

Course Taking and SAT Scores of African American and Hispanic Students in the MCPS Classes of 2001 to 2005

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Background

An examination of the SAT results for Montgomery County Public Schools (MCPS) found that SAT scores of African American and Hispanic students have remained flat over the past five years. During the same time, SAT participation of these students has increased significantly (Von Secker, 2005a). One question raised by district leaders working to improve SAT participation and performance of African American and Hispanic SAT test takers is whether these students have completed the rigorous coursework that best prepares them for the SAT and college (College Board, 2004).

Course completion is highly predictive of SAT mean performance even after taking into account longstanding demographic differences in SAT performance (Nettles, Millett, & Ready, 2003; Von Secker, 2005b). This brief examines SAT participation, performance, and course taking patterns of African American and Hispanic students in the MCPS Classes of 2001 to 2005.

Methodology

The sample used for this analysis was drawn from diploma-bound seniors who were enrolled in June of 2001 to 2005. Student information was gathered from MCPS records. Most African American and Hispanic students who took the SAT did so at the end of Grade 11 (30%) or the beginning of Grade 12 (60%). For this reason, student preparation was measured as the highest level of English or mathematics completed by the end of Grade 11.

Results

Participation

Over the past five years, the greatest gains in SAT participation have been among African American and Hispanic students who, by the end of Grade 11, had completed English and mathematics courses below the level of English 11 or Algebra 2, respectively.

More than one third of African American and Hispanic students in the Class of 2005 who completed English 10 or lower by the end of Grade 11 took the SAT. Of students in the Class of 2005 who completed only Geometry or Algebra 1 by the end of Grade 11, 43% and 20%, respectively, took the SAT (Figure 1).

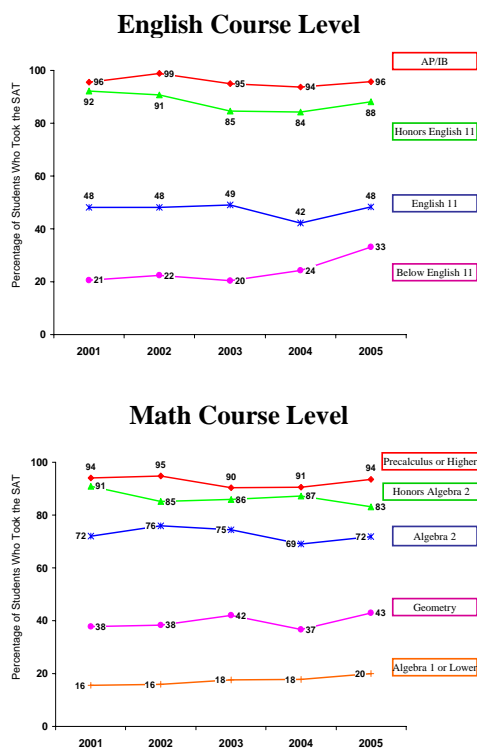


Figure 1. Percentage of African American and Hispanic students in the MCPS Classes of 2001 to 2005 who took the SAT by most advanced English or mathematics course completed by the end of Grade 11.

Performance

Over the past five years, the number of African American and Hispanic students who attained SAT verbal or math scores of 550 or higher has more than doubled from (Table 1). Most students with SAT verbal or math scores of 550 or higher completed

AP/IB English and Precalculus or higher by the end of Grade 11.

Table 1
Number of African American and Hispanic Students With SAT Verbal or Math Scores of 550 or Higher by Graduating Class

SAT Subtest	2001	2002	2003	2004	2005
Verbal	307	317	346	402	453
Math	312	348	393	392	469

Course taking was associated with differences in SAT scores for all test takers. For African American and Hispanic students in the Classes of 2001 to 2005, SAT verbal or math scores improved, overall, by more than 70 points for each one-level increase in English or mathematics course taking rigor (Figure 2).

In 2005, SAT mean verbal scores of students who completed Honors English 11 were 83 points higher than those of students who completed English 11 and 133 points higher than those who completed English below the level of English 11 (Figure 2).

