

# Understanding Students with Discrepant Critical Reading and Writing Scores

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# The Problem

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- Despite the similarities that literacy researchers have found between the cognitive processes and knowledge involved in both the acts of reading and writing, there are students who appear to be much stronger readers than writers and other students who appear to be much stronger writers than readers (Langer, 1986a, 1986b; Palmer, 1986; Thacker, 1990, 1991; Tierney, 1983).
- The addition of the writing section to the SAT provides a fitting opportunity to examine students with highly discrepant critical reading and writing scores and to understand the characteristics associated with stronger performance in critical reading versus stronger performance in writing.

# Background

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- Mattern et al. (2007) examined students with discrepant CR-W performance from 2006 College Bound Seniors cohort, which includes ~ 1.5 million students.
  - Results found that 3.7% (n = 50,336) were higher in critical reading and 3.6% (n = 49,356) higher in writing.
  - The Better at Writing group was comprised of almost twice as many females than males. Conversely, the Better at Critical Reading group had almost twice as many males than females.
  - The percentage of Asian students was higher in the Better at Writing group than the Better at Critical Reading group.
  - Finally, mean HSGPA was the highest for the Better at Writing group and lowest for the Better at Critical Reading group.

# Current Study

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- The intent of this study was to replicate and extend the work of Mattern et al. (2007).
- Specifically, determine whether there are distinct differences in the demographic characteristics, HSGPA, first-year college performance, and second-year college retention rates among students who have discrepant CR-W performance.

# Sample

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- 110 colleges participating in SAT Validity Study (N = 196,364)
  - Schools provided first year performance data for Fall 2006 cohort through the Admitted Class Evaluation Service™ (ACES™) portal
- Restrict sample to students who completed the new SAT, submitted self reported High School GPA, and had a valid FYGPA (N=150,377)

# Measures

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- **First-Year GPA (FYGPA).** Institutions provided FYGPA data. The range of FYGPA across institutions was 0.00 to 4.27.
- **First-Year English GPA (FY English GPA).** Institutions also supplied grades for all of the courses taken by their students during the 2006-2007 school year. All coursework was coded for the subject area of the course. The average grade for courses coded as English courses was computed.
- **Retention.** Institutions provided second year retention data.
- **SAT scores.** The SAT consists of three sections, critical reading, writing, and math. Each section is on a scale of 200 to 800. The student's most recent scores were used.
- **SAT-Questionnaire.** During registration for the SAT, students fill out a short questionnaire. From this questionnaire, HSGPA, ethnicity, gender, and best language spoken were obtained.

# How frequent are CR-W discrepancies?

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- Of the 150,377 students in the sample:
  - 3.3% ( $n = 4,993$ ) scored significantly higher on the critical reading section ( $>1$  SD) than writing section
  - 3.5% ( $n = 5,290$ ) scored significantly higher on the writing section ( $>1$  SD) than critical reading section.
  - Most of sample scored within one standard unit on the two SAT sections (93.2%).

