.33			-	-	-	3.03	2.82	-
Non-AP	1110.71	22.91			266.33	240.00	244.67	2.77	2.65	3.17
Asian /Pacific Islander (n=196)	1177.85	25.19	1066	21.8	248.37	230.00	274.30	2.91	2.81	3.06
AP	1229.00	26.56			249.00	231.11	274.00	3.12	3.05	3.18
Non-AP	1108.40	23.43			248.06	229.44	274.44	2.62	2.50	2.82
White (n=4870)	1177.78	25.25	1048	21.7	259.67	243.24	259.72	2.86	2.86	3.12
AP	1228.56	26.60			262.64	243.91	262.07	3.03	3.02	3.29
Non-AP	1125.14	24.06			258.66	243.01	258.92	2.69	2.71	2.96
Other (n=30)	1286.15	25.77			253.00	220.00	224.67	3.00	2.86	3.25
AP	1343.13	28.13			-	-	-	3.23	2.99	3.80
Non-AP	1195.00	22.00			253.00	220.00	224.67	2.64	2.68	2.14

(Table 7. continued)

Characteristic Variable	TAMU		Texas (1999-00)*		TAMU					
	SAT	ACT	SAT	ACT	TASPR	TASPW	TASPM	FGPR	SGPR	SSGPR
Class Size										
Small (n=1966)	1146.84	24.58			257.01	240.81	255.54	2.77	2.80	3.02
AP	1202.22	25.83			260.63	243.62	261.53	2.96	2.95	3.20
Non-AP	1104.14	23.72			255.97	240.01	253.84	2.64	2.69	2.88
Medium (n=1969)	1152.75	24.51			259.01	240.63	257.30	2.77	2.78	3.07
AP	1201.27	25.79			259.22	241.11	255.35	2.91	2.92	3.22
Non-AP	1101.33	23.26			258.91	240.39	258.24	2.62	2.63	2.92
Large (n=1961)	1198.59	25.71			257.96	241.07	262.66	2.93	2.94	3.09
AP	1244.45	27.03			262.16	241.59	267.24	3.09	3.07	3.33
Non-AP	1140.42	24.21			256.51	240.88	261.03	2.74	2.76	2.85
Class Rank										
1 st Quartile (n=1531)	1203.95	25.89			261.45	243.67	259.54	3.06	3.09	3.30
AP	1255.03	27.04			261.71	243.55	263.29	3.25	3.25	3.47
Non-AP	1140.05	24.66			261.35	243.71	258.29	2.85	2.90	3.09
2 nd Quartile (n=1428)	1146.08	24.49			256.10	240.08	254.61	2.82	2.83	3.08
AP	1202.35	25.88			257.08	239.81	253.29	2.99	2.97	3.18
Non-AP	1083.89	23.13			255.68	240.20	255.17	2.65	2.68	2.97
3 rd Quartile (n=1456)	1147.00	24.34			257.12	240.34	259.32	2.75	2.78	2.91
AP	1193.01	25.57			259.58	241.41	260.74	2.89	2.89	3.09
Non-AP	1101.12	23.36			256.04	239.86	258.70	2.62	2.67	2.79
4 th Quartile (n=1481)	1169.19	24.57			258.64	240.15	258.33	2.65	2.64	2.87
AP	1217.91	25.98			264.22	244.22	264.47	2.77	2.77	3.10
Non-AP	1129.99	23.56			257.05	238.97	256.57	2.55	2.54	2.71
Meeting Criterion										
% = 1110	65.6%		28.0%							
% = 24		62.5%		24.0%						

*Results of College Admissions Testing in Texas for 1999-2000 Graduating Seniors

**Mexican American and other Hispanic

*** TASP and SSGPR data are based on smaller sample sizes because of exemptions or non-participation.

Group

Based on the overall analyses conducted in this project, students at Texas A&M University who received AP credit academically outperformed students in the Non-AP Group.

Table 8.

Group Means for High School and University Performance Variables for 2001-02 Freshmen at Texas A&M University

Group	SAT	ACT	TASPR	TASPW	TASPM	FGPR	SPGPR	SSGPR
AP (n= 2913)	1218.20	26.21	260.31	241.98	260.01	2.99	2.99	3.25
Non-AP (n= 2983)	1114.49	23.71	257.16	240.36	257.16	2.66	2.69	2.88