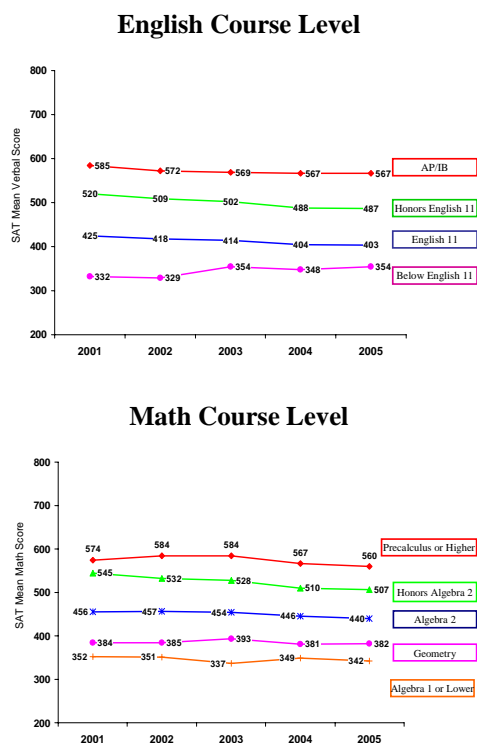


Figure 2. SAT mean scores of African American and Hispanic students in the MCPS Classes of 2001 to 2005 by most advanced English or mathematic course completed by the end of Grade 11.

In 2005, SAT mean math scores of students who completed Algebra 2 were 58 points higher than those of students who completed Geometry and 98 points higher than those completed Algebra 1 or below (Figure 2).

Course Taking

Over the past five years, African American and Hispanic enrollment in rigorous English and mathematics courses has increased (Figure 3). More than one third (36%) of African American and Hispanic students in the MCPS Class of 2005 completed Honors or AP/IB level English by the end of Grade 11, compared with one fifth (21%) of the Class of 2001. Twenty-five percent of African American and Hispanic students in the MCPS Class of 2005 completed Honors Algebra 2 or higher by the end of Grade 11, compared with 15% of the Class of 2001.

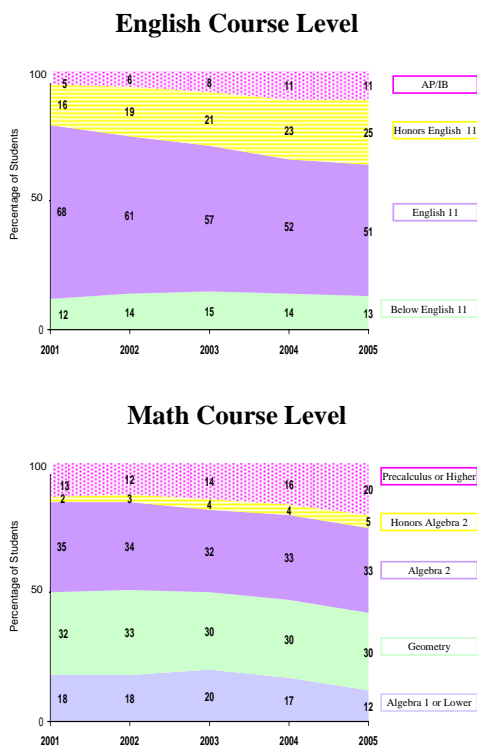


Figure 3. Percentage of African American and Hispanic students in the MCPS Classes of 2001 to 2005 by most advanced English or mathematic course completed by the end of Grade 11.

Discussion

More college-bound African American and Hispanic students should be encouraged complete the rigorous English and mathematics courses that are important for their success on the SAT. The average SAT

verbal or math scores associated with a course level are expected to decline as students with a wider range of ability levels enroll in them because course taking alone is not a guarantee of SAT success. The benefits students receive from more rigorous courses depend in part on factors such as motivation and effort. But the relationship between course taking and SAT performance is evident. Unless students embrace the challenges of more rigorous courses, they are unlikely to attain SAT verbal or math scores of 550 or higher.

This information and the disaggregated data provided in the four attached tables can be used by district leaders and others to show the importance of course taking as a gateway to improved SAT performance and success in college or the workplace.

References

- Nettles, M. T., Millett, C., & Ready, D. D. (2003). Attacking the African American-white achievement gap on college admissions tests. *Brookings Papers on Education Policy: 2003*, 215–252.
- Von Secker, C. (2005a). *An examination of the SAT results for the class of 2005*. Rockville, MD: Montgomery County Public Schools.
- Von Secker, C. (2005b). *The impact of grade 10 PSAT census testing on SAT scores: A supplement to the 2004 SAT Report*. Rockville, MD: Montgomery County Public Schools.