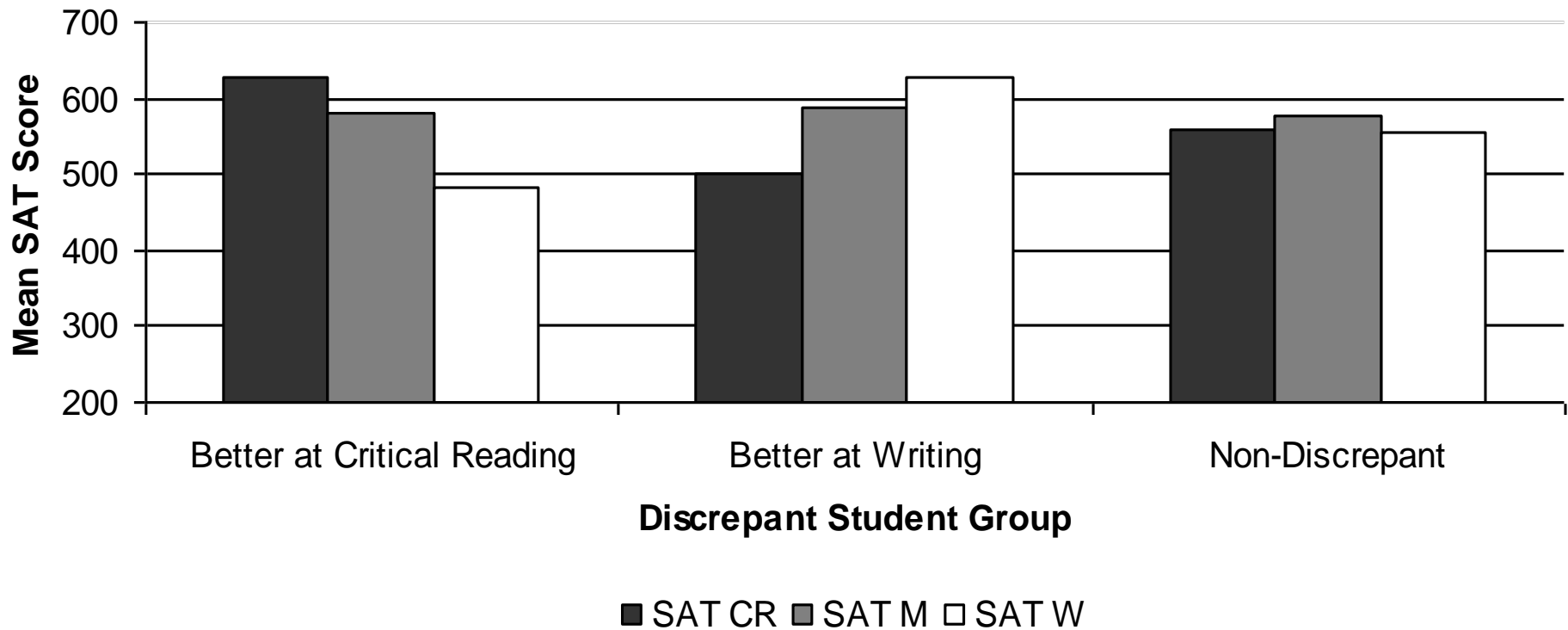
# Does Discrepant Group Membership vary by Student Characteristics?

Subgroup	n	Stronger on Critical Reading	Stronger on Writing	Non- Discrepant
Female	81,002	2.3	4.1	93.6
Male	69,375	4.5	2.8	92.7
American Indian	794	4.2	2.3	93.6
Asian	14,058	2.9	5.0	92.1
Black or African-American	10,243	3.6	3.0	93.4
Hispanic	10,599	3.0	3.5	93.5
Other	4,476	3.4	3.7	93.0
White	103,507	3.3	3.4	93.3
No Response	6,700	4.1	3.1	92.9
English	139,767	3.4	3.4	93.2
English and Another Another Language	7,361 1,678	2.6 1.5	4.9 7.9	92.5 90.6
No Response	1,571	3.4	3.0	93.6



# SAT Performance

## Performance on the SAT by Discrepant Student Group



# Grades in HS and College

Discrepant Group	HSGPA		FYGPA	
	Mean	SD	Mean	SD
Stronger on Critical Reading	3.53	0.52	2.86	0.75
Stronger on Writing	3.65	0.49	3.06	0.67
Non-Discrepant	3.61	0.50	2.98	0.71
Total	3.60	0.50	2.97	0.71

# Grades in English Courses

Discrepant Group	FY ENGLISH GPA		
	n	Mean	SD
Stronger on Critical	2,943	3.09	0.75
Stronger on Writing	3,413	3.26	0.68
Non-Discrepant	86,159	3.21	0.70
Total	92,515	3.21	0.70

# Second Year Retention Rates

Discrepant Group	Retention		
	n	Mean	SD
Stronger on Critical Reading	4,791	85.87	34.84
Stronger on Writing	4,993	88.82	31.51
Non-Discrepant	133,840	87.72	32.82
Total	143,624	87.70	32.84

# Predictive Validity

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To account for the variability across institutions, the following procedures were followed:

- (1) Compute separate correlations for each of the 3 discrepancy groups within institution
- (2) Apply a multivariate correction for restriction of range to each set of correlations separately; and
- (3) Compute a set of average correlations, weighted by the respective sample size.

