Participation and Performance Trends of College Admission Examinations in the Classes of 2007 to 2011

Office of Shared Accountability

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Executive Summary

Nearly all colleges in the nation now accept both the SAT and ACT as admission examinations. Since 2004−2005, the new college entrance options have impacted participation and performance on both tests among high school graduates in Montgomery County Public Schools (MCPS). To assess the impact, the Office of Shared Accountability examined trends of SAT and ACT participation and performance for the MCPS graduating Classes of 2007 to 2011. The study also explored associations of graduates' college entrance test participation with their performance on the tests and their overall high school grade point averages (GPA). The following four research questions were examined:

1. What were the trends in MCPS graduates' participation on college entrance tests (SAT and ACT) for the Classes of 2007 to 2011?

2. What were the trends in MCPS graduates' performance on college entrance tests (SAT and ACT) for the Classes of 2007 to 2011?

3. How was MCPS graduates' performance on college entrance tests (SAT and ACT) associated with their test participation for the Classes of 2010 and 2011, after controlling for student demographic and special service variables?

4. What was the association of college entrance test participation with graduates' overall high school GPA for the MCPS Classes of 2010 and 2011?

Summary of Methodology

The study population consisted of diploma students from MCPS Classes of 2007 to 2011 who graduated in June of the graduation year. Graduates' most recent (as of April of the graduation year for the SAT and June for the ACT) composite scores in college entrance tests were calculated from scores of subtests (i.e., Critical Reading, Writing, and Mathematics for the SAT, and Reading, English, Mathematics, and Science for the ACT). The highest possible composite score was 2400 for the SAT and 36 for the ACT. Graduates' overall GPAs (un-weighted) were categorized into a GPA of B or higher versus a GPA lower than a B. Descriptive (i.e., calculation of test participation rates and mean scores) as well as basic (i.e., t-test and chi-square test) and advanced (i.e., Analysis of Covariance) analyses were performed. Statistical significance and effect size were estimated for results if applicable.

Summary of Findings

Research Question One. This study found a downward trend for SAT participation and an upward trend for ACT participation from the Class of 2007 to the Class of 2011.

SAT

- The overall SAT participation rate decreased by 7.7 percentage points between the Classes of 2007 and 2011. The downward trend was more pronounced for graduates taking the SAT only (14.1 percentage points).

- Male and Female graduates experienced a similar five-year decrease in SAT participation.
- Graduates receiving special services had a larger five-year decrease in SAT participation.

ACT

- The overall ACT participation rate increased between the Classes of 2007 and 2011 by 11.9 percentage points for all ACT takers and 5.4 percentage points for ACT-only takers.
- Similar five-year increases in ACT participation rates also were found for gender and special services subgroups.
- The participation rate for ACT-only takers increased substantially for all graduates and for gender and special services groups across the years.

ACT and SAT

- There was a relatively moderate increase in the participation rate (6.4 percentage points) among graduates taking both the ACT and SAT between the Classes of 2007 and 2011.
- Male graduates had a larger increase in dual participation rate than Female graduates over the time period.
- Graduates receiving Free and Reduced-price Meals System (FARMS) services doubled their dual participation rate and those receiving English for Speakers of Other Languages (ESOL) services increased their dual participation rate more than 10 times over the five years. There also was a small increase for the special education group.
- Across racial/ethnic groups, the rate of taking both the SAT and ACT increased between the Classes 2007 and 2009 but slightly decreased between the Classes of 2010 and 2011 with the exception of Asian test takers.

Research Question Two. Graduates' performances on college entrance tests showed an upward trend.

SAT

- The average SAT composite score significantly increased from 2007 to 2011 for all graduates (16 points), Male (18 points) and Female (16 points) graduates, and FARMS (57 points) and ESOL (94 points) groups for all SAT takers.
- There was a larger five-year increase among SAT-only takers for all graduates (26 points), Male (21 points) and Female (32 points) graduates, and FARMS (62 points) and ESOL (115 points) groups.

