

## EPRS8530 Project 1 Cover Page

1. Scott Schamberger, Educational Policy Studies, Social Foundations of Education
2. Relationship between Grade Point Average, SAT performance, and ACT performance at a selective independent school
3. General Interest
4. Descriptive Statistics, Correlation, Graph
5. Collected data from the school where I am employed

### Problem

The purpose of this study is to investigate the relationship between Grade Point Average (GPA), SAT performance, and ACT performance of a total of forty nine graduating students in the Class of 2012 at a selective independent school.

### Data

Student	GPA	SAT	ACT
1	3.28	1200	27
2	3.71	1350	30
3	3.93	1530	34
4	3.72	1260	27
5	2.74	1070	25
6	3.62	1250	28
7	3.07	1130	26
8	3.53	1230	28
9	3.63	1150	30
10	3.99	1250	30
11	3.82	1190	25
12	3.22	1030	26
13	4.27	1470	34
14	3.73	1130	26
15	4.18	1390	28
16	3.50	1450	31
17	3.14	1090	24
18	3.46	1190	24
19	2.26	930	21
20	3.38	1330	30
21	3.76	1140	27
22	3.82	1420	31
23	3.27	1410	31
24	3.95	1480	33

25	3.87	1450	33
26	3.83	1410	33
27	3.50	1190	28
28	3.37	1250	28
29	3.67	1200	27
30	3.97	1520	33
31	3.00	1310	25
32	2.85	1100	23
33	3.03	1080	21
34	3.32	1370	31
35	4.03	1480	33
36	3.32	1360	30
37	2.92	1050	29
38	3.04	1060	27
39	3.87	1160	29
40	3.65	1280	30
41	3.10	1010	27
42	2.93	1130	25
43	3.67	1250	29
44	4.17	1260	30
45	4.17	1220	28
46	2.64	1060	23
47	3.63	1210	29
48	4.16	1460	35
49	4.02	1350	32

## Introduction / Description

This study investigates the relationships between cumulative high school grade point average (GPA), SAT Reasoning Test performance and ACT performance. Forty nine graduating seniors at the Randolph School were involved in this study. All 12<sup>th</sup> grade students who took both college entrance exams were selected. Randolph School is a highly selective, independent school that sends 100% of their graduating seniors on to 4-year colleges.

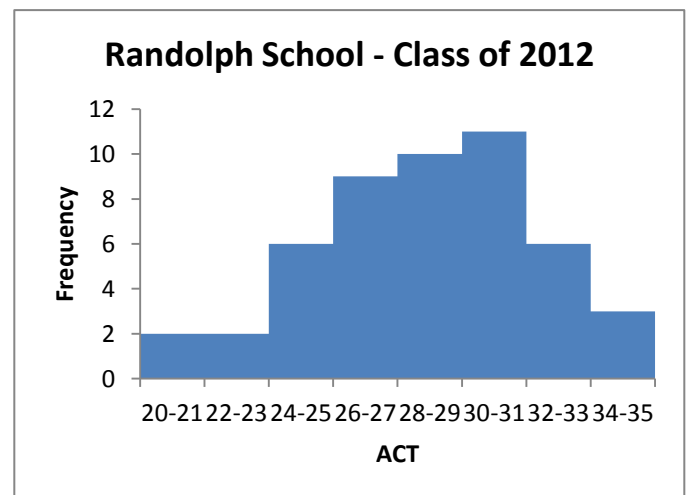
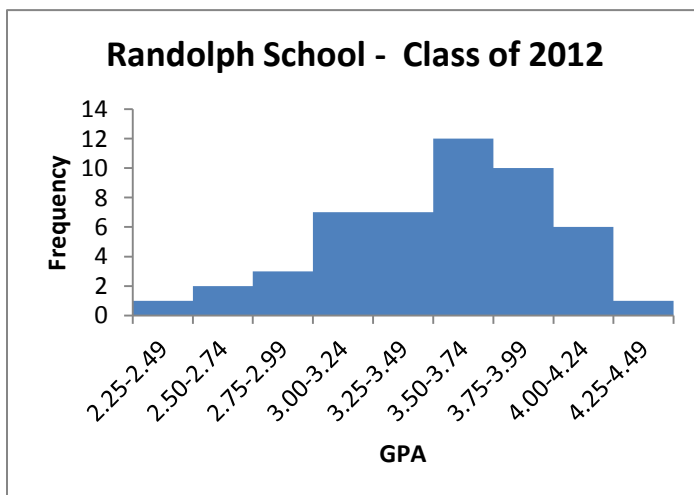
## Method

