



Classic Learning Test (CLT) as a Predictor of Student Performance

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ABSTRACT: This study investigates the relationship between scores on the Classic Learning Test (CLT) and first-year student GPA at Grove City College. As the CLT gains prominence as an alternative to the SAT and ACT, its predictive validity requires rigorous examination. This study analyzes a sample of 235 Grove City College students, exploring the influence of demographic factors (gender, minority status) and educational background on test performance. Utilizing descriptive statistics, t-tests, correlation matrices, and hierarchical regression, this paper examines the CLT's efficacy as a predictor of academic success. The findings indicate a significant positive correlation between all CLT sections and first-year student GPA, with the Verbal score showing the strongest relationship. Regression analyses confirm that the CLT is a significant predictor of first-year student GPA, even after controlling for demographic variables, supporting its use in college admissions.

1 INTRODUCTION

For generations, the SAT and ACT have served as the primary gatekeepers for college admissions. However, recent trends, including significant revisions and a perceived decline in rigor, have prompted many within academia to question their continued efficacy as reliable predictors of student success. In this shifting landscape, the Classic Learning Test (CLT) has emerged not merely as an alternative, but as a potential restoration of robust academic standards. Grounded in a rich classical education curriculum that emphasizes engagement with foundational texts, the CLT aims to reclaim the intellectual depth that many argue has been eroded in its more established counterparts. The growing acceptance of the CLT by institutions like Grove City College signals a renewed interest in assessments that prioritize analytical rigor and intellectual tradition.

As the CLT gains prominence, it is imperative to empirically validate its effectiveness. The central research question of this study is: Is the Classic Learning Test a good predictor of student academic performance during their first-year student year at Grove City College? This study seeks to answer this question by analyzing the relationship between the CLT scores of incoming students and their subsequent first-year student GPA (Year 1 GPA). Furthermore, this analysis will explore how demographic variables and prior educational experiences influence test scores and the test's overall predictive accuracy within the context of this specific institution.

2 METHODOLOGY

2.1 Participants

The study included 235 students from Grove City College who had taken the Classic Learning Test as part of their application process. Demographic data were collected, including gender (1 = Male, 2 = Female), minority status (1 = White, 2 = Other), and prior educational background (Christian, Homeschool, Classical, Traditional Public). Student persistence was also noted, differentiating between students who remained enrolled or graduated and those who withdrew from the college.

2.2 Measures

- **Classic Learning Test (CLT):** The CLT is a standardized test assessing verbal, writing, and quantitative reasoning skills. The total CLT score and scores for each of the three sub-sections were used.
- **First-year student GPA (Year 1 GPA):** The cumulative grade point average of students at the end of their first year of college was the primary measure of academic success.
- **Persistence:** A binary variable indicating whether a student persisted in their studies (current student or graduate) or did not (withdrew from the college).

2.3 Data Analysis

The data were analyzed using a series of statistical tests. Descriptive statistics were calculated for all variables. T-tests were conducted to compare mean scores between demographic groups (e.g., Male vs. Female, White vs. Minority, Persisted vs. Withdrew). A Pearson correlation matrix was generated to examine the relationships between CLT scores



and first-year student GPA. Also, the Corrected Correlation for the relationship between the CLT and first-year student GPA was computed. Finally, hierarchical multiple regression analyses were performed to determine the predictive power of CLT scores on first-year student GPA while controlling for key demographic variables.

3 Results

The statistical analysis yielded several key findings regarding student performance and the predictive validity of the CLT at Grove City College.

3.1 Descriptive Statistics

Table 1 presents the descriptive statistics for the CLT, Verbal, Writing, and Quantitative scores for the 235 participants. The mean CLT score was 91.43, with a standard deviation of 11.66.

Table 1: Descriptive Statistics

Variable	N	Min	Max	Mean	Std.Dev
CLT	235	59	118	91.43	11.66
Verbal	235	15	40	32.66	4.32
Writing	235	17	40	32.87	4.14
Quantitative	235	13	40	26.30	6.05

3.2 Group Differences

A series of t-tests were conducted to examine differences in CLT scores based on demographic and educational background.

