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ABSTRACT

As is consistent with national trends, the Montgomery County (Maryland) Public School System is exploring the use of instruments other than multiple-choice tests for high-stakes testing. This paper presents information on racial, ethnic, and gender differences in performance on the various types of tests being administered in the district. Sharing such information among school systems will help in the evaluation of new types of assessment. The six assessments used in the study were: (1) a mathematics multiple choice test given to grades 3 to 8; (2) a mathematics short answer test for grades 3 to 8; (3) a locally developed mathematics extended answer test for grades 4, 6, and 7; (4) a reading multiple choice test for grades 3 to 8; (5) a language arts extended answer test for grades 4, 6, and 7; and (6) the Maryland School Performance Assessment program for grades 3, 5, and 8. There were no meaningful differences in mathematics performance by racial and ethnic group across the different types of test studied. Nonmultiple-choice reading and language arts assessments favored nonwhite students. Nonmultiple-choice tests, whether in mathematics or language arts and reading, favored females over males. The largest difference between students on reduced-cost or free meals and others was in reading and language arts, where lower income students had substantially larger gains when moving from multiple-choice to nonmultiple-choice assessments. (Contains one reference and three tables.) (SLD)

Performance on Different Test Types By Racial\Ethnic Group and Gender

N. James Myerberg
Montgomery County (Md.) Public Schools

Paper presented at the annual meeting of
The American Educational Research Association in April 1996
in New York

Performance on Different Test Types
by Racial\Ethnic Group and Gender

> "Machine-scorable, group administered, standardized tests are widely used to monitor and report student achievement to the public, to inform broad educational policy, and as a mechanism for school and teacher accountability." (Bond, 1995)

This statement has applied to standardized tests in the Montgomery County Public Schools (MCPS) for at least three decades. Starting in the late 1970's this use has included breakdowns of the results by racial\ethnic group and by gender. Review of test reports from other districts and conversations with district testing and research directors indicates that we are not alone in using test results in this way.

Consistent with the movement across the country, MCPS is exploring the use of non-multiple choice instruments for high stakes testing. As we begin to get data from these assessments one of the issues we are addressing is the effect of different modes of assessment on the reported group differences. If the differences change, or even if they remain the same, is that real or is it a function of the new instruments? One way for districts like ours to evaluate this effect is to see what is happening in other districts. This paper has two purposes -- 1) to present racial\ethnic and gender data comparing performance on various types of assessments, and 2) to promote the sharing of such data among districts. While many variables need to be considered when comparing such data across districts, the first step is simply to make the data available.

Description of the Assessments and Population

The six assessments used in this study are described below.

Math Multiple Choice (MMC) was administered in Grades 3 to 8 and was locally developed. The number of questions varied by grade from 33 to 43.

Math Short Answer (MSA) was administered in Grades 3 to 8. The instruments used in Grades 4 and 6 were the Mathematics Goals Tests developed by the Psychological Corporation. The instruments used in the other grades were locally developed. All of these instruments had 10 questions, each scored from 0 to 3. The total score (maximum 30 points) is used in the analysis.

Math Extended Answer (MEA) was administered in Grades 4, 6, and 7 and was locally developed. The instrument was one multi-step activity scored holistically from 0 to 6.

Reading Multiple Choice (RMC) was administered in Grades 3 to 8. It is the short version of the Reading Comprehension section of the Metropolitan Achievement Test, 7th Edition, published by the Psychological Corporation. It contains 30 questions related to six reading passages in each grade.

Language Arts Extended Answer (LEA) was administered in Grades 4, 6, and 7. It is part of the Language Arts Performance Assessment series published by the Psychological Corporation. At each grade there is one reading and writing activity that is scored from 0 to 4 on each of three domains. For this study, the domain scores will be added to get a total score (maximum 12 points) to simplify the analysis.

Maryland School Performance Assessment Program (MSP) was administered in Grades 3, 5, and 8. It was developed by the state of Maryland and measures six subject areas. Only the mathematics, reading, and writing scores will be used in this study. The test is a combination of short and extended answer items with a 3-digit scale score being reported for each subject.

All of these tests were administered in the spring of 1995 in all schools in the district.