ACT

- There was a one-point or less decrease over the five years in the average ACT composite score for all ACT takers and all female ACT takers, which was statistically significant.
- There was a significant one-point increase over the years for females taking ACT only.

Research Question Three

- Graduates who took both the ACT and SAT significantly outperformed those who took the ACT only by about two points on the ACT composite score for the Classes of 2010 and 2011, after controlling for student demographic and special services variables. The significant result had a small effect size indicating an educational significance.
- Graduates who took both the ACT and SAT and those who took the SAT only showed comparable performances on the SAT, after controlling for student demographic and services variables.

Research Question Four

- For the Classes of 2010 and 2011, graduates who took the ACT only tended to have lower high school GPAs than those who took the SAT only or both tests. Specifically, less than 40% of ACT-only takers received a B or a higher GPA, whereas more than one half of SAT-only takers and more than two thirds of dual-test takers earned a B or a higher GPA in both graduating classes.

Recommendations

- Schools should use the college readiness monitoring tool to monitor and prepare students for both the ACT and SAT.
- The school district should consider providing emphasis on ACT performance similar to the SAT.
- As a follow-up study to this research, the college readiness M-STAT team should examine why there was a substantial increase in ACT-only participation in certain high schools.

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Participation and Performance Trends of College Admission Examinations in the Classes of 2007 to 2011

Helen Wang, Ph.D, Vasuki Rethinam, Ph.D, and Marilyn Powell

Background

Historically, a majority of Montgomery County Public Schools (MCPS) graduates have taken the SAT as part of their postsecondary preparation. However, with an increasing majority of the nation's colleges accepting both the SAT and ACT, or the ACT scores as an indicator of students' academic readiness for college (e.g., Boston College, 2009; Duke University, 2009), MCPS graduates began taking advantage of the new college entrance examination options. Since school year 2005, there have been significant increases in the number and percentage of MCPS graduates who took the ACT in addition to, or in lieu of, the SAT (Von Secker, 2009).

To examine whether this trend has continued, this study extended the prior analyses about participation and performance in college entrance tests in MCPS through more recent years. In particular, the study examined changes in SAT and ACT participation and performance in MCPS for the high school graduating Classes of 2007 through 2011. In addition, the study explored how test participation was associated with performance on the tests and with overall high school grade point averages (GPA) for the Classes of 2010 and 2011.

Findings from this study will help district and school leadership understand trends in SAT and ACT participation and performance, and understand differences among all graduates and subgroups of students defined by race/ethnicity and eligibility for special services. Additionally, the findings will provide further clarification to the decrease in SAT participation (Rethinam, 2011a).

Literature Review

The SAT

As the nation's most widely used standardized college admission test, the SAT has been proven to be a reliable, effective indicator/measure of a student's college readiness and success (College Board, 2012). Along with a student's academic record, SAT results reflect the subject matter learned by students in high school and how well they apply that knowledge—the critical thinking skills necessary to succeed in college. Wiley, Wyatt, & Camara (2010), researchers at the College Board, identified a combined score of 1550 (rounded from 1556) on SAT reading, math, and writing as the college readiness indictor. They found that an SAT score of 1550 was associated with a 65% probability of obtaining a B- in first-year college courses.

SAT scores tend to vary across different student populations defined by cognitive and noncognitive factors strongly associated with educational experiences that influence average SAT scores (College Board, 2002). Even among students with similar high school records, there were long-standing national differences in the SAT scores of students who differ in demographic status, family background, level of parent education, or economic advantage (Burton, 2003; Camara & Schmidt, 1999; Nettles, Millett, & Ready, 2003).

The ACT

The ACT is also a widely used curriculum- and standards-based educational and career planning tool that assesses students' academic readiness for college (ACT, 2012). ACT test scores reflect what students have learned throughout high school and provide colleges and universities with excellent information for recruiting, advising, placement, and retention.