- **Homeschool:** Students with a homeschool background had significantly higher scores on the Writing section of the CLT, $\mu = 33.43$, compared to their non-homeschooled peers, $\mu = 32.27$ ($p = 0.031$).
- **Gender:** A significant difference was found in Quantitative scores, with males ($\mu = 27.64$) outperforming females ($\mu = 25.10$) ($p = 0.001$).
- **Persistence:** Students who persisted (remained enrolled or graduated) had significantly higher CLT ($p = 0.011$) and Verbal ($p = 0.043$), $\mu_{\text{CLT}} = 92.1$ and $\mu_{\text{Verbal}} = 32.89$, scores than students who withdrew, $\mu_{\text{CLT}} = 85.72$ and $\mu_{\text{Verbal}} = 30.76$.
- **Other Groups:** No statistically significant differences in CLT scores were found between minority and non-minority students, or among students from Christian, Classical, or Traditional Public school backgrounds.

3.3 Correlation Analysis

The Pearson correlation matrix (Table 2) shows the relationships between the different test scores and first-year student GPA.

Table 2: Pearson Correlation Matrix, CLT and Components

Variable 1	Variable 2	r	p
CLT	Year 1 GPA	0.37	2.03×10^{-8}
Verbal	Year 1 GPA	0.38	1.07×10^{-8}
Writing	Year 1 GPA	0.31	2.18×10^{-6}
Quant	Year 1 GPA	0.24	2.46×10^{-4}



3.4 Corrected Correlation

To account for the potential impact of range restriction on the observed correlation between the Classic Learning Test (CLT) and first-year student GPA (Year 1 GPA), a corrected correlation was calculated using the formula for correction for restriction of range (Lawley, 1943). For this correction, CLT testing data from the 2019 to 2024 populations were used as the unrestricted reference population. Range restriction often occurs in validation studies within academic settings because the admitted students for whom GPA data are available typically represent a narrower, higher-scoring range of test-takers than the full applicant pool. This truncation can artificially lower the observed correlation coefficient.

The raw correlation between the CLT and Year 1 GPA, shown in Table 2, is 0.37. The correction calculation revealed a corrected correlation of 0.58. This adjusted value suggests that the true predictive validity of the CLT is likely stronger than what is observed in the restricted sample alone, reinforcing the test's utility in predicting academic performance across a broader range of student abilities.

3.5 Hierarchical Regression Analysis

Hierarchical regression models were used to assess the predictive ability of the CLT and its sub-scores on first-year student GPA, after controlling for demographic variables identified as potentially influential.

Table 3: Hierarchal Regression - Predicting Year 1 GPA

Variable	Model R ²	R ² Increment	Direction
Trad Public + Gender	0.073	0.073	+/-
+ CLT	0.208	0.135	+

The demographic variables of Traditional Public School background and Gender accounted for 7.3% of the variance in first-year student GPA. After controlling for these factors, adding the CLT composite score to the model explained an additional 13.5% of the variance in first-year student GPA, a statistically significant increase. This indicates that the CLT offers predictive power beyond these demographic markers.

4 Discussion

4.1 Insights

The results of this study indicate that the Classic Learning Test is a statistically significant predictor of first-year student GPA at Grove City College. This finding directly addresses the primary research question, providing empirical support for the institution's use of the CLT in its admissions process. Both the composite CLT score and its individual sub-scores (Verbal, Writing, and Quantitative) demonstrated a positive correlation with first-year academic performance. The Verbal section of the CLT, in particular, emerged as the strongest individual predictor. The hierarchical regression analysis further strengthens this conclusion. After controlling for gender and educational background, the CLT composite score still accounted for a significant portion of the variance in first-year student GPA. This suggests that the CLT provides valuable, independent information about a student's potential for academic success at Grove City College. The t-test results revealed important insights. The strong, significant relationship between higher CLT and Verbal scores and student persistence is a noteworthy finding. It suggests that the skills measured by the CLT may also be related to the non-cognitive factors that contribute to student retention. Students who enter with stronger verbal reasoning skills, as measured by the CLT, are more likely to successfully navigate their first year and continue their studies.