ATTACHMENTS

Table A1
Percentage of African American and Hispanic Students in the MCPS Classes of 2001 to 2005 Who Took the SAT
by Most Advanced English or Mathematics Course Completed by the End of Grade 11

Course Level	Combined African American and Hispanic % Took SAT					African American % Took SAT					Hispanic % Took SAT				
	2001	2002	2003	2004	2005	2001	2002	2003	2004	2005	2001	2002	2003	2004	2005
English															
AP/IB English 11 or Higher	95.5	98.8	95.0	93.7	95.7	95.2	99.0	95.5	94.9	95.4	95.9	98.3	94.1	91.2	96.4
Honors English 11	92.2	90.8	84.6	84.2	88.2	93.7	92.3	89.4	85.6	90.0	89.4	87.8	75.4	81.6	84.8
Regular English 11	48.1	48.2	49.0	42.2	48.3	51.6	49.6	54.8	46.8	52.7	41.7	45.3	40.2	34.6	41.8
Below English 11 (includes ESOL)	20.6	22.4	20.3	24.2	33.2	30.8	37.5	35.6	41.5	47.2	15.6	14.8	13.1	15.2	23.6
Mathematics															
Precalculus or Higher	94.0	94.8	90.4	90.5	93.6	95.2	98.0	93.3	92.0	95.4	92.2	89.3	85.5	87.8	90.5
Honors Algebra 2 ^a	90.9	85.1	86.0	87.2	83.2	91.4	93.5	92.0	87.8	87.1	90.3	77.1	74.4	86.4	77.8
Algebra 2 ^b	72.1	75.9	74.5	69.1	71.9	78.4	78.9	81.5	74.9	77.9	62.1	70.9	63.1	60.1	62.4
Geometry	37.7	38.3	42.0	36.7	42.9	45.2	44.1	50.6	45.8	50.0	26.1	28.9	30.1	24.5	32.7
Algebra 1 or Below	15.5	15.9	17.6	17.8	20.0	19.0	19.8	26.4	25.9	25.8	10.3	10.9	9.6	7.1	13.2

^a Includes AP Statistics^b Includes Introduction to Statistics

Table A2
SAT Mean Verbal and Math Scores of African American and Hispanic Students in the MCPS Classes of 2001 to 2005
by Most Advanced English or Mathematics Course Completed by the End of Grade 11

Course Level	Combined African American and Hispanic					African American					Hispanic				
	2001	2002	2003	2004	2005	2001	2002	2003	2004	2005	2001	2002	2003	2004	2005
English															
SAT Mean Verbal Scores															
AP/IB English 11 or Higher	585	572	569	567	567	579	564	566	564	566	594	587	576	575	571
Honors English 11	520	509	502	488	487	518	502	493	488	482	524	522	523	487	497
Regular English 11	425	418	414	404	403	419	414	413	400	400	440	426	417	413	410
Below English 11 (includes ESOL)	332	329	354	348	354	318	306	342	330	328	346	358	370	374	390
Mathematics															
SAT Mean Math Scores															
Precalculus or Higher	574	584	584	567	560	570	569	577	561	555	580	612	598	578	568
Honors Algebra 2 ^a	545	532	528	510	507	542	522	518	508	498	550	544	550	511	521
Algebra 2 ^b	456	457	454	446	440	452	451	450	447	437	463	469	462	444	444
Geometry	384	385	393	381	382	385	385	396	379	379	379	385	387	388	389
Algebra 1 or Below	352	351	337	349	342	350	350	335	349	330	356	354	342	346	369

^a Includes AP Statistics^b Includes Introduction to Statistics

Table A3
Number of African American and Hispanic Students in the MCPS Classes of 2001 to 2005 Who Attained SAT Verbal or Math Scores of 550 or Higher and Distribution of SAT Verbal or Math Scores of 550 or Higher by Most Advanced English or Mathematics Course Level Completed by the End of Grade 11

