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A Study of the Correlation Between Grade Point Averages and Scholastic Aptitude Test Scores at Tallwood High School 1995-1996

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OLD DOMINION UNIVERSITY

A STUDY OF THE CORRELATION BETWEEN
GRADE POINT AVERAGES AND
SCHOLASTIC APTITUDE TEST SCORES
AT TALLWOOD HIGH SCHOOL 1995 - 1996

A RESEARCH PAPER PRESENTED TO
THE FACULTY OF THE COLLEGE OF EDUCATION
IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE
DEGREE OF MASTER OF SCIENCE IN EDUCATION

BY

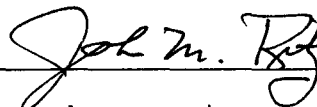
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AUGGUST 1996

APPROVAL PAGE

This research paper was prepared by Joseph E. Jordan, Jr. under the direction of Dr. John M. Ritz in OTED 636, Research Methods in Education. It was submitted as partial fulfillment of the requirements for the Degree of Master of Science in Education.

APPROVAL BY:

8-10-96

Dr. John M. Ritz
Advisor and
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Joseph E. Jordan, Jr.

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CHAPTER I

INTRODUCTION

Each year, several hundred thousand American students begin the often laborious process of applying to the schools and colleges of their choice. Especially in the more selective schools, admissions officers are inundated with applications and they attempt to assess them to determine who will be offered the opportunity to matriculate.

Although American colleges and universities have used a wide variety of admissions procedures and have used other criteria as well, almost all of them have used high school grade point averages or GPAs and SAT scores (or, in some cases, American College Testing or ACT program test scores) as the two major factors in the process. Many have also used them as predictors of college academic performance.¹

Over the years, SAT scores have fallen while GPAs have risen. Given the amount of time and effort that students and schools alike expend on preparing for the SAT, and given the controversy that has surrounded this test from many sources, it is important to determine the strength of the correlation between test scores and GPAs in an attempt to ascertain the test's utility for college placement/acceptance.

STATEMENT OF THE PROBLEM

The problem of this study was to determine if there is a correlation between Tallwood High School 1995 - 1996 seniors' grade point averages and their SAT scores.

RESEARCH GOAL

This study was used to gain information about the success of high school students with regard to grade point averages and SAT scores. The hypothesis established for this research was:

H₁: High school students with higher grade point averages will also earn higher SAT scores.

BACKGROUND AND SIGNIFICANCE

The Scholastic Aptitude Test or SAT, whose name was changed in March 1994 to the Scholastic Assessment Test for political correctness, has been taken each year since 1926 by college-bound high school seniors. This test, sponsored by the College Entrance Examination Board and administered by the Educational Testing Service or ETS, has been used for admissions by colleges and universities ever since -- at last count by more than 1,500 institutions. The more than one million students who completed the 1995 test represented about 41 percent of all high school seniors and approximately 64 percent of all entering first-year, full-time college students.²

Use of the SAT grew slowly until its adoption by Harvard, Yale and Princeton in 1942 which moved it to center stage.

The increase in college applicants after World War II fueled the demand for this test; candidate volume grew tenfold in the 1950s and has increased steadily ever since.³

Average scores on the SAT declined an alarming 81 points between 1963 and 1977.⁴ They had gone down another nine points by 1981, since which time verbal scores have remained relatively stable while math scores have improved slightly.

Concurrent with changing the SAT's name to Scholastic Assessment Test in 1994, the College Board and ETS revised the test, in an attempt to place greater emphasis on the kind of reasoning skills that are considered to be important for academic success in college. Another goal was to provide a test that would be useful beyond its original purpose of predicting academic performance in the first year of college and be useful in course placement and program planning.⁵ The College Board and ETS maintain that scores on the new SAT have been linked statistically to traditional scores to facilitate comparisons across the years.⁶

In 1995 the College Board and ETS also introduced a new recentered SAT scoring system devised to raise the average score back to 500, ostensibly to reflect a more diverse school population who has taken the test on recent years than was the case several generations ago.⁷

When the 1995 SAT scores were released they revealed the biggest increase in a decade⁸ and the highest math average in 23 years.⁹ While some maintain that these scores

reflect a real improvement or turnaround in our nation's high schools, others are suspicious that the revision might have affected the score increases.^{10,11}