The Montgomery County Public Schools are a large suburban school district that has been near the upper end of the socio-economic scale. However, in recent years the population has started becoming more diverse.

Data Analysis

Each instrument used in this study had a different mean and standard deviation. These statistics are presented in Table 1 with the correlations between the instruments. The different statistics for each instrument made it necessary to standardize the scores to be able to compare group differences. This was done by expressing each student's score on each test in standard deviation units (z-scores). The transformation for each score, X, was done with the following formula.

$$z = (X - \text{Mean})\backslash\text{Standard Deviation}$$

This created score distributions for each instrument that had a mean of 0 and a standard deviation of 1.

Racial group test score differences are often found to be related to socio-economic variables. The only such variable that was available for the students in this study was participation in the federal Free or Reduced Meals (FRMS) program. The effect of this participation on the assessment results being studied is included in this paper.

Results

The mean z-scores for each racial\ethnic group and gender are presented in Table 2. There are two sets of data in this table because different grades took different sets of tests. Similar data are presented in Table 3 broken out by students who did and did not participate in the FRMS program. For the analyses discussed below, the mean scores presented in Tables 2 and 3 have been averaged across grade levels to minimize the possible chance effect of one test at one grade level. These summary averages are presented in tables headed "Table 2 Summary" and "Table 3 Summary".

Math -- There were no meaningful differences in math performance by racial\ethnic group across the different types of tests studied. The largest difference in average z-score for a group was for Asian Americans whose MSP score was .14 points lower than their multiple choice score. This was also the group and instruments that had the largest difference between students in FRMS and not in FRMS. The Asian Americans in FRMS had a .28 point decline going from multiple choice to MSP while the group not in FRMS had only a .11 decline. All the other differences between FRMS and non-FRMS groups were .10 or less.

The largest difference in scores by gender was .08 from multiple choice to MSP. While this difference was not especially large, it should be noted that, for all non-multiple choice instruments, scores for females increased over their multiple choice scores while scores for males were lower on non-multiple choice assessments.

Reading\Language Arts -- The score differences from multiple choice to non-multiple choice reading\language arts displayed a clear trend. In all cases, the average z-scores for non-White students increased while the averages for White students decreased. This meant the differences between the non-White and White groups all became smaller. To put these trends in perspective, it should be noted that the largest difference was from the multiple choice to MSP writing where the average for African Americans went up .19 points and the average for Whites went down .09 points. Thus, the largest change in group differences was between one-quarter and one-third of a standard deviation.

The trends showing declines in the White\non-White differences were consistent for both FRMS and non-FRMS students. However, the trends toward higher non-multiple choice scores were stronger for the FRMS group where there was an overall .23 point gain from multiple choice to MSP writing. This was led by a .31 difference for African American students.

The largest differences in reading\language arts scores by gender were .10 from multiple choice to MSP writing and reading extended answer. In all cases the average score increased for females and decreased for males when going from multiple choice to some other format.

Summary and Discussion

There were three trends of note in the data presented in this paper.

Non-multiple choice reading\language arts (R\LA) assessments favored non-White students. All three non-White groups in the study had higher scores on the non-multiple choice R\LA instruments than on the multiple choice. White students had lower non-multiple choice scores. This trend of non-multiple choice R\LA tests favoring non-White students was the same for students participating in FRMS and those not participating.

Non-multiple choice tests favored females to males. For all math and R\LA assessments, females scored higher on the non-multiple choice versions than on the multiple choice. For males the trend was reversed.

The largest difference between FRMS and non-FRMS students was in R\LA where the FRMS students had substantially larger gains when moving from multiple choice to non-multiple choice assessments.

The limited number of instruments reported here as well as the fact that students from only one school district were included clearly means that the results are not generalizable. In fact, the trends for the R\LA tests are not consistent with those reported for the National Assessment of Educational Progress (Bond, 1995). We need similar reports on other tests, different populations, and additional socio-economic variables.

References

Bond, L. (1995). Unintended Consequences of Performance Assessment: Issues of Bias and Fairness. *Educational Measurement: Issues and Practice, 14,* 21-24.