The ACT's college readiness benchmarks are the minimum test scores required for students to have a high probability of success in credit-bearing first-year college courses—English composition, social sciences, college algebra, or biology (ACT, 2008a). Specifically, the benchmark scores provide a score at which students have a 50% chance to obtain a course grade of B or higher or about a 75% chance to obtain a C or higher in the corresponding course (ACT, 2008a). For example, a student who scores 18 on the ACT English test has a 50% chance of scoring B or higher, or a 75% chance of scoring C or higher, in a college English composition course.

The SAT and ACT in MCPS

Previous MCPS research has examined trends in ACT and SAT participation and performance of graduates. ACT participation in MCPS increased from 15.3% in 2006 to 23.7% in 2008, whereas SAT participation slightly decreased over the time period (Von Secker, 2008). In 2008, 20.1% of MCPS graduates took both the SAT and ACT, a percentage nearly double that of graduates in the Class of 2005; likewise, 3.6% of graduates in the Class of 2008 took the ACT only, a percentage more than four times that of the Class of 2005 (Von Secker, 2009). The continuing upward trend in ACT participation was demonstrated in 2011 with more than 3,000 MCPS graduates taking the ACT, comprising roughly 25% of the district's graduates (Rethinam, 2011b).

The SAT and ACT are the two most commonly used standardized college admission tests in the nation. MCPS uses scores of both tests to indicate students' readiness for college-level work. MCPS identified a combined score of 1650 on the SAT (reading, writing, or mathematics) or a 24 on the ACT as one of the MCPS' Seven Keys to College and Career Readiness (Key 7) (Von Secker, 2009). Von Secker and Liu (2010) found that the MCPS Class of 2010 set a new record for the percentages of SAT test takers who attained 1650 or higher. Graduates who attain these scores are unlikely to be required to take remedial courses upon entry to a two- or four-year college (Von Secker, 2009). Another study on MCPS graduates (Zhao & Liu, 2011) indicated that students meeting Key 7 were more likely to enroll in a two- or four-year college immediately in the fall after high school graduation.

High School Grade Point Average

Geiser and Santelices (2007) found that GPA was consistently the best predictor not only of freshman grades in college, but of four-year cumulative college grades and graduation. Other studies also have shown that high school GPA is one predictor of postsecondary enrollment and postsecondary success (e.g., ACT, 2008b; Maryland State Commission on Higher Education, 1997). Thus, a combination of high school grades and SAT scores are best predictors of college grades (Zwick, 1999).

Roderick, Nagaoka, and Allensworth (2006) indicated that unweighted high school GPA, the number of honors and AP courses the students took, and eleventh grade achievement test scores are predictors of enrollment and graduation rates among students who enroll in a four-year college immediately after high school graduation. An unweighted high school GPA of 3.0 (B) was identified as a key benchmark of college readiness in their research that suggested this GPA level related to a 50% greater likelihood of graduation from a four-year institution (within six years).

Methodology

Research Questions

The following questions were examined:

1. What were the trends in MCPS graduates' participation of college entrance tests for the Classes of 2007 to 2011?

    a. What were the trends in SAT participation among MCPS graduates by gender; race/ethnicity; and participation in Free and Reduced-price Meals System (FARMS), special education, and English for Speakers of Other Languages (ESOL) services?
    b. What were the trends in ACT participation among MCPS graduates by gender; race/ethnicity; and participation in FARMS, special education, and ESOL services?
    c. What were the trends in participation of both the ACT and SAT among MCPS graduates by gender; race/ethnicity; and participation in FARMS, special education, and ESOL services?

2. What were the trends in MCPS graduates' performance on college entrance tests for the Classes of 2007 to 2011?

    a. What were the trends in SAT performance among MCPS graduates by gender; race/ethnicity; and participation in FARMS, special education, and ESOL services?
    b. What were the trends in ACT performance among MCPS graduates by gender; race/ethnicity; and participation in FARMS, special education, and ESOL services?

3. How was MCPS graduates' performance on college entrance tests associated with their test participation for the Classes of 2010 and 2011?

a. Is there a difference in mean SAT scores between graduates who took both the ACT and SAT and those who took the SAT only, after controlling for graduates' demographic and special services variables?
b. Is there a difference in mean ACT scores between graduates who took both the ACT and SAT and those who took the ACT only, after controlling for graduates' demographic and special services variables?