While SAT scores have been declining, there has been at least a perception of more lenient grading in both colleges and in high schools, accompanied by a concomitant elevation of grade point averages. ETS has collected and compiled a large amount of data on its tests and the students taking them, including high school GPAs and class rank. Although the latter and much other information is self-reported by test takers, in the eight years they have been collecting information on GPAs the number of students reporting high grades has increased 24 percent.¹²

There have been a plethora of studies conducted using various factors such as GPAs, SAT scores, family variables (parents' education, income, etc.) and personality variables (self-control, conscientiousness, task-orientedness, organization, etc.) and combinations of these factors. Some of the more recent studies have concentrated on such groups as certain minorities, athletes and the disabled. Many of the studies attempted to correlate GPAs and SAT scores as a precursor to predicting college academic performance.

There have been no studies, however, which have attempted to determine the redundancy of GPAs and SAT scores based on the new SAT or using the recentered SAT scale. If the hypothesis of this study proves to be true,

and is expanded and statistically validated, the results could be of tremendous value to potential college students, high schools and colleges in that the SAT might be eliminated as a criterion for college admission. It would redress the contention that the SAT is unfair to certain minority, female and low-income applicants. Such a decision would save high school students anticipating going to college a great deal of time and money. It would also benefit high schools since they would no longer have to administer the test or conduct preparatory courses. For colleges, elimination of the SAT would reduce the amount of time and effort required to select applicants for admission.

LIMITATIONS

The following limitations have affected this study:

- 1) The population for this study was limited to senior students currently enrolled at Tallwood High School, Virginia Beach, Virginia, who have taken the SAT.
- 2) Grade point averages used were those through the end of the junior year since new averages were tabulated too late to be used in this study.
- 3) SAT scores used were the highest obtained through January 1996 since later scores were received too late to be used in this study.

ASSUMPTIONS

The following assumptions were made concerning this study:

- 1) Junior year grade point averages will be representative of final grade point averages.

- 2) SAT scores through January 1996 will be representative of final SAT scores.
- 3) Students, teachers and parents were aware of the importance of high school grades and SAT scores.
- 4) Students, teachers and parents were aware that high school grades and SAT scores were used to determine admission to college.

PROCEDURES

The completion of this study required research into students' grade point averages at Tallwood High School through their junior year and their SAT scores. Prior to viewing any of this information, permission was obtained from the principal of Tallwood High School. Of the total of 271 seniors who took the SAT, a randomly chosen sample of 160 students were used to complete this study. The averages and scores were recorded, tabulated and analyzed to determine the correlation between grade point averages and SAT scores.

DEFINITION OF TERMS

The following terms were relevant to this study:

- 1) GPA - Grade Point Average, the cumulative average, based on a 4.0 scale, of all academic subjects taken by a student
- 2) SAT - Scholastic Assessment Test, a program used to measure verbal and mathematical reasoning abilities
- 3) Correlation - The connection between two variables.

SUMMARY AND OVERVIEW

In Chapter I the problem has been identified, the research goal presented, the need for the study established

and the limitations, assumptions, procedures and definitions delineated.

Chapter II will provide a review of the relevant literature and Chapter III will explain the methods and procedures used to collect data. Chapter IV will present the study's findings and a summary, conclusions and recommendations will be contained in Chapter V.

CHAPTER I END NOTES

¹James Crouse and Dale Trusheim, The Case Against the SAT (Chicago: The University of Chicago Press, 1988), 41.

²Educational Testing Service, College-Bound Seniors National Report: 1995 Profile of SAT Program Test Takers. (Princeton, N.J.: Educational Testing Service, 1995).

³Crouse, 25-27.

⁴Robert Rothman, Measuring Up: Standards, Assessment, and Reform, (San Francisco: Jossey-Bass Publishers, 1995), 40.

⁵John W. Young, "The New SAT," Colleges and Universities LXIX (Summer 1994): 146-9.

⁶Educational Testing Service.

⁷"SAT Scores Move Upward -- But Critics Still Carp," The Executive Educator 17 (October 1995): 8.

⁸Christopher Shea, "SAT Scores Show Biggest Increase in 10 Years; ACT Results Level Off," The Chronicle of Higher Education XLII (September 8, 1995): A58.