Table 1
Statistics for the Tests Used to Compare Racial/Ethnic Groups and Gender Results

Test	Mean	Standard Deviation	Correlations MSA	MEA	RMC	REA
Grade 4 (N=8007)						
Math Multiple Choice (MMC)	28.69	6.44	.76	.73	.66	.61
Math Short Answer (MSA)	19.74	6.51		.72	.65	.60
Math Extended Answer (MEA)	3.66	1.51			.61	.56
Reading Multiple Choice (RMC)	21.67	6.02				.62
Reading Extended Answer (REA)	8.80	2.15				
Grade 6 (N=7367)						
Math Multiple Choice (MMC)	30.77	7.95	.79	.72	.66	.56
Math Short Answer (MSA)	20.94	6.64		.70	.66	.56
Math Extended Answer (MEA)	3.48	1.70			.60	.51
Reading Multiple Choice (RMC)	21.80	5.22				.56
Reading Extended Answer (REA)	7.43	2.20				
Grade 7 (N=7328)						
Math Multiple Choice (MMC)	27.46	7.72	.82	.74	.66	.58
Math Short Answer (MSA)	16.57	8.16		.76	.65	.59
Math Extended Answer (MEA)	2.96	1.61			.58	.53
Reading Multiple Choice (RMC)	22.01	5.62				.57
Reading Extended Answer (REA)	7.74	2.21				

Test	Mean	Standard Deviation	Correlations MSA	MSP Math	RMC	MSP Reading	MSP Writing
Grade 3 (N=7352)							
Math Multiple Choice (MMC)	26.68	6.45	.80	.67	.65	.55	.43
Math Short Answer (MSA)	19.45	6.84		.72	.68	.59	.47
MSP Math	535.80	45.21			.65	.63	.49
Reading Multiple Choice (RMC)	19.50	6.40				.62	.47
MSP Reading	522.19	42.50					.51
MSP Writing	526.11	50.09					
Grade 5 (N=7049)							
Math Multiple Choice (MMC)	25.31	7.13	.84	.71	.64	.52	.45
Math Short Answer (MSA)	18.59	7.80		.73	.66	.55	.48
MSP Math	530.72	48.91			.62	.58	.51
Reading Multiple Choice (RMC)	22.70	5.47				.55	.47
MSP Reading	517.52	40.47					.52
MSP Writing	513.34	55.23					
Grade 8 (N=5705)							
Math Multiple Choice (MMC)	23.01	6.34	.82	.72	.66	.54	.50
Math Short Answer (MSA)	14.97	6.99		.72	.65	.56	.53
MSP Math	535.59	46.15			.66	.61	.56
Reading Multiple Choice (RMC)	22.28	5.99				.58	.51
MSP Reading	521.27	31.58					.63
MSP Writing	506.81	49.38					

TABLE 2

AVERAGE STANDARDIZED SCORES BY RACIAL/ETHNIC GROUP AND GENDER
GRADES 3, 5, AND 8

GRADE	GROUP	NUMBER	MATH MULTIPLE CHOICE	MATH SHORT ANSWER	MSP MATH	READING MULTIPLE CHOICE	MSP READING	MSP WRITING
3	AFRICAN AMERICAN	1238	-.80	-.79	-.74	-.66	-.54	-.45
	ASIAN AMERICAN	869	.29	.21	.16	.10	.11	.15
	HISPANIC	596	-.57	-.60	-.60	-.59	-.52	-.37
	WHITE	4634	.23	.25	.25	.23	.19	.14
	FEMALE	3652	-.04	-.01	.04	.07	.11	.13
	MALE	3700	.04	.01	-.04	-.07	-.11	-.12
	TOTAL	7352	.00	.00	.00	.00	.00	.00
5	AFRICAN AMERICAN	1179	-.80	-.79	-.74	-.66	-.55	-.46
	ASIAN AMERICAN	913	.36	.30	.21	.12	.21	.19
	HISPANIC	602	-.57	-.58	-.57	-.53	-.46	-.48
	WHITE	4338	.22	.23	.24	.23	.17	.15
	FEMALE	3429	-.05	-.01	.02	.05	.16	.13
	MALE	3620	.04	.01	-.02	-.05	-.15	-.13
	TOTAL	7049	.00	.00	.00	.00	.00	.00
8	AFRICAN AMERICAN	1012	-.74	-.76	-.70	-.67	-.50	-.50
	ASIAN AMERICAN	829	.36	.36	.24	.07	.24	.23
	HISPANIC	527	-.54	-.57	-.56	-.55	-.37	-.41
	WHITE	3329	.22	.23	.24	.28	.15	.16
	FEMALE	2793	-.02	.03	.05	.06	.17	.23
	MALE	2912	.02	-.03	-.05	-.06	-.17	-.22
	TOTAL	5705	.00	.00	.00	.00	.00	.00