4. What was the association of college entrance test participation with graduates' overall high school GPA for the MCPS Classes of 2010 and 2011?

Study Population

The population for this study consisted of the MCPS high school graduating Classes of 2007 to 2011 and included only diploma students who graduated in June of 2007 to 2011. Students who graduated from MCPS during the summer or midyear and students who took a college entrance test but could not be verified as MCPS graduates were excluded from the analysis. All June graduates from the Classes of 2007 to 2011 were included in the analysis for question one; all college entrance test takers from the Class of 2007 to 2011 were included for question two; and all college entrance test takers from the Classes of 2010 and 2011 were included for questions three and four.

Measures

College entrance test participation and performance. With both the SAT and ACT, high school students are allowed to take the test multiple times in order to achieve the most optimal score. For this study, the cut-off time point for the SAT was April of the graduation year. SAT participation was defined as receiving the SAT composite score (Critical Reading, Writing, and Mathematics). ACT participation was defined as receiving the ACT composite score (Reading, English, Math, and Science) with or without a Writing score for any ACT taken as of June of the graduation year. The SAT and ACT composite scores described in this report were students' most recent (as of April of the graduation year) test scores. The mean composite score was calculated from corresponding sections of each test described above. The highest possible composite score is 2400 for the SAT and 36 for the ACT.

General academic performance. Students' general academic performance was measured by overall high school GPA based on all credit-bearing courses a student took in high school. Both unweighted and weighted GPA are calculated in MCPS. Based on the study by Roderick, Nagaoka, and Allensworth (2006), this study used unweighted GPA ranging from 0 to 4, with A equal to 4, B to 3, C to 2, D to 1, and E to 0. GPAs were collapsed into two categories: a GPA of B or higher versus a GPA lower than B.

Demographics and special services. Data about graduates' gender, race/ethnicity, and Grade 12 participation in FARMS, special education, or ESOL services were taken from MCPS records. Gender and special services were coded into dichotomous variables (0 or 1) and race/ethnicity was a categorical variable. In the analysis for question three, White, Asian, and Two or More Races graduates were combined as a reference group for African American and Hispanic graduates, respectively.

Data Analysis

Descriptive statistics using cross-tabulation were conducted to obtain numbers and percentages of June graduates who took the ACT, SAT, both tests, and either test only, as well as the mean test scores among test takers. The computation was conducted for each selected graduating class in order to show the change of test participation and performance across the cohorts. A t-test procedure was applied to examine the significance of the five-year change in the mean composite test scores. Data were disaggregated by student gender, race/ethnicity, and participation in FARMS, special education, and ESOL services.

Analysis of covariance (ANCOVA) compared differences in mean SAT scores of graduates taking both the SAT and ACT to those taking the SAT or ACT only for the Classes of 2010 and 2011. The ANCOVA procedure was used to test significant differences between adjusted group mean scores by statistically controlling for the effects of students' demographic and special services variables, and provide the adjusted group mean scores for calculating effect sizes of the group mean differences. The analysis employed one of the most common effect size measures—known as Cohen's *d* (adjusted mean difference/pooled test scores)—to assess how practically meaningful the adjusted group mean difference was (e.g., Cohen, 1988; Carver, 1993; Levin, 1993; Thompson, 1995; American Psychological Association, 2001). Within the education research field, an effect size of 0.2 is considered small but acceptable; at least 0.5 is considered medium; and 0.8 or greater is considered large (Cohen, 1988; Datnow, Borman, Stringfield, Overman, & Castellano, 2003).

In addition, the study used the Pearson's chi-square test to examine whether graduates with a GPA lower than a B and those with a GPA of B or higher distributed differently across types of college admission test participation (ACT only, SAT only, and both ACT and SAT) for the Classes of 2010 and 2011.