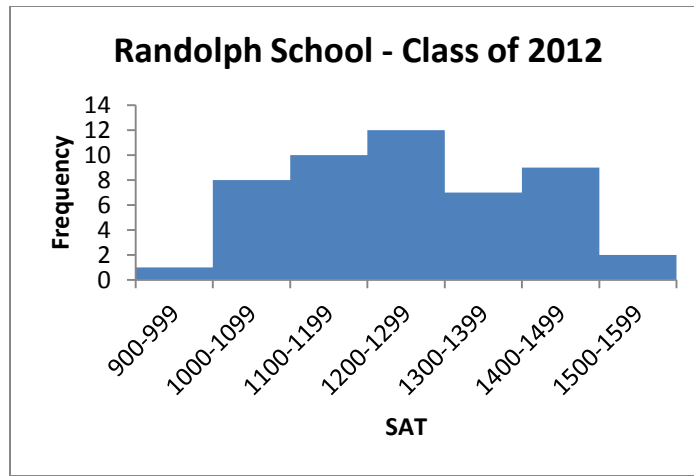
Students at Randolph School receive a college preparatory education throughout their high school program. Course instruction focuses on knowledge production, critical thinking and reasoning, and career exploration. Students earn grades based on a 4.0 scale with extra weight given to Advanced Placement (AP) level courses. Students enrolled in AP courses earn a 5.0 for an A in these classes, a 4.0 for a B, and a 3.0 for a C, thus allowing some students to have a cumulative GPA higher than a 4.0. Randolph students sit for SAT and ACT exams during their junior year of high school with some students retaking one or more exams during their senior year. Cumulative grade point averages will be compared with the student's performance on the SAT and ACT to determine if any significant relationships exist between the three variables. SAT performance will also be compared to ACT performance to determine if any correlation exists.

## Results

The descriptive statistics and the correlations are shown in the tables and graphs below:

	N	Minimum	Maximum	Mean	Std. Deviation
GPA	49	2.26	4.27	3.52	0.46
SAT Score	49	930	1530	1251	152
ACT Score	49	21	35	28.45	3.40

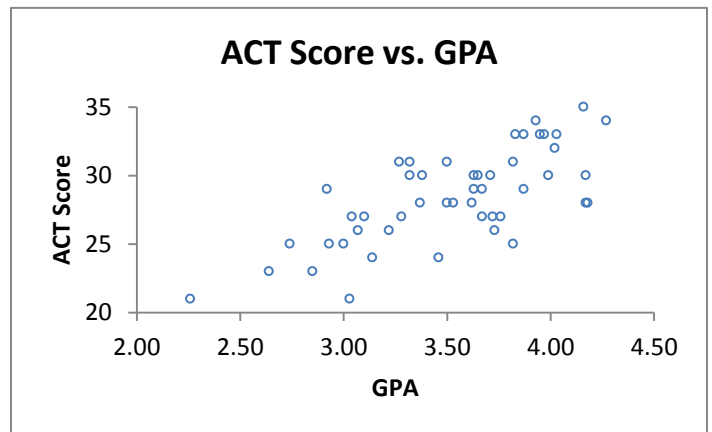
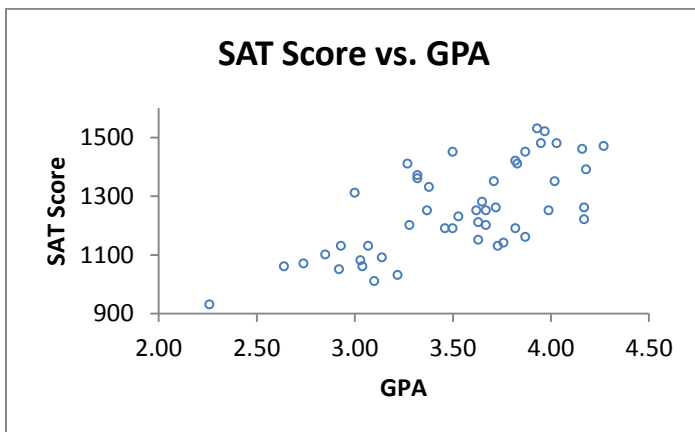