⁹"SAT Scores Move Upward," 6.

¹⁰Ibid.

¹¹Shea.

¹²Educational Testing Service.

CHAPTER II

REVIEW OF LITERATURE

Chapter II is the review of the literature. Literature on grade point averages and the Scholastic Aptitude Test will be covered.

GRADE POINT AVERAGES

Most of the studies conducted over the past several years have concluded that a student's high school record, expressed in either GPA or class rank, is the single best predictor of academic performance in college. A representative selection of these studies are discussed below.

In a 1979 joint survey of all institutions listed in the Education Directory completed by the American Association of Collegiate Registrars and Admissions Officers (AACRAO) and the College Board, 40 percent of all four-year institutions indicated that high school academic performance was the most important student characteristic or credential they considered in making admissions decisions. No other credential was considered most important by more than four percent of the 1,463 institutions that responded and only two percent selected aptitude tests (SAT and ACT).¹³

A 1989 study of students at a female, two-year liberal arts college investigated the relative predictive value of

traditional predictors (e.g., GPAs and SAT scores) versus those that included both traditional and non-traditional (cognitive complexity, locus of control, academic self-concept and effort) predictors. The results of this study, which used both standard and stepwise multiple regression procedures, indicated that GPA was the only significant traditional contributor to the model, and then only for those women expected to perform well (above 3.0) in college. Academic self-concept was also a significant predictor for this group. The non-traditional variables of achievement success and effort were the only significant predictors for lower performing students.¹⁴

Another study involving college psychology students used GPAs, SAT scores and 32 personality variables to conclude that GPA accounted for 19 percent of the variance, self-control for six percent and the SAT for only five percent. In this study, GPA also correlated moderately ($r = .41$) with SAT scores. This and other studies suggest that an argument can be made for using non-traditional variables in making college admissions decisions and in predicting college success.¹⁵ Even ETS, in their literature, admits that a student's high school record, including GPA and class rank, is the best single indicator of how well a student will do in college.¹⁶

Since GPA is so important in college admissions decisions, it would be preferable if high schools calculated

them in a standard manner. Studies have indicated, however, that high schools use a range of approaches, with most using all grades while some use weighted grades, an increasing trend.¹⁷

SCHOLASTIC APTITUDE TEST

While studies seldom indicate that SAT scores are the single most important factor in predicting college performance, some have shown that using test scores can increase the predictive validity, although in varying and sometimes minimal degrees. In their study of the predictive value of GPA and SAT scores over two decades, Willingham et al. concluded that the SAT is quite redundant with GPA.¹⁸

Although studies exist which both "prove" and "disprove" the predictive value of the SAT, both proponents and opponents of this test agree that such factors as students having a strong background in basic skills, coaching and students who are good test takers all improve test performance.¹⁹

The predictive validity of the SAT dropped in the 1980's, especially in more selective schools. But, because GPA's and SAT scores are redundant, the regression equation used by most college admissions offices did not show a corresponding drop in validity.²⁰

Some educators assert that the SAT is irrelevant, adding virtually nothing to what is already known from a student's high school record.²¹ Still other authors go so far as to

question the entire reason for the existence of the Educational Testing Service and its products.²²

The most extensive investigation of the SAT and its predictive validity was a six-year study conducted by James Crouse and Dale Trusheim using the College Board's Validity Study Service data and data from the National Longitudinal Study of the high school class of 1972, in which 19,144 seniors from a target population of 1,200 public and private high schools were surveyed, for their research. They maintained that SAT scores and GPAs were statistically redundant and concluded that their use added only a minimal amount to the predictive validity of the GPA alone when attempting to improve the accuracy of admissions decisions, academic performance and graduation rates.

The gain from adding the SAT is therefore only an increase in average freshman grades of 0.02 on a four-point scale, while educational attainment increases by just 0.01 years.²³

Crouse and Trusheim go on to discuss in depth their contention that the SAT does not help students select colleges where they will be successful and that it has an adverse impact on black and low-income applicants.

In his review of the literature on this subject, Jenkins reveals that the SAT is not used as a predictor in Canadian post-secondary institutions, possibly due to some of the limitations that have been discussed above. He concludes that, at best, SAT scores should be used with caution as a supplement to GPAs.²⁴

SUMMARY AND OVERVIEW

In Chapter II a review of relevant literature related to grade point averages and SAT scores has been presented.