Figure 2. Means for SAT and ACT for Group

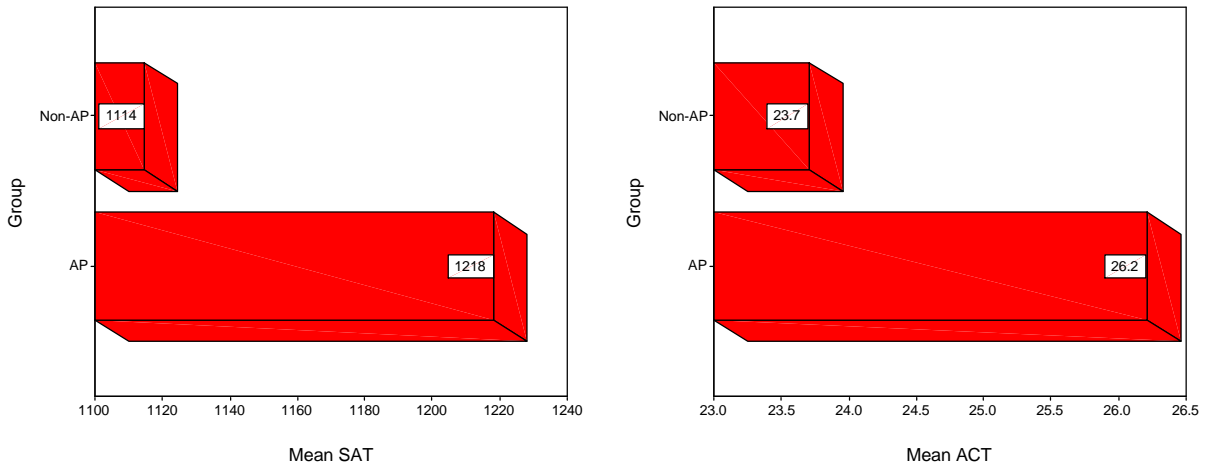


Figure 3. Means for FGPR and SPGPR for Group

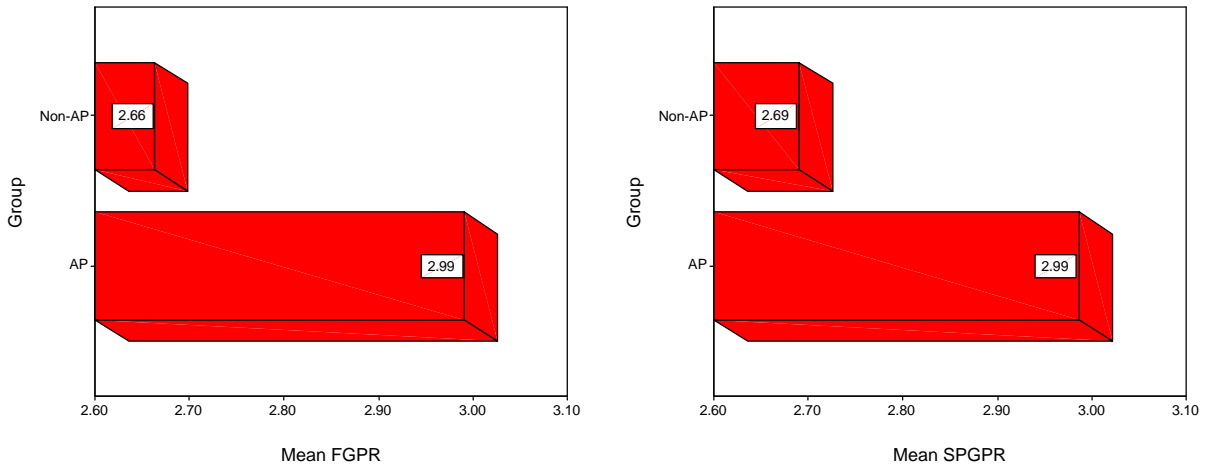
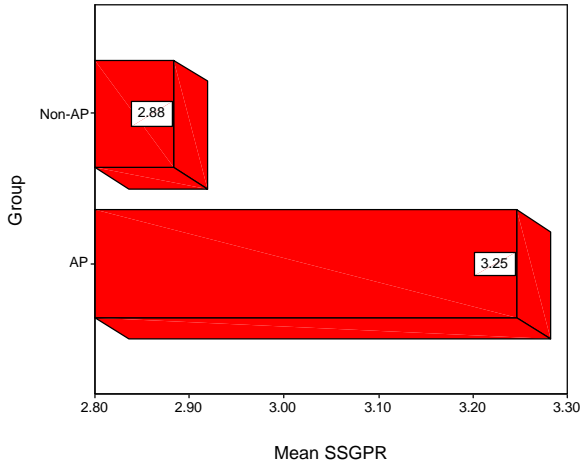


Figure 4. Means for SSGPR for Group



When AP and Non-AP students were classified in terms of SAT ability, the AP students still outperformed the Non-AP students.

AP and Non-AP students were categorized into two groups, those meeting and exceeding a benchmark score of 1110 and those scoring below the benchmark score of 1110. The means for the SAT Categories are given in Table 9 and presented graphically in Figures 5-8.

Table 9. Means for Group by SAT Categories

Performance Score	Group	SAT Category	
		Below benchmark	Met benchmark
FGPR	AP	2.62 (n=721)	3.11 (n=2192)
	Non-AP	2.53 (n= 1598)	2.81 (n=1385)
SPGPR	AP	2.70 (n=721)	3.08 (n=2192)
	Non-AP	2.59 (n=1598)	2.81 (n=1385)
SSGPR	AP	3.08 (n=83)	3.30 (n=246)
	Non-AP	2.78 (n=199)	3.01 (n=164)