Course Level	Combined African American and Hispanic					African American					Hispanic				
	2001	2002	2003	2004	2005	2001	2002	2003	2004	2005	2001	2002	2003	2004	2005
English															
N SAT Verbal Scores 550 or Higher															
All English Courses	307	317	346	402	453	198	189	224	257	294	109	128	122	145	159
% SAT Verbal Scores 550 or Higher by English Level (Annual Total = 100%)															
AP/IB English 11 or Higher	26.7	30.5	34.5	48.6	45.1	25.4	31.2	35.9	50.0	48.4	29.0	29.6	31.9	46.1	38.9
Honors English 11	47.3	48.2	48.5	39.4	41.9	49.7	49.5	47.1	38.1	39.1	43.0	46.4	51.3	41.8	47.1
Regular English 11	25.7	20.3	15.8	11.5	12.3	24.9	19.4	15.2	11.5	11.8	27.1	21.6	16.8	11.3	13.4
Below English 11 (includes ESOL)	0.3	1.0	1.2	0.5	0.7	0.0	0.0	1.8	0.4	0.7	0.9	2.4	0.0	0.7	0.6
Mathematics															
N SAT Math Scores 550 or Higher															
All Mathematics Courses	312	348	393	392	469	186	195	242	238	293	126	153	151	154	176
% SAT Math Scores 550 or Higher or Higher by Math Level (Annual Total = 100%)															
Precalculus or Higher	62.7	62.2	66.7	69.0	76.7	65.0	67.4	66.9	70.0	77.5	59.2	55.6	66.2	67.5	75.4
Honors Algebra 2 ^a	10.4	11.0	10.1	9.9	8.9	8.2	8.8	8.8	9.4	8.0	13.6	13.9	12.2	10.6	10.5
Algebra 2 ^b	24.7	24.4	20.2	19.0	12.4	24.0	23.3	20.1	18.9	12.8	25.6	25.8	20.3	19.2	11.7
Geometry	1.9	2.3	2.8	1.8	1.7	2.2	0.5	3.8	1.3	1.7	1.6	4.6	1.4	2.6	1.8
Algebra 1 or Below	0.3	0.0	0.3	0.3	0.2	0.5	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.6

^a Includes AP Statistics^b Includes Introduction to Statistics

Table A4
Percentage of African American and Hispanic Students in the MCPS Classes of 2001 to 2005 by
Most Advanced English or Mathematics Course Completed by the End of Grade 11

Course Level	Combined African American and Hispanic % Enrolled in Each Course					African American % Enrolled in Each Course					Hispanic % Enrolled in Each Course				
	2001	2002	2003	2004	2005	2001	2002	2003	2004	2005	2001	2002	2003	2004	2005
	English														
AP/IB English 11 or Higher	5.0	5.8	7.8	11.3	11.1	5.1	6.1	9.2	12.8	13.0	4.7	5.4	5.7	9.0	8.2
Honors English 11	15.5	18.8	21.1	23.0	25.1	16.7	20.2	23.9	25.0	27.2	13.6	16.8	17.3	20.0	22.0
Regular English 11	67.6	61.4	56.5	51.9	50.6	71.7	66.1	58.7	54.3	50.8	61.5	54.0	53.5	48.4	50.2
Below English 11 (includes ESOL)	11.9	13.9	14.6	13.9	13.3	6.5	7.6	8.1	8.0	9.0	20.2	23.8	23.6	22.6	19.6
Mathematics															
Precalculus or Higher	12.7	11.8	14.1	16.3	19.6	12.9	12.1	15.2	17.6	20.7	12.3	11.3	12.7	14.5	18.0
Honors Algebra 2 ^a	2.5	3.4	4.0	4.3	5.2	2.2	2.7	4.5	4.0	5.1	3.0	4.5	3.3	4.7	5.4
Algebra 2 ^b	34.7	34.2	31.5	32.9	32.7	35.0	35.2	33.5	33.7	33.4	34.2	32.7	28.7	31.7	31.7
Geometry	32.0	33.0	30.2	29.5	30.0	32.0	33.6	30.2	28.5	29.6	32.0	31.9	30.2	31.1	30.8
Algebra 1 or Below	18.2	17.6	20.2	16.9	12.4	17.9	16.3	16.6	16.2	11.3	18.6	19.6	25.1	18.0	14.1

^a Includes AP Statistics^b Includes Introduction to Statistics