# Correlations of Predictors with FYGPA

	Stronger on Critical Reading	Stronger on Writing	Non- Discrepant
1. HSGPA	0.47	0.53	0.54
2. SAT CR	0.38	0.50	0.48
3. SAT M	0.36	0.49	0.47
4. SAT W	0.40	0.49	0.51
5. SAT M, SAT CR	0.40	0.53	0.52
6. SAT CR, SAT W	0.41	0.51	0.52
7. SAT M, SAT W	0.41	0.53	0.53
8. HSGPA, SAT M, SAT CR	0.51	0.61	0.61
9. HSGPA, SAT CR, SAT W	0.51	0.61	0.62
10. HSGPA, SAT M, SAT W	0.51	0.61	0.62
11. SAT CR, SAT M, SAT W	0.41	0.54	0.54
12. HSGPA, SAT CR, SAT M, SAT W	0.51	0.61	0.62

# Correlations of Predictors with FY English GPA

	Stronger on Critical Reading	Stronger on Writing	Non- Discrepant
1. HSGPA	0.39	0.42	0.43
2. SAT CR	0.30	0.40	0.39
3. SAT M	0.26	0.36	0.34
4. SAT W	0.33	0.41	0.43
5. SAT M, SAT CR	0.30	0.41	0.40
6. SAT CR, SAT W	0.33	0.42	0.43
7. SAT M, SAT W	0.33	0.42	0.43
8. HSGPA, SAT M, SAT CR	0.41	0.48	0.48
9. HSGPA, SAT CR, SAT W	0.42	0.49	0.50
10. HSGPA, SAT M, SAT W	0.42	0.48	0.50
11. SAT CR, SAT M, SAT W	0.33	0.43	0.43
12. HSGPA, SAT CR, SAT M, SAT W	0.42	0.49	0.50

# Discussion

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- A primary contribution of this research is that it is the first study to examine the academic consequences of discrepant reading and writing performance in higher education.
- Results revealed that Stronger on Writing students had the highest college outcomes whereas Stronger on Critical Reading students had the lowest.
- Interpretations



# Discussion

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- Of note, students reporting their best language to be other than English had the highest percentage of discrepant students.
  - It appears that issues of bi-literacy or the transfer of literacy processing skills from students' first language to English may play a role in discrepant reading and writing performance.
  - Holm and Dodd (1996) found that students from non-alphabetic written language backgrounds will likely have difficulties with new or unfamiliar words when attending universities where English is the medium of instruction.

# Future Research

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- It would be interesting to study the role of first and best language in discrepant reading and writing performance.
- Another area for future research is whether there may be some high schools that cultivate discrepant performance by focusing on different areas of English Language Arts in the curriculum more than others.
- Another interesting future study in this area is related to the definitions of discrepant performance.

# Future Research

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- Also, because the SAT consistently showed lower predictive validity for the outcomes in the study for the Stronger on Critical Reading group compared to the Stronger on Writing Group, it would be useful to explore why this might be so.
  - It would also be useful to examine the relationship between having discrepant SAT critical reading and writing scores and more distal academic outcomes.
- Finally, it would be worthwhile to explore whether reading and writing self-efficacy interventions such as modeling, goal setting, and progress feedback in the weaker domain may be useful in building up performance in the weaker area, particularly because the student has excelled and developed a strong foundation in a highly related domain.

# Conclusion

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- The results from this study clearly show that the critical reading and writing sections provide unique, and relevant information about students' knowledge, skills, and abilities in two related domains.
- The addition of the writing section to SAT provides another dimension on which to evaluate a student's college readiness.

# Thank You!

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