Chapter III will explain the methods and procedures used to collect data, Chapter IV will present the study's findings and a summary, conclusions and recommendations will be contained in Chapter V.

CHAPTER II END NOTES

¹³J. Douglas Conner, "Admissions Policies and Practices: Selected Findings of the AACRAO/CEEB Survey," NASSP Bulletin 67 (February 1983): 35-6.

¹⁴Korell W. Kanoy, Janet Webster and Marta Latta, "Predicting College Success of Freshmen Using Traditional, Cognitive, and Psychological Measures," Journal of Research and Development in Education 22 (Spring 1989).

¹⁵Raymond N. Wolfe and Scott D. Johnson, "Personality as a Predictor of College Performance," Educational and Psychological Measurement 55 (April 1995).

¹⁶Educational Testing Service, Taking the SAT I Reasoning Test, (Princeton, N.J.: Educational Testing Service, 1995), 3.

¹⁷Judith Siegel and Carolyn S. Anderson, "Considerations in Calculating High School GPA and Rank-in-Class," NASSP Bulletin 75 (October 1991): 96-7.

¹⁸W. W. Willingham, C. Lewis, R. Morgan and L. Ramist, Predicting College Grades: An Analysis of Institutional Trends Over Two Decades, (Princeton, N.J.: Educational Testing Service, 1990).

¹⁹Virginia E. McCullough, Testing and Your Child (New York: Plume, 1992), 210.

²⁰Wolfe, 177.

²¹Gerald W. Bracey, "The SAT: As Scores Rise, Media Interest Wanes," Phi Delta Kappan 77 (October 1995): 153.

²²David Owen, None of the Above, (Boston: Houghton Mifflin Company, 1985).

²³James Crouse and Dale Trusheim, The Case Against the SAT, (Chicago, The University of Chicago Press, 1988), 60.

²⁴Neil J. Jenkins, The Scholastic Aptitude Test as a Predictor of Academic Success: A Literature Review, 1991, 8, ERIC, ED 354 243.

CHAPTER III

METHODS AND PROCEDURES

Chapter III outlines the methods and procedures that were used in this study. It includes discussion of the study's population, the research variables involved, the test instrument used, how data was collected and the statistical analysis procedures used.

POPULATION

The population of this study was limited to senior students currently enrolled at Tallwood High School in Virginia Beach, Virginia. It included only the 271 members of the class of 1996 who have taken the SAT. Of this total, a random sample of 160 students was used to complete the study.

RESEARCH VARIABLES

The two independent research variables for this study were grade point averages (GPAs) and SAT scores. GPAs were calculated on a 4.0 scale where a grade of A equalled a 4.0. Students who took Advanced Placement courses received extra credit and, conceivably, these students could attain GPAs greater than 4.0. SAT scores were a combination of verbal and mathematical scores with a potential maximum score of 1600. There were no dependent variables.

INSTRUMENT

The SAT I Reasoning Test is given several times a year by the Educational Testing Service for the College Board. This test is designed to measure a student's verbal and mathematical reasoning ability. It lasts three hours and consists of seven timed sections -- three verbal, three math and one "equating section", which may be either verbal or math but does not count toward the student's score.²⁵

Most of the questions on the SAT I are multiple choice with four or five options, and the revised version now has a mathematical subsection that requires students to produce and fill in their own answers. The revised version also allows students to use calculators for the first time.²⁶

ETS has determined the Standard Error of Measurement (SEM) for each part, verbal and mathematical, of the SAT to be about 30 points (out of 800).²⁷ This figure was arrived at using the earlier version of the SAT, in which the average for each part was designed to be 500, but the 1995 mean was 428 for the verbal section and 482 for the mathematical section. ETS has maintained that the SEM should also apply to the revised version.

DATA COLLECTION

Data on GPAs and SAT scores on the 271 students in the population was provided by the Guidance Department at Tallwood High School. All of these students took the SAT in the Fall

of 1995 or during the January 1996 session. Data for only the 160 students in the random sample was used for this study.