4.2 Comparison

In order to properly gauge how well the CLT predicts student performance, it is important to have a comparison. A 2024 study from the College Board (Marini et al., 2024), examining their 2018 cohort, did the same analysis, resulting in the following comparison in Table 4.

Table 4: Comparison of Correlation Between The CLT and The SAT and Year 1 GPA

Test and Relationship	Raw Correlation	Corrected Correlation
CLT to Year 1 GPA	0.37	0.58
SAT to Year 1 GPA	0.32	0.53



5 Conclusion

This study sought to empirically validate the Classic Learning Test (CLT) as a predictor of academic performance for first-year students at Grove City College. The statistical analysis provides a clear and affirmative answer: the CLT is not only a valid predictor but also a robust and highly effective instrument for identifying students prepared for the rigors of higher education.

The findings demonstrate a statistically significant positive correlation between all sections of the CLT and first-year student GPA, with the composite score proving to be a powerful predictor even after controlling for demographic variables. This indicates that the CLT measures academic aptitude independently of a student's background. Perhaps the most compelling takeaway from this analysis is the direct comparison with the SAT. The CLT's corrected correlation with first-year student GPA (0.58) is a full five percentage points higher than that of the SAT (0.53). This five-point difference represents a significant enhancement in predictive power, suggesting that the CLT is a more precise instrument for forecasting student success. This enhanced validity may be attributed to its distinct pedagogical philosophy, which prioritizes the deep analytical and verbal reasoning skills cultivated by a classical curriculum—the very skills essential for success in a demanding academic environment.

In a landscape where the value of traditional standardized tests is increasingly debated, the CLT emerges as more than just an alternative; it represents a meaningful restoration of intellectual substance in college admissions. For institutions like Grove City College, and others committed to academic excellence, the CLT has proven itself to be an invaluable tool. The results of this study strongly support its continued and expanded use as a primary means of assessing collegiate readiness.



References

Lawley, D. N. (1943). A note on karl pearson's selection formulae. *Proceedings of the Royal Society of Edinburgh*, 62(28-30).

Marini, J. P., Westrick, P. A., Young, L., and Shaw, E. J. (2024). SAT® Score Relationships with College GPA: First-Year through Fourth-Year Cumulative GPA. College board research report, The College Board, New York.



6 Appendix

Table 5: Descriptive Statistics (Scores)

Variable	N	Min	Max	Mean	Std Dev	Skewness	Std Error
CLT	235	59	118	91.43	11.66	−0.32	0.76
Verbal	235	15	40	32.66	4.32	−0.78	0.28
Writing	235	17	40	32.87	4.14	−0.68	0.27
Quantitative	235	13	40	26.30	6.05	−0.01	0.39
first-year student GPA	235	0	4	3.36	0.62	−1.77	0.04

Table 6: Descriptive Statistics (Demographics)

Variable	N	Min	Max	Mean	Std Dev
Gender	235	1	2	1.53	0.50
Minority	235	1	2	1.12	0.33
Christian	235	0	1	0.82	0.39
Homeschool	235	0	1	0.52	0.50
Classical	235	0	1	0.14	0.34
Trad Public	235	0	1	0.07	0.25

Table 7: Frequency of Student Start Year

Start Year	Frequency	Percent (%)	Cumulative (%)
2019	6	2.55	2.55
2020	23	9.79	12.34
2021	51	21.70	34.04
2022	42	17.87	51.91
2023	54	22.98	74.89
2024	59	25.11	100.00



Table 8: Frequency Table (Graduation Year)

Graduation Status	Frequency	Percent (%)	Cumulative (%)
Withdrew	25	10.64	10.64
Current	139	59.15	69.79
Graduated	71	30.21	100.00

Table 9: T-Test Results by Christian School Background

Variable	Mean (No)	Mean (Yes)	t	p	Cohen's d
CLT	91.30	91.45	-0.07	0.94	-0.01
Verbal	32.70	32.65	0.06	0.95	0.01
Writing	32.51	32.95	-0.56	0.58	-0.11
Quantitative	26.26	26.31	-0.04	0.97	-0.01