TABLE 2

AVERAGE STANDARDIZED SCORES BY RACIAL/ETHNIC GROUP AND GENDER
GRADES 4, 6, AND 7

GRADE	GROUP	NUMBER	MATH MULTIPLE CHOICE	MATH SHORT ANSWER	MATH EXTENDED ANSWER	READING MULTIPLE CHOICE	READING EXTENDED ANSWER
4	AFRICAN AMERICAN	1414	-.68	-.70	-.62	-.60	-.53
	ASIAN AMERICAN	903	.26	.16	.19	.03	.17
	HISPANIC	715	-.53	-.61	-.51	-.58	-.52
	WHITE	4960	.22	.26	.22	.25	.20
	FEMALE	3975	.00	.01	.01	.07	.15
	MALE	4032	.00	-.01	-.01	-.07	-.15
	TOTAL	8007	.00	.00	.00	.00	.00
6	AFRICAN AMERICAN	1403	-.74	-.74	-.64	-.64	-.51
	ASIAN AMERICAN	887	.43	.33	.23	.15	.16
	HISPANIC	720	-.58	-.62	-.48	-.48	-.40
	WHITE	4340	.25	.27	.24	.26	.20
	FEMALE	3661	.01	.02	.02	.07	.13
	MALE	3706	-.01	-.02	-.02	-.07	-.13
	TOTAL	7367	.00	.00	.00	.00	.00
7	AFRICAN AMERICAN	1463	-.68	-.65	-.57	-.65	-.51
	ASIAN AMERICAN	977	.44	.38	.39	.06	.23
	HISPANIC	665	-.58	-.58	-.52	-.54	-.46
	WHITE	4203	.23	.23	.19	.30	.20
	FEMALE	3713	.00	.02	.04	.05	.19
	MALE	3615	.00	-.02	-.04	-.05	-.20
	TOTAL	7328	.00	.00	.00	.00	.00

TABLE 2 SUMMARY

AVERAGE STANDARDIZED SCORES BY RACIAL/ETHNIC GROUP AND GENDER
GRADES 3, 5, AND 8

GROUP	NUMBER	MATH MULTIPLE CHOICE	MATH SHORT ANSWER	MSP MATH	READING MULTIPLE CHOICE	MSP READING	MSP WRITING
AFRICAN AMERICAN	3429	-.78	-.78	-.73	-.66	-.53	-.47
ASIAN AMERICAN	2611	.34	.29	.20	.10	.18	.19
HISPANIC	1725	-.56	-.58	-.57	-.56	-.45	-.42
WHITE	12301	.23	.24	.24	.24	.17	.15
FEMALE	9874	-.04	.00	.04	.06	.14	.16
MALE	10232	.04	.00	-.04	-.06	-.14	-.15
TOTAL	20106	.00	.00	.00	.00	.00	.00

TABLE 2 SUMMARY

AVERAGE STANDARDIZED SCORES BY RACIAL/ETHNIC GROUP AND GENDER
GRADES 4, 6, AND 7

GROUP	NUMBER	MATH MULTIPLE CHOICE	MATH SHORT ANSWER	MATH EXTENDED ANSWER	READING MULTIPLE CHOICE	READING EXTENDED ANSWER
AFRICAN AMERICAN	4280	-.70	-.69	-.61	-.63	-.52
ASIAN AMERICAN	2767	.38	.29	.27	.08	.19
HISPANIC	2100	-.56	-.60	-.51	-.54	-.46
WHITE	13503	.23	.26	.22	.27	.20
FEMALE	11349	.00	.01	.02	.06	.16
MALE	11353	.00	-.01	-.02	-.06	-.16
TOTAL	22702	.00	.00	.00	.00	.00