STATISTICAL ANALYSIS

Statistical analysis of the data was done by examining each student's GPA and SAT score. The Pearson product-moment correlation was used to determine the relationship between these two variables.

SUMMARY AND OVERVIEW

In Chapter III a discussion of the target population, the research variables involved and the test instrument used was provided as well as a presentation of the methods used to collect the data and the procedures used to analyze it statistically. A Pearson product-moment correlation was selected for this analysis. Chapter IV will present the study's findings and a summary, conclusions and recommendations will be contained in Chapter V.

CHAPTER III END NOTES

²⁵Educational Testing Service, Taking the SAT, 3.

²⁶Young, 148.

²⁷Educational Testing Service, Taking the SAT, 5.

CHAPTER IV

FINDINGS

The purpose of this study was to determine if there is a correlation between Tallwood High School 1995 - 1996 seniors' grade point averages and SAT scores. This chapter presents the statistical tabulations of data collected for this study.

NARRATIVE

A comparison of GPAs and SAT scores was made using the Pearson product-moment method of determining the coefficient of correlation. Table 1 contains data on the GPAs and SAT scores for the 160 students in the sample. This data was tabulated using the Quattro Pro computer software program.

The statistical significance of this result was determined by comparing the value of the obtained r with the 5 and 1 percent values from the Product-Moment Correlation Coefficient Table in Handbook in Research and Evaluation, Third Edition, by Stephen Isaac and William B. Michael. The interpretation of the correlation and relationship between the two independent variables will be presented in Chapter V.

The Pearson product-moment correlation was calculated as follows:

$$r = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{(N \sum X^2 - (\sum X)^2)(N \sum Y^2 - (\sum Y)^2)}}$$

$$r = \frac{(160)(449,898.314) - (155,930)(452.1462)}{\sqrt{(160)(156,055,900) - (24,314,164,900))((160)(1,333.3972) - (204,436.1862))}}$$

$$r = \frac{71,983,730 - 70,563,157}{\sqrt{(24,968,944,000 - 24,314,164,900)(213,343.55 - 204,436.1862)}}$$

$$r = \frac{1,480,573}{\sqrt{(654,779,100)(8,907.36)}}$$

$$r = \frac{1,480,573}{\sqrt{(5,832,353,164,000)}}$$

$$r = \frac{1,480,573}{2,415,026.535}$$

$$r = .6130669699 \text{ or } .613067$$

SUMMARY AND OVERVIEW

In Chapter IV a discussion of the findings of this study have been presented. Chapter V will provide a summary, conclusions and recommendations.

TABLE 1
GPA'S AND SAT SCORES

Sample	GPA		SAT Score		
	X	X ²	Y	Y ²	XY
S1	1070	1,144,900	3.5366	12.5075	3,784.162
S2	890	792,100	2.7895	7.7813	2,482.655
S3	760	577,600	2.3947	5.7346	1,819.972
S4	880	774,400	2.5263	6.3822	2,223.144
S5	970	940,900	2.6316	6.9253	2,552.652
S6	690	476,100	2.5556	6.5311	1,763.364
S7	990	980,100	3.5263	12.4348	3,491.037
S8	820	672,400	2.7143	7.3674	2,225.726
S9	1190	1,416,100	3.1000	9.6100	3,689.000
S10	1030	1,060,900	2.5789	6.6507	2,656.267
S11	680	462,400	1.7895	3.2023	1,216.860
S12	770	592,900	2.0769	4.3135	1,599.213
S13	1060	1,123,600	3.3684	11.3461	3,570.504
S14	900	810,000	2.6316	6.9253	2,368.440
S15	1080	1,166,400	3.2162	10.3439	3,473.496
S16	1050	1,102,500	2.8000	7.8400	2,940.000
S17	980	960,400	2.9429	8.6607	2,884.042
S18	1070	1,144,900	3.5395	12.5281	3,787.265
S19	990	980,100	3.0625	9.3789	3,031.875
S20	950	902,500	2.8421	8.0775	2,699.995
S21	1220	1,488,400	3.2610	10.6341	3,978.420
S22	910	828,100	2.7222	7.4104	2,477.202
S23	880	774,400	2.6579	7.0644	2,338.952
S24	890	792,100	2.7895	7.7813	2,482.655
S25	960	921,600	2.0789	4.3218	1,995.744
S26	1170	1,368,900	3.2778	10.7440	3,835.026
S27	990	980,100	2.4565	6.0344	2,431.935
S28	700	490,000	2.7317	7.4622	1,912.190
S29	890	792,100	3.1111	9.6789	2,768.879
S30	1110	1,232,100	3.7439	14.0168	4,155.729
S31	1220	1,488,400	4.1464	17.1926	5,058.608
S32	1060	1,123,600	2.6750	7.1556	2,835.500
S33	880	774,400	2.2727	5.1652	1,999.976
S34	1370	1,876,900	3.0801	9.4870	4,219.737
S35	1290	1,664,100	3.1823	10.1270	4,105.167
S36	1020	1,040,400	3.0000	9.0000	3,060.000
S37	980	960,400	2.5263	6.3822	2,475.774
S38	760	577,600	2.3056	5.3158	1,752.256
S39	980	960,400	3.3158	10.9945	3,249.484
S40	860	739,600	2.7222	7.4104	2,341.092
S41	1020	1,040,400	3.2368	10.4769	3,301.536
S42	920	846,400	2.8333	8.0276	2,606.636
S43	950	902,500	2.9390	8.6377	2,792.050
S44	860	739,600	1.5714	2.4693	1,351.404
S45	1060	1,123,600	2.4737	6.1192	2,622.122