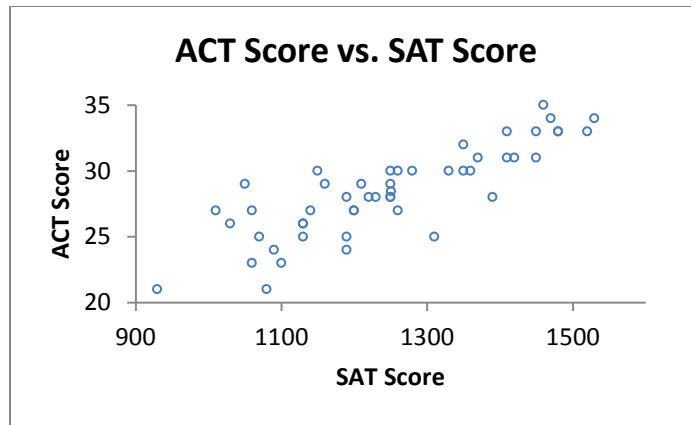


### Correlations

		GPA	SAT	ACT
GPA	Pearson Correlation	1	.687**	.719**
	Sig. (2-tailed)		.000	.000
	N	49	49	49
SAT	Pearson Correlation	.678**	1	.841**
	Sig. (2-tailed)	.000		.000
	N	49	49	49
ACT	Pearson Correlation	.719**	.841**	1
	Sig. (2-tailed)	.000	.000	
	N	49	49	49

\*\*Correlation is significant at the 0.01 level (2-tailed).





### Discussion / Conclusion

A strong correlation was found between all three variables: grade point average, SAT performance, and ACT performance. The strongest correlation was found between SAT performance and ACT performance ( $r=.841$ ). This correlation can be expected since both the SAT exam and ACT exam test similar areas including critical reasoning, English, and mathematics. A strong positive correlation can be found between GPA and ACT performance ( $r=.719$ ) as well as GPA and SAT performance ( $r=.678$ ). These correlations can be expected since Randolph students are engaged in a college preparatory curriculum that emphasizes critical thinking and reasoning. Additionally, Randolph students are all taking advanced level coursework that is designed to prepare them for standardized exams and college. Generally, students at Randolph can be expected to perform well on normed tests since admission to Randolph is selective. The slightly stronger correlation between ACT and GPA versus SAT performance and GPA is not surprising since this exam also includes a science section, an academic area that Randolph School offers extensive accelerated courses in. The SAT exam does not include a section on science. This slightly stronger correlation is also not surprising because the Randolph college counselors prioritize the ACT since it has historically been the college entrance exam that Randolph students have performed better on.

This study confirms the strong relationship between academic performance in school and performance on the SAT and ACT. Further study needs to be done to determine if there is a correlation between the different sections on the SAT and ACT and academic performance in those areas as defined by GPA. Additionally, further study needs to be done to determine if similar correlations exist in broader populations of students who are exposed to different high school environments and socioeconomic backgrounds.