Figure 5. Means for FGPR and SPGPR for Group by SAT Categories

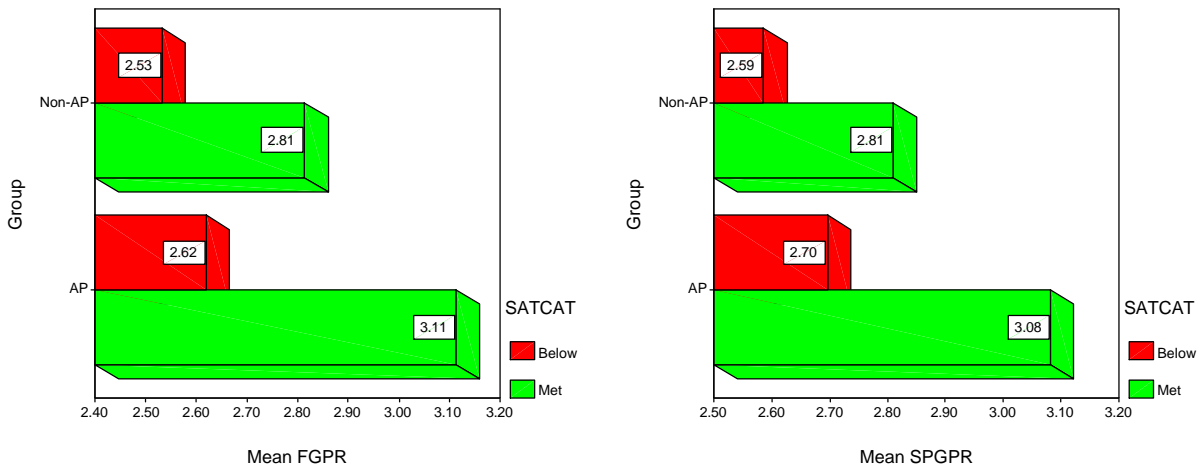


Figure 6. Means for SSGPR for Group by SAT Categories

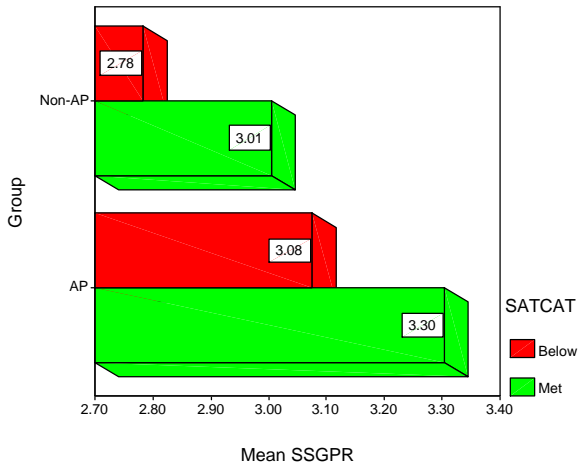


Figure 7 indicates that for those students who met the SAT benchmark, AP students outperformed No AP students. Within those students who did not meet the benchmark (Figure 8) AP students also outperformed No AP students.

Figure 7. Means for FGPR and SPGPR for Group at Met Benchmark

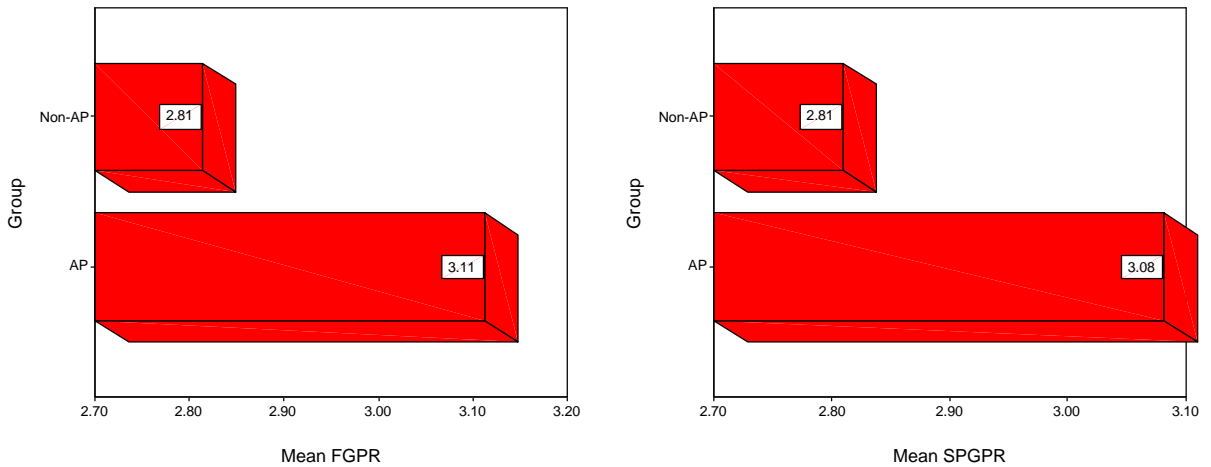
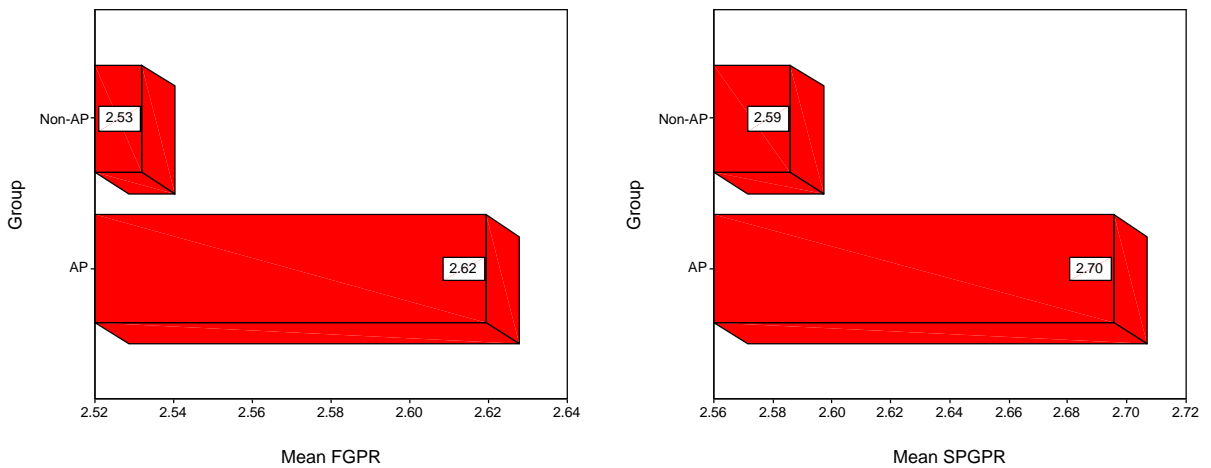