TABLE 1 Continued

Sample	GPA		SAT Score		
	X	X ²	Y	Y ²	XY
S46	1200	1,440,000	3.9604	15.6848	4,752.480
S47	1060	1,123,600	2.5385	6.4440	2,690.810
S48	1110	1,232,100	3.4091	11.6220	3,784.101
S49	1180	1,392,400	3.9000	15.2100	4,602.000
S50	1040	1,081,600	2.6500	7.0225	2,756.000
S51	1240	1,537,600	3.2368	10.4769	4,013.632
S52	1010	1,020,100	1.9750	3.9006	1,994.750
S53	990	980,100	2.9500	8.7025	2,920.500
S54	1010	1,020,100	2.4167	5.8404	2,440.867
S55	1000	1,000,000	3.0526	9.3184	3,052.600
S56	1290	1,664,100	4.0976	16.7903	5,285.904
S57	800	640,000	2.2143	4.9031	1,771.440
S58	790	624,100	2.9500	8.7025	2,330.500
S59	880	774,400	3.0833	9.5067	2,713.304
S60	620	384,400	1.2632	1.5957	783.184
S61	980	960,400	3.3095	10.9528	3,243.310
S62	920	846,400	3.1316	9.8069	2,881.072
S63	1180	1,392,400	3.1190	9.7282	3,680.420
S64	990	980,100	2.3455	5.5014	2,322.045
S65	710	504,100	2.4167	5.8404	1,715.857
S66	1010	1,020,100	2.8684	8.2277	2,897.084
S67	720	518,400	2.6163	6.8450	1,883.736
S68	1020	1,040,400	1.3333	1.7777	1,359.966
S69	890	792,100	2.8889	8.3457	2,571.121
S70	1010	1,020,100	2.8500	8.1225	2,878.500
S71	940	883,600	2.5000	6.2500	2,350.000
S72	900	810,000	2.6842	7.2049	2,415.780
S73	1080	1,166,400	3.4167	11.6738	3,690.036
S74	710	504,100	2.2778	5.1884	1,617.238
S75	1040	1,081,600	3.0541	9.3275	3,176.264
S76	980	960,400	2.2778	5.1884	2,232.244
S77	1010	1,020,100	3.3889	11.4846	3,422.789
S78	1050	1,102,500	1.9189	3.6822	2,014.845
S79	1360	1,849,600	3.5976	12.9427	4,892.736
S80	790	624,100	2.3158	5.3629	1,829.482
S81	1140	1,299,600	3.5250	12.4256	4,018.500
S82	1180	1,392,400	3.9459	15.5701	4,656.162
S83	810	656,100	2.9375	8.6289	2,379.375
S84	1010	1,020,100	2.5814	6.6636	2,607.214
S85	1100	1,210,000	3.6250	13.1406	3,987.500
S86	720	518,400	2.6111	6.8178	1,879.992
S87	750	562,500	2.2778	5.1884	1,708.350
S88	1120	1,254,400	3.6945	13.6493	4,137.840
S89	1110	1,232,100	2.5250	6.3756	2,802.750
S90	700	490,000	2.1500	4.6225	1,505.000
S91	750	562,500	2.6053	6.7876	1,953.975
S92	760	577,600	2.8421	8.0775	2,159.996