TABLE 3

AVERAGE STANDARDIZED SCORES BY RACIAL/ETHNIC GROUP AND GENDER
GRADES 3, 5, AND 8 - STUDENTS RECEIVING FREE OR REDUCED PRICED MEALS

GRADE	GROUP	NUMBER	MATH MULTIPLE CHOICE	MATH SHORT ANSWER	MSP MATH	READING MULTIPLE CHOICE	MSP READING	MSP WRITING
3	AFRICAN AMERICAN	623	-1.07	-1.03	-.94	-.86	-.75	-.57
	ASIAN AMERICAN	153	-.04	-.20	-.31	-.27	-.32	-.14
	HISPANIC	347	-.81	-.85	-.88	-.88	-.79	-.57
	WHITE	288	-.36	-.41	-.46	-.49	-.46	-.41
	FEMALE	719	-.80	-.77	-.72	-.67	-.53	-.38
	MALE	694	-.70	-.77	-.80	-.79	-.77	-.61
	TOTAL	1413	-.75	-.77	-.76	-.73	-.65	-.49
5	AFRICAN AMERICAN	556	-1.05	-1.02	-.95	-.94	-.71	-.59
	ASIAN AMERICAN	183	.04	-.04	-.29	-.35	-.10	-.16
	HISPANIC	350	-.80	-.81	-.81	-.81	-.66	-.67
	WHITE	285	-.47	-.47	-.38	-.46	-.39	-.39
	FEMALE	703	-.74	-.70	-.67	-.65	-.38	-.37
	MALE	675	-.71	-.75	-.75	-.81	-.73	-.65
	TOTAL	1378	-.72	-.72	-.71	-.73	-.55	-.51
8	AFRICAN AMERICAN	391	-.97	-.97	-.95	-.97	-.75	-.71
	ASIAN AMERICAN	136	-.07	-.12	-.28	-.70	-.27	-.20
	HISPANIC	266	-.83	-.81	-.79	-.88	-.60	-.64
	WHITE	162	-.57	-.47	-.51	-.50	-.45	-.41
	FEMALE	469	-.82	-.76	-.72	-.83	-.49	-.39
	MALE	487	-.66	-.68	-.75	-.82	-.68	-.73
	TOTAL	956	-.74	-.72	-.74	-.83	-.59	-.56

TABLE 3

AVERAGE STANDARDIZED SCORES BY RACIAL/ETHNIC GROUP AND GENDER
GRADES 3, 5, AND 8 - STUDENTS NOT RECEIVING FREE OR REDUCED PRICED MEALS

GRADE	GROUP	NUMBER	MATH MULTIPLE CHOICE	MATH SHORT ANSWER	MSP MATH	READING MULTIPLE CHOICE	MSP READING	MSP WRITING
3	AFRICAN AMERICAN	615	-.53	-.54	-.53	-.44	-.32	-.32
	ASIAN AMERICAN	716	.36	.30	.26	.18	.20	.21
	HISPANIC	249	-.24	-.25	-.21	-.17	-.14	-.09
	WHITE	4346	.27	.30	.29	.28	.23	.18
	FEMALE	2933	.14	.18	.23	.25	.27	.25
	MALE	3006	.21	.19	.13	.10	.04	-.01
	TOTAL	5939	.18	.18	.18	.17	.15	.12
5	AFRICAN AMERICAN	623	-.58	-.59	-.56	-.41	-.41	-.35
	ASIAN AMERICAN	730	.44	.38	.34	.24	.28	.28
	HISPANIC	252	-.24	-.25	-.23	-.14	-.18	-.22
	WHITE	4053	.27	.28	.28	.28	.21	.19
	FEMALE	2726	.13	.17	.20	.23	.29	.26
	MALE	2945	.22	.18	.15	.13	-.01	.00
	TOTAL	5671	.18	.18	.17	.18	.13	.12
8	AFRICAN AMERICAN	621	-.60	-.63	-.54	-.49	-.34	-.36
	ASIAN AMERICAN	693	.44	.46	.34	.22	.34	.31
	HISPANIC	261	-.24	-.32	-.32	-.22	-.15	-.17
	WHITE	3167	.26	.27	.28	.32	.18	.19
	FEMALE	2324	.14	.19	.20	.25	.31	.35
	MALE	2425	.16	.11	.09	.09	-.06	-.12
	TOTAL	4749	.15	.14	.15	.17	.12	.11