Figure 8. Means for FGPR and SPGPR for Group at Below Benchmark



Gender

Males exhibited significantly different means from females in terms of SAT scores, however, females outperformed their male counterparts in terms of grade point ratios attained during their first year at Texas A&M University.

Table 10.

Gender Means for High School and University Performance Variables for 2001-02 Freshmen at Texas A&M University

Gender	SAT	ACT	TASPR	TASPW	TASPM	FGPR	SPGPR	SSGPR
Female (n= 3084)	1140.92	24.75	257.24	242.55	255.86	2.85	2.90	3.11
Male (n= 2812)	1195.35	25.06	258.93	238.71	260.44	2.80	2.77	3.00

Figure 9. Means for SAT and TASPW for Gender

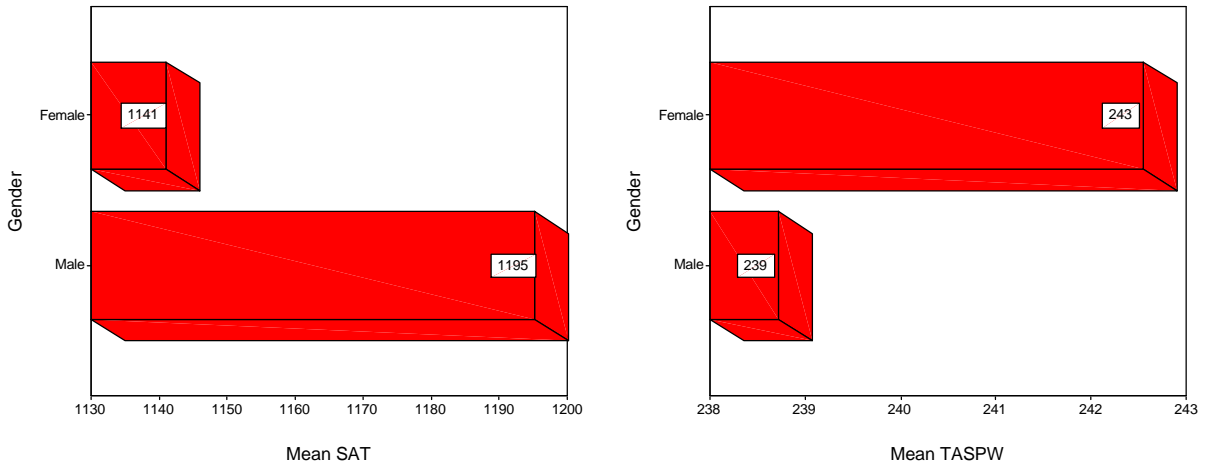
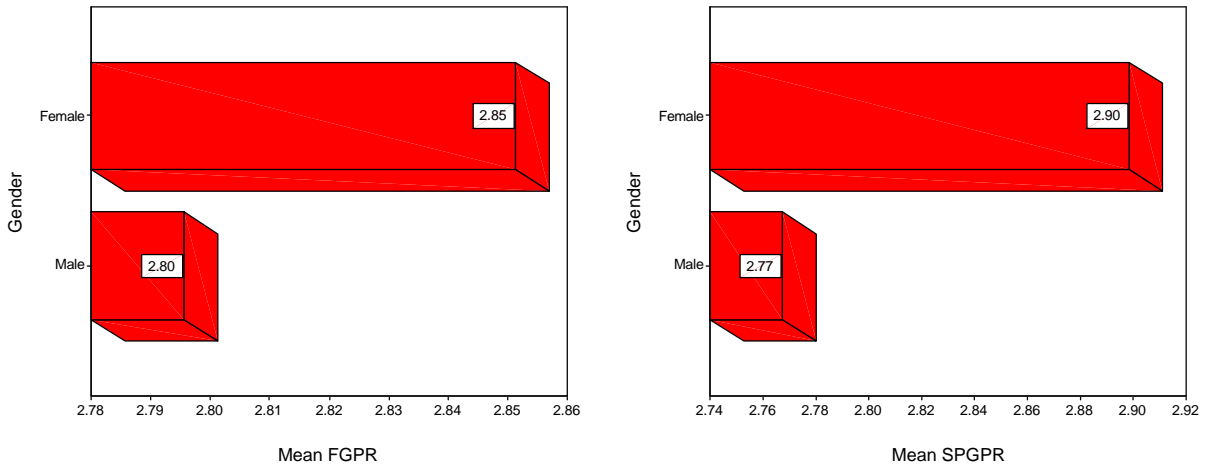