TABLE 1 Continued

Sample	GPA		SAT Score		
	X	X ²	Y	Y ²	XY
S93	1170	1,368,900	3.3364	11.1316	3,903.588
S94	840	705,600	1.6579	2.7486	1,392.636
S95	950	902,500	1.9737	3.8955	1,875.015
S96	1170	1,368,900	3.7351	13.9510	4,370.067
S97	1020	1,040,400	3.2000	10.2400	3,264.000
S98	1240	1,537,600	3.3947	11.5240	4,209.428
S99	960	921,600	1.7805	3.1702	1,709.280
S100	880	774,400	2.6857	7.2130	2,363.416
S101	1010	1,020,100	3.5616	12.6850	3,597.216
S102	1040	1,081,600	3.6000	12.9600	3,744.000
S103	880	774,400	3.1081	9.6603	2,735.128
S104	1000	1,000,000	3.0366	9.2209	3,036.600
S105	940	883,600	2.3421	5.4854	2,201.574
S106	910	828,100	2.3333	5.4443	2,123.303
S107	770	592,900	2.9167	8.5071	2,245.859
S108	1020	1,040,400	3.5372	12.5118	3,607.944
S109	1040	1,081,600	3.1750	10.0806	3,302.000
S110	840	705,600	2.6250	6.8906	2,205.000
S111	1100	1,210,000	2.3684	5.6093	2,605.240
S112	980	960,400	2.3684	5.6093	2,321.032
S113	1110	1,232,100	2.2500	5.0625	2,497.500
S114	1090	1,188,100	2.2143	4.9031	2,413.587
S115	880	774,400	2.9500	8.7025	2,596.000
S116	1160	1,345,600	2.1951	4.8185	2,546.316
S117	880	774,400	2.3684	5.6093	2,084.192
S118	860	739,600	2.7143	7.3674	2,334.298
S119	950	902,500	2.9474	8.6872	2,800.030
S120	1130	1,276,900	3.0278	9.1676	3,421.414
S121	770	592,900	1.3243	1.7538	1,019.711
S122	920	846,400	2.1944	4.8154	2,018.848
S123	1060	1,123,600	2.2750	5.1756	2,411.500
S124	1130	1,276,900	2.8627	8.1951	3,234.851
S125	1190	1,416,100	3.1333	9.8176	3,728.627
S126	960	921,600	3.2488	10.5547	3,118.848
S127	1080	1,166,400	3.5263	12.4348	3,808.404
S128	1040	1,081,600	2.5946	6.7319	2,698.384
S129	820	672,400	2.5263	6.3822	2,071.566
S130	790	624,100	2.8158	7.9287	2,224.482
S131	1050	1,102,500	3.3250	11.0556	3,491.250
S132	1040	1,081,600	3.4250	11.7306	3,562.000
S133	770	592,900	2.1842	4.7707	1,681.834
S134	640	409,600	1.8611	3.4637	1,191.104
S135	880	774,400	2.9474	8.6872	2,593.712
S136	1110	1,232,100	2.6316	6.9253	2,921.076
S137	1220	1,488,400	3.6464	13.2962	4,448.608
S138	1000	1,000,000	3.3947	11.5240	3,394.700
S139	800	640,000	2.3333	5.4443	1,866.640