TABLE 3

AVERAGE STANDARDIZED SCORES BY RACIAL/ETHNIC GROUP AND GENDER
GRADES 4, 6, AND 7 - STUDENTS RECEIVING FREE OR REDUCED PRICED MEALS

GRADE	GROUP	NUMBER	MATH MULTIPLE CHOICE	MATH SHORT ANSWER	MATH EXTENDED ANSWER	READING MULTIPLE CHOICE	READING EXTENDED ANSWER
4	AFRICAN AMERICAN	682	-.96	-.94	-.85	-.89	-.75
	ASIAN AMERICAN	200	-.14	-.34	-.26	-.48	-.21
	HISPANIC	421	-.76	-.85	-.76	-.85	-.75
	WHITE	329	-.44	-.41	-.37	-.43	-.39
	FEMALE	792	-.71	-.73	-.64	-.65	-.45
	MALE	845	-.70	-.74	-.68	-.82	-.76
	TOTAL	1637	-.70	-.74	-.66	-.74	-.61
6	AFRICAN AMERICAN	670	-1.01	-1.00	-.88	-.95	-.77
	ASIAN AMERICAN	195	.02	-.10	-.17	-.46	-.33
	HISPANIC	416	-.75	-.86	-.66	-.74	-.57
	WHITE	312	-.40	-.44	-.35	-.43	-.46
	FEMALE	825	-.70	-.75	-.63	-.62	-.48
	MALE	772	-.69	-.73	-.63	-.85	-.72
	TOTAL	1597	-.69	-.74	-.63	-.73	-.60
7	AFRICAN AMERICAN	601	-.96	-.90	-.80	-.94	-.75
	ASIAN AMERICAN	210	-.07	-.23	-.17	-.60	-.31
	HISPANIC	408	-.80	-.78	-.69	-.81	-.67
	WHITE	254	-.54	-.50	-.53	-.35	-.41
	FEMALE	762	-.68	-.69	-.59	-.70	-.43
	MALE	715	-.76	-.72	-.67	-.82	-.80
	TOTAL	1477	-.72	-.71	-.63	-.75	-.60

TABLE 3

AVERAGE STANDARDIZED SCORES BY RACIAL/ETHNIC GROUP AND GENDER
GRADES 4, 6, AND 7 - STUDENTS NOT RECEIVING FREE OR REDUCED PRICED MEALS

GRADE	GROUP	NUMBER	MATH MULTIPLE CHOICE	MATH SHORT ANSWER	MATH EXTENDED ANSWER	READING MULTIPLE CHOICE	READING EXTENDED ANSWER
4	AFRICAN AMERICAN	732	-.42	-.47	-.40	-.33	-.33
	ASIAN AMERICAN	703	.38	.30	.31	.18	.28
	HISPANIC	294	-.20	-.28	-.15	-.21	-.19
	WHITE	4631	.27	.31	.26	.30	.24
	FEMALE	3183	.18	.19	.17	.24	.30
	MALE	3187	.18	.19	.17	.13	.01
	TOTAL	6370	.18	.19	.17	.19	.16
6	AFRICAN AMERICAN	733	-.48	-.49	-.43	-.36	-.28
	ASIAN AMERICAN	692	.54	.45	.34	.32	.30
	HISPANIC	304	-.35	-.29	-.24	-.13	-.18
	WHITE	4028	.30	.33	.29	.31	.25
	FEMALE	2836	.22	.24	.21	.28	.30
	MALE	2934	.17	.17	.14	.13	.03
	TOTAL	5770	.19	.21	.18	.20	.17
7	AFRICAN AMERICAN	862	-.48	-.48	-.42	-.44	-.35
	ASIAN AMERICAN	767	.58	.55	.54	.25	.37
	HISPANIC	257	-.22	-.26	-.26	-.12	-.14
	WHITE	3949	.28	.28	.24	.34	.24
	FEMALE	2951	.18	.20	.20	.24	.35
	MALE	2900	.19	.16	.12	.14	-.05
	TOTAL	5851	.18	.18	.16	.19	.15