Figure 10. Means for FGPR and SPGPR for Gender



Ethnicity

African American, American Indian and Hispanic students were underrepresented in this study. Their performance scores were generally lower than the other ethnic categories.

Table 11.
Ethnicity Means for High School and University Performance Variables for 2001-02
Freshmen at Texas A&M University

Ethnicity	SAT	ACT	TASPR	TASPW	TASPM	FGPR	SPGPR	SSGPR
African American (n=157)	1057.36	21.39	253.40	234.63	243.39	2.55	2.57	2.29
Hispanic (n=611)	1099.60	22.75	255.20	236.29	254.63	2.58	2.69	3.07
Native American (n=32)	1186.00	24.90	266.33	240.00	244.67	2.90	2.74	3.17
Asian/Pacific Islander (n=196)	1177.85	25.19	248.37	230.00	274.30	2.91	2.81	3.06
White (n=4870)	1177.78	25.25	259.67	243.24	259.72	2.86	2.86	3.12
Other (n=30)	1286.15	25.77	253.00	220.00	224.67	3.00	2.86	3.25

Figure 11. Means for SAT and ACT for Ethnicity

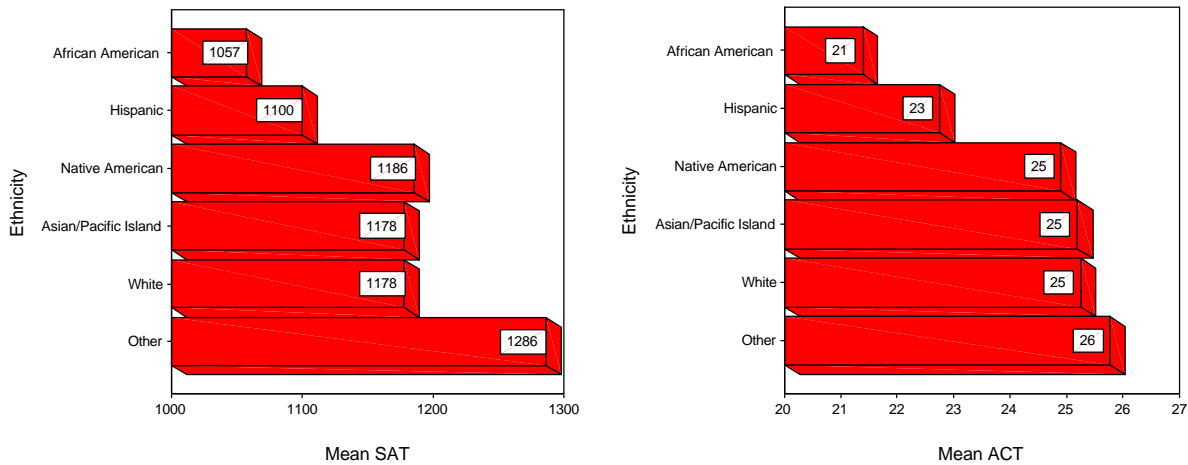


Figure 12. Means for TASP and TASPW for Ethnicity

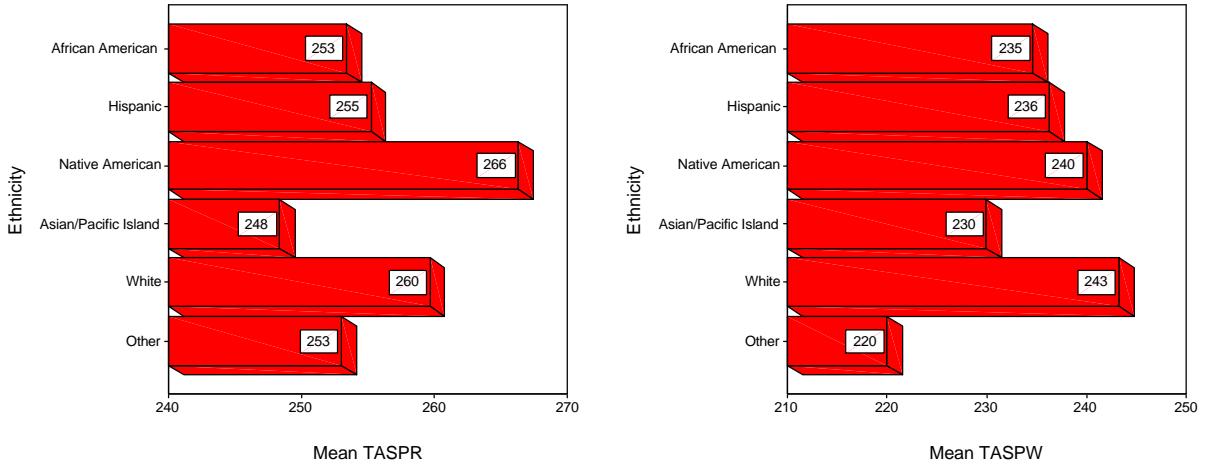


Figure 13. Means for TASP and FGPR for Ethnicity

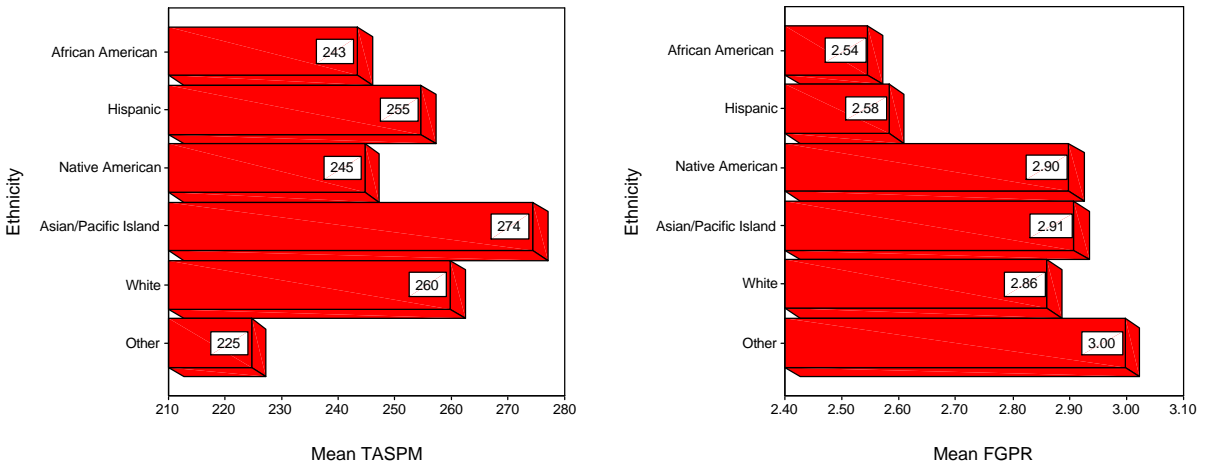
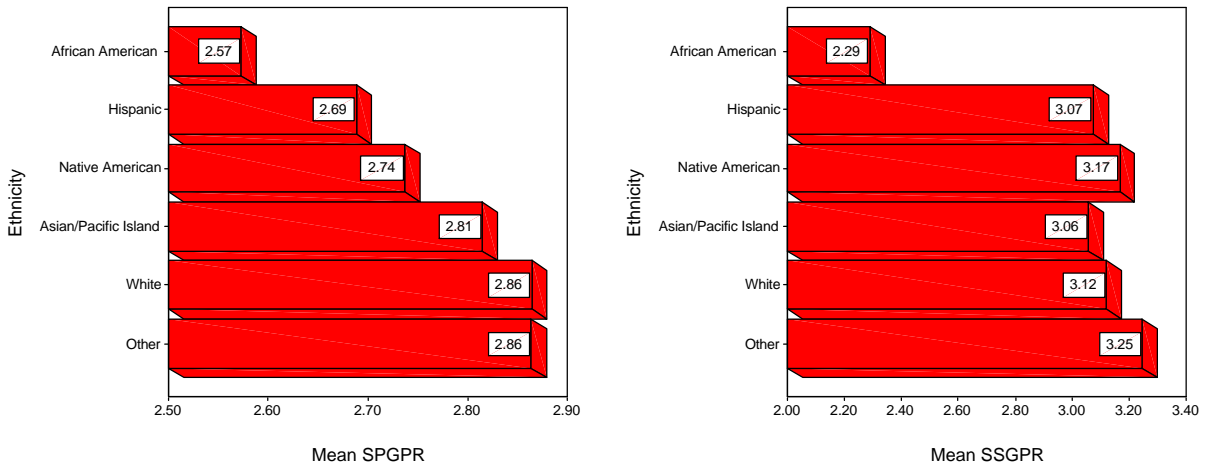


Figure 14. Means for SPGPR and SSGPR for Ethnicity



Class Size

Students from larger class size environments comprised a greater portion of the AP Group than students from medium and small class sizes. Students from larger class sizes generally outperformed the other students. The students from medium and small class sizes exhibited equivalent performance scores.

Table 12.