Table 10: T-Test Results by Homeschool Background

Variable	Mean (No)	Mean (Yes)	t	p	Cohen's d
CLT	90.53	92.25	-1.13	0.26	-0.15
Verbal	32.12	33.16	-1.83	0.07	-0.24
Writing	32.27	33.43	-2.17	0.03	-0.28
Quantitative	26.27	26.32	-0.06	0.95	-0.01

Table 11: T-Test Results by Classical School Background

Variable	Mean (No)	Mean (Yes)	t	p	Cohen's d
CLT	91.56	90.56	0.47	0.64	0.09
Verbal	32.67	32.59	0.08	0.94	0.02
Writing	32.95	32.41	0.74	0.46	0.13
Quantitative	26.37	25.81	0.58	0.57	0.09

Table 12: T-Test Results by Traditional Public School Background

Variable	Mean (No)	Mean (Yes)	t	p	Cohen's d
CLT	91.84	85.69	1.84	0.08	0.53
Verbal	32.76	31.25	1.15	0.27	0.35
Writing	33.04	30.56	1.70	0.11	0.60
Quantitative	26.46	24.06	1.60	0.13	0.40

Table 13: T-Test Results by Minority Status

Variable	Mean (No)	Mean (Yes)	t	p	Cohen's d
CLT	91.55	90.55	0.35	0.73	0.09
Verbal	32.79	31.72	0.95	0.35	0.25
Writing	32.94	32.38	0.56	0.58	0.14
Quantitative	26.13	27.48	-0.96	0.34	-0.22

Table 14: T-Test Results by Gender

Variable	Mean (Male)	Mean (Female)	t	p	Cohen's d
CLT	92.44	90.52	1.26	0.21	0.17
Verbal	32.66	32.66	-0.01	0.99	0.00
Writing	32.51	33.19	-1.25	0.21	-0.16
Quantitative	27.64	25.10	3.28	0.00	0.43



Table 15: T-Test Results by Persistence

Variable	Mean (Persisted)	Mean (Withdrew)	t	p	Cohen's d
CLT	92.10	85.72	2.71	0.01	0.55
Verbal	32.89	30.76	2.12	0.04	0.50
Writing	33.02	31.60	1.42	0.17	0.35
Quantitative	26.57	24.04	1.94	0.06	0.42

Table 16: Pearson Correlation Matrix

Parameter 1	Parameter 2	r	t	CI Low	CI High	p
CLT	Verbal	0.81	21.29	0.76	0.85	1.39×10^{-55}
CLT	Writing	0.80	20.51	0.75	0.84	3.45×10^{-53}
CLT	Quant	0.81	20.80	0.76	0.85	4.43×10^{-54}
CLT	Year 1 GPA	0.37	6.02	0.25	0.47	2.03×10^{-8}
Verbal	Writing	0.67	13.77	0.59	0.73	4.21×10^{-31}
Verbal	Quant	0.42	7.02	0.31	0.52	1.46×10^{-10}
Verbal	Year 1 GPA	0.38	6.19	0.26	0.48	1.07×10^{-8}
Writing	Quant	0.41	6.90	0.30	0.51	2.50×10^{-10}
Writing	Year 1 GPA	0.31	5.01	0.19	0.42	2.18×10^{-6}
Quant	Year 1 GPA	0.24	3.72	0.11	0.35	2.46×10^{-4}

Table 17: Hierarchical Regression Predicting Year 1 GPA (Model 1)

Predictor	df	Model R^2	R^2 Increment	p of change	Direction
Trad Public + Gender	2, 232	0.07	0.07	0.00	NA
+ Verbal	1, 231	0.21	0.13	0.00	+
+ Quant	1, 230	0.22	0.02	0.02	+
+ Writing	1, 229	0.22	0.00	0.83	+

Table 18: Hierarchical Regression Predicting Year 1 GPA (Model 3)

Predictor	df	Model R^2	R^2 Increment	p of change	Direction
Verbal	1, 233	0.14	0.14	0.00	+
+ Quant	1, 232	0.15	0.01	0.15	+
+ Writing	1, 231	0.15	0.00	0.29	+