TABLE 1 Continued

Sample	GPA		SAT Score		
	X	X ²	Y	Y ²	XY
S140	1280	1,638,400	4.0412	16.3313	5,172.736
S141	590	348,100	2.6111	6.8178	1,540.549
S142	1190	1,416,100	2.9962	8.9772	3,565.478
S143	1190	1,416,100	3.7988	14.4309	4,520.572
S144	730	532,900	2.2632	5.1221	1,652.136
S145	1020	1,040,400	3.0577	9.3495	3,118.854
S146	1010	1,020,100	3.4250	11.7306	3,459.250
S147	960	921,600	2.3333	5.4443	2,239.968
S148	1220	1,488,400	3.8116	14.5283	4,650.152
S149	1170	1,368,900	3.1000	9.6100	3,627.000
S150	1280	1,638,400	3.6917	13.6286	4,725.376
S151	750	562,500	2.7222	7.4104	2,041.650
S152	850	722,500	1.9667	3.8679	1,671.695
S153	910	828,100	1.8846	3.5517	1,714.986
S154	760	577,600	2.0000	4.0000	1,520.000
S155	790	624,100	2.2045	4.8598	1,741.555
S156	1010	1,020,100	3.5556	12.6423	3,591.156
S157	850	722,500	2.7391	7.5027	2,328.235
S158	870	756,900	2.5946	6.7319	2,257.302
S159	960	921,600	2.7895	7.7813	2,677.920
S160	1020	1,040,400	3.8421	14.7617	3,918.942

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

In this chapter the data presented in Chapter IV is summarized, conclusions drawn and recommendations are made regarding GPAs and SAT scores attained by Tallwood High School 1995 - 1996 seniors.

SUMMARY

The problem of this study was to determine if there is a correlation between Tallwood High School 1995 - 1996 seniors' grade point averages and their SAT scores. The hypothesis established for this research was:

H₁: High school students with higher grade point averages will also earn higher SAT scores.

The Scholastic Aptitude Test or SAT is taken each year by college-bound high school seniors and has been used for admissions by colleges and universities -- at last count by more than 1,500 institutions. In 1994 the test was revised and in 1995 a new recentered scoring system designed to raise the average score back to 500 was introduced. SAT scores declined an alarming 90 points between 1963 and 1981 and, during this same period, there has been at least a perception of more lenient grading in high schools, accompanied by a concomitant elevation of grade point averages.

There have been a plethora of studies conducted using various factors such as GPAs, SAT scores, family variables and personality variables and combinations of these factors. There have been no studies, however, which have attempted to determine the redundancy of GPAs and SAT scores based on the new SAT or using the recentered SAT scale.

If the hypothesis of this study proves to be true, and is expanded and statistically validated, the results could be of tremendous value to potential college students, high schools and colleges in that the SAT might be eliminated as a criterion for college admission.

The following limitations have affected this study:

- 1) The population for this study was limited to senior students currently enrolled at Tallwood High School, Virginia Beach, Virginia, who have taken the SAT.
- 2) Grade point averages used were those through the end of the junior year since new averages were tabulated too late to be used in this study.
- 3) SAT scores used were the highest obtained through January 1996 since later scores were received too late to be used in this study.

The population of this study was limited to senior students currently enrolled at Tallwood High School in Virginia Beach, Virginia, who have taken the SAT. Of this total, a random sample was used to complete the study. The two independent research variables for this study were grade point averages (GPAs) and SAT scores. There were no dependent variables.

The SAT I Reasoning Test is given several times a year by the Educational Testing Service for the College Board. This test is designed to measure a student's verbal and mathematical reasoning ability. Statistical analysis of the data was done by examining each student's GPA and SAT score. The Pearson product-moment correlation was used to determine the relationship between these two variables.

CONCLUSIONS

The findings of this study revealed the hypothesis that high school students with higher grade point averages will also earn higher SAT scores to be true. A Pearson product-moment correlation using a random sample of 160 students was performed and the resulting r of $+.613067$ was statistically significant at both the 5 and 1 percent levels and demonstrated a moderate positive correlation between these two variables and a substantial relationship.

RECOMMENDATIONS

Based on the findings and the conclusions of this study, the following recommendations are made to help further determine the redundancy of GPAs and SAT scores based on the new SAT and using the new recentered SAT scale.

Additional studies should be conducted using a larger and more diverse population. Perhaps a study similar to the one done by Crouse and Trusheim using College Board Validity Study Service data and data from the National Longitudinal Study of high school classes in which students have taken the new SAT

and have been scored using the recentered scale might be appropriate.

Another appropriate study might involve a determination of the correlation between high school seniors' class standings and their SAT scores.

If such studies are conducted and either GPAs or class standings are found to be statistically correlated to SAT scores, the American Association of Collegiate Registrars and Admissions Officers (AACRAO) might wish to consider eliminating this test as a criterion for college admission.

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