Class Size Means for High School and University Performance Variables for 2001-02 Freshmen at Texas A&M University

Class Size	SAT	ACT	TASPR	TASPW	TASPM	FGPR	SPGPR	SSGPR
Small (n=1966)	1146.84	24.58	257.01	240.81	255.54	2.77	2.80	3.02
Medium (n=1969)	1152.75	24.51	259.01	240.63	257.30	2.77	2.78	3.07
Large (n=1961)	1198.59	25.71	257.96	241.07	262.66	2.93	2.94	3.09

Figure 15. Means for SAT and ACT for Class Size

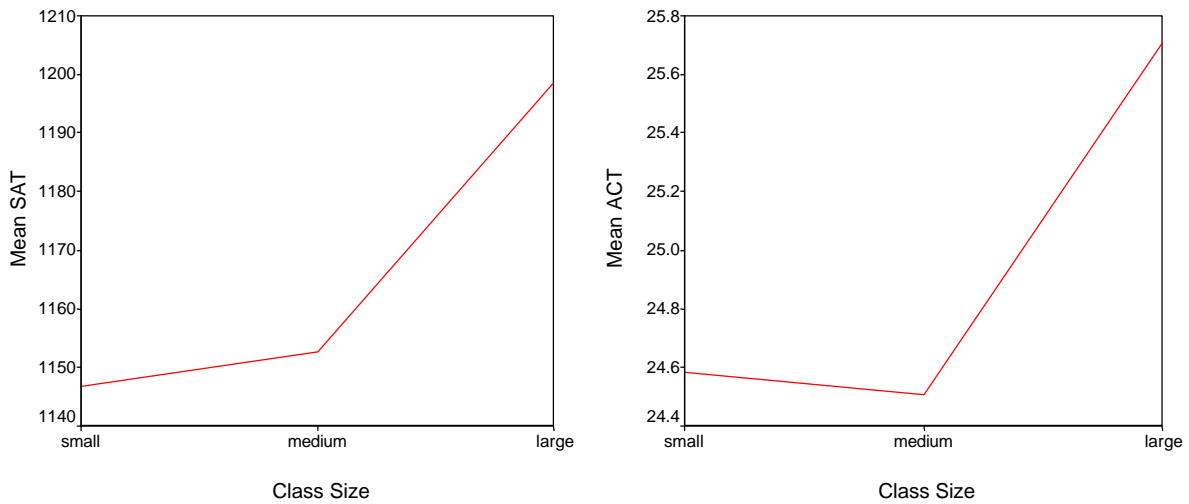


Figure 16. Means for TASPm and FGPR for Class Size

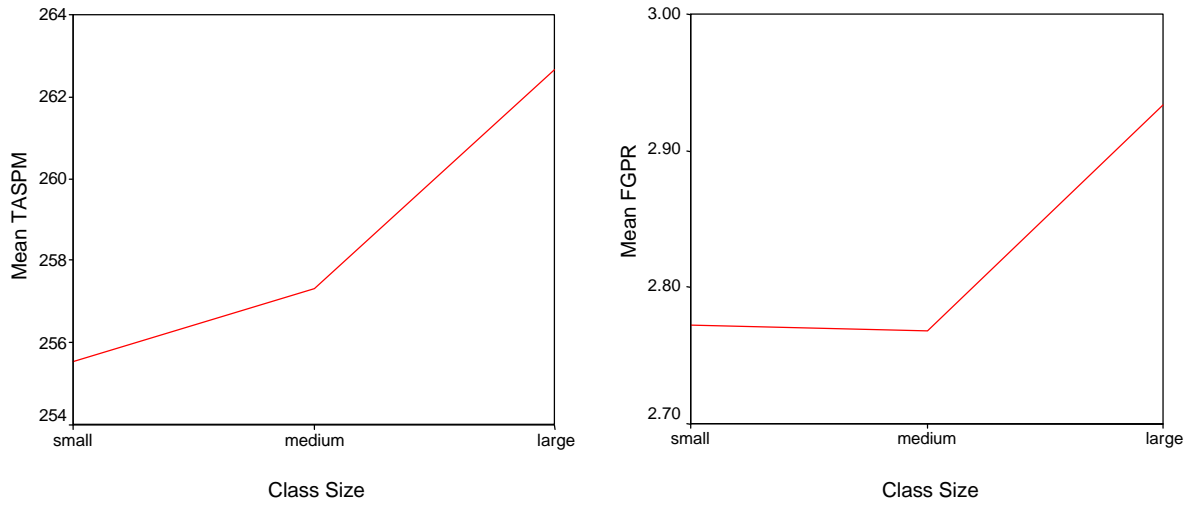
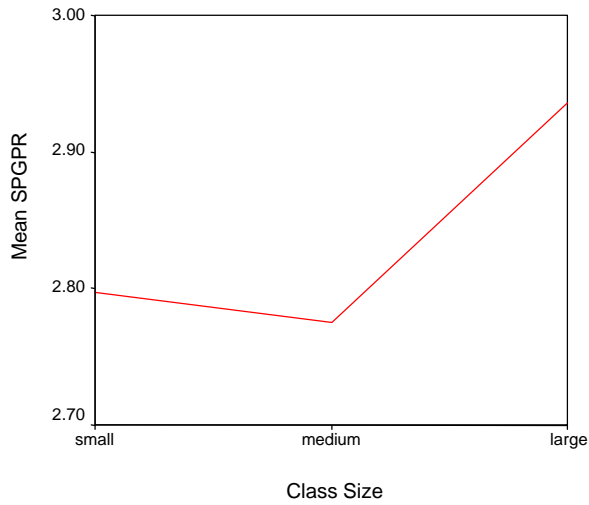


Figure 17. Means for SPGPR for Class Size



Class Rank

In terms of indicators of high school and first year academic ability at Texas A&M University, students possessing better high school class ranks outscored those with lower class rankings.