TABLE 3 SUMMARY

AVERAGE STANDARDIZED SCORES BY RACIAL/ETHNIC GROUP AND GENDER
GRADES 3, 5, AND 8 - STUDENTS RECEIVING FREE OR REDUCED PRICED MEALS

GROUP	NUMBER	MATH MULTIPLE CHOICE	MATH SHORT ANSWER	MSP MATH	READING MULTIPLE CHOICE	MSP READING	MSP WRITING
AFRICAN AMERICAN	1570	-1.04	-1.01	-.95	-.92	-.73	-.61
ASIAN AMERICAN	472	-.02	-.12	-.30	-.42	-.22	-.17
HISPANIC	963	-.81	-.83	-.83	-.86	-.69	-.62
WHITE	735	-.45	-.45	-.44	-.48	-.43	-.40
FEMALE	1891	-.78	-.74	-.70	-.71	-.47	-.38
MALE	1856	-.69	-.74	-.77	-.80	-.73	-.65
TOTAL	3747	-.74	-.74	-.74	-.75	-.60	-.52

TABLE 3 SUMMARY

AVERAGE STANDARDIZED SCORES BY RACIAL/ETHNIC GROUP AND GENDER
GRADES 3, 5, AND 8 - STUDENTS NOT RECEIVING FREE OR REDUCED PRICED MEALS

GROUP	NUMBER	MATH MULTIPLE CHOICE	MATH SHORT ANSWER	MSP MATH	READING MULTIPLE CHOICE	MSP READING	MSP WRITING
AFRICAN AMERICAN	1859	-.57	-.59	-.54	-.45	-.36	-.35
ASIAN AMERICAN	2139	.42	.38	.31	.21	.27	.27
HISPANIC	762	-.24	-.28	-.25	-.18	-.16	-.16
WHITE	11566	.27	.28	.28	.29	.21	.18
FEMALE	7983	.14	.18	.21	.24	.29	.29
MALE	8376	.20	.16	.13	.11	-.01	-.04
TOTAL	16359	.17	.17	.17	.17	.14	.12

TABLE 3 SUMMARY

AVERAGE STANDARDIZED SCORES BY RACIAL/ETHNIC GROUP AND GENDER
GRADES 4, 6, AND 7 - STUDENTS RECEIVING FREE OR REDUCED PRICED MEALS

GROUP	NUMBER	MATH MULTIPLE CHOICE	MATH SHORT ANSWER	MATH EXTENDED ANSWER	READING MULTIPLE CHOICE	READING EXTENDED ANSWER
AFRICAN AMERICAN	1953	-.98	-.95	-.85	-.93	-.76
ASIAN AMERICAN	605	-.06	-.23	-.20	-.52	-.28
HISPANIC	1245	-.77	-.83	-.71	-.80	-.66
WHITE	895	-.45	-.45	-.41	-.41	-.42
FEMALE	2379	-.70	-.72	-.62	-.65	-.45
MALE	2332	-.71	-.73	-.66	-.83	-.76
TOTAL	4711	-.70	-.73	-.64	-.74	-.61

TABLE 3 SUMMARY

AVERAGE STANDARDIZED SCORES BY RACIAL/ETHNIC GROUP AND GENDER
GRADES 4, 6, AND 7 - STUDENTS NOT RECEIVING FREE OR REDUCED PRICED MEALS

GROUP	NUMBER	MATH MULTIPLE CHOICE	MATH SHORT ANSWER	MATH EXTENDED ANSWER	READING MULTIPLE CHOICE	READING EXTENDED ANSWER
AFRICAN AMERICAN	2327	-.46	-.48	-.42	-.38	-.32
ASIAN AMERICAN	2162	.50	.43	.40	.25	.32
HISPANIC	855	-.26	-.28	-.21	-.15	-.17
WHITE	12608	.28	.31	.26	.31	.24
FEMALE	8970	.19	.21	.19	.25	.32
MALE	9021	.18	.17	.15	.14	.00
TOTAL	17991	.18	.19	.17	.19	.16

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