Table 13.

Class Rank Means for High School and University Performance Variables for 2001-02 Freshmen at Texas A&M University

Class Rank	SAT	ACT	TASPR	TASPW	TASPM	FGPR	SPGPR	SSGPR
First Quartile (n=1531)	1203.95	25.89	261.45	243.67	259.54	3.06	3.09	3.30
Second Quartile (n=1428)	1146.08	24.49	256.10	240.08	254.61	2.82	2.83	3.08
Third Quartile (n=1456)	1147.00	24.34	257.12	240.34	259.32	2.75	2.78	2.91
Fourth Quartile (n=1481)	1169.19	24.57	258.64	240.15	258.33	2.65	2.64	2.87

Figure 18. Means for SAT and ACT for Class Rank

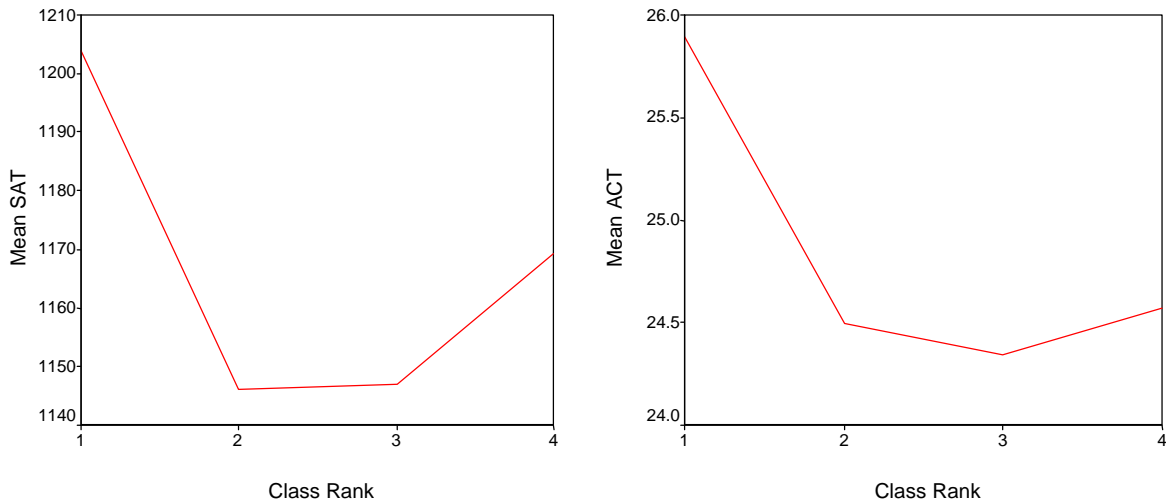


Figure 19. Means for FGPR and SPGPR for Class Rank

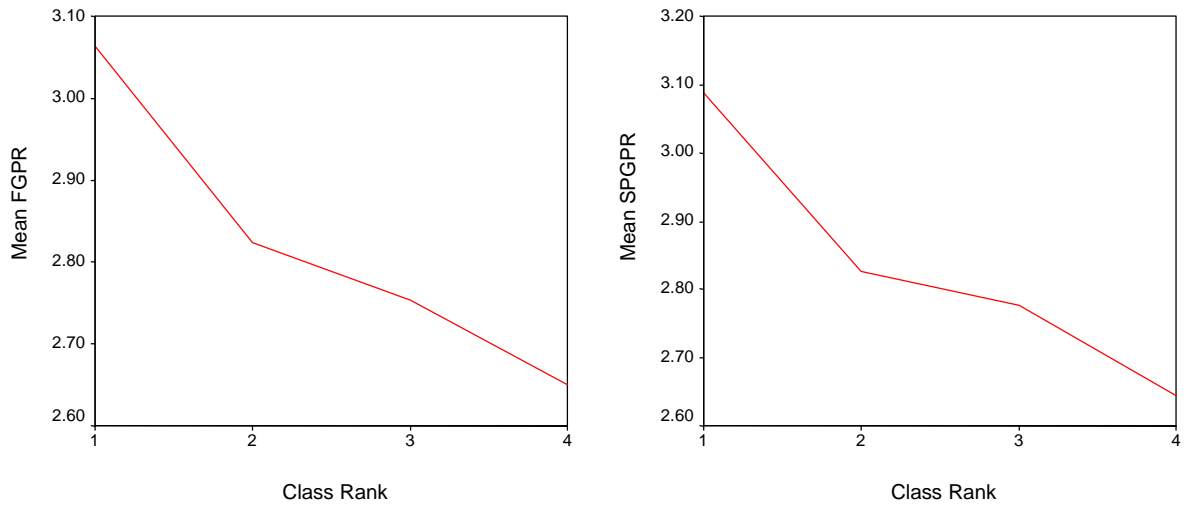


Figure 20. Means for SSGPR for Class Rank