Results

Findings about trends in SAT and ACT participation and performance are organized by research question. School-level analyses are included in Appendix A. The numbers presented on SAT participation and performance in this report may not match the ones published recently due to changes in the business rules for reporting (Rethinam, 2011a). In the recently published SAT memorandum, the numbers were calculated by including all graduating seniors, rather than June graduates only. The table in Appendix B displays college entrance test participation and highest test scores for all graduating seniors from the MCPS Classes of 2010 and 2011 by high school.

Findings for Question One

1. *What were the trends in MCPS graduates' participation on college entrance tests for the Classes of 2007 to 2011?*

The analysis examined trends of test participation of SAT, SAT only, ACT, ACT only, or both SAT and ACT for graduates from the Classes of 2007 to 2011. Test participation numbers and percentages are reported for all graduates and their subgroups defined by gender, race/ethnicity, and special services. The five-year change in the participation rate is displayed for the gender

and special service subgroups but not for the racial/ethnic groups due to the application of new race codes defined by the federal government in 2010. Correspondingly, results for racial and ethnic groups are discussed for the Classes of 2007 to 2009 and the Classes of 2010 and 2011 separately.

1a. *What were the trends in SAT participation among MCPS graduates by gender; race/ethnicity; and participation in FARMS, special education, and ESOL services?*

Over the past five years, SAT test takers decreased 7.7 percentage points, from 79.0% in 2007 to 71.3% in 2011, which was historically low for SAT participation in MCPS (Table 1.1). Male graduates were less likely than Female graduates to take the SAT, while Male and Female graduates experienced a comparable decrease in participation with 7.8 and 7.6 percentage points, respectively. Graduates who received special services showed a steeper decline in SAT participation, with a five-year decreases of 20.0, 12.1, and 10.7 percentage points for ESOL, FARMs, and special education recipients, respectively.

Among race and ethnic groups, Asian and White graduates showed consistently higher SAT participation rates than African American and Hispanic graduates for the Classes of 2007 to 2009; the participation rates for all racial and ethnic groups remained steady across the three graduating classes, with 89% for Asian, about 85% for White, slightly above 70% for African American, and 57% for Hispanic graduates (Table 1.1). For the Classes of 2010 and 2011, Asian and White graduates also showed a higher SAT participation rate than African American and Hispanic graduates, with graduates indicating Two or More Races in the middle; the participation rates for all racial and ethnic groups were the same or similar between the two graduating classes, about 85% for Asian, 81% for White, 77% for Two or More Races, slightly above 60% for African American, and 49% for Hispanic graduates.

Table 1.1
College Entrance Examination Participation (SAT) of the MCPS Classes of 2007 to 2011
by Demographic Group

	All June graduates					*N* Took SAT					% Took SAT					Five year % point
Subgroup	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011	change[a]
All June graduates	9702	9876	9829	10050	9932	7660	7274	7662	7179	7081	79.0	73.7	78.0	71.4	71.3	-7.7
Male	4864	4891	4879	5117	4908	3738	3475	3667	3511	3389	76.9	71.0	75.2	68.6	69.1	-7.8
Female	4838	4985	4950	4933	5024	3922	3799	3995	3668	3692	81.1	76.2	80.7	74.4	73.5	-7.6
FARMS	1210	1468	1657	1950	2085	737	846	973	943	1018	60.9	57.6	58.7	48.4	48.8	-12.1
Special Ed.	725	792	753	813	890	334	319	356	278	315	46.1	40.3	47.3	34.2	35.4	-10.7
ESOL	308	321	344	314	275	121	145	138	72	53	39.3	45.2	40.1	22.9	19.3	-20.0
Asian	1521	1513	1577	1621	1493	1359	1294	1406	1364	1283	89.3	85.5	89.2	84.1	85.9	
African Am.	2030	2097	2106	2061	2168	1453	1433	1555	1279	1367	71.6	68.3	73.8	62.1	63.1	
Hispanic	1468	1602	1760	1918	2001	837	867	1003	940	986	57.0	54.1	57.0	49.0	49.3	
White	4661	4632	4359	4130	3933	3995	3656	3677	3351	3188	85.7	78.9	84.4	81.1	81.1	
Two or More Races				287	310				221	239				77.0	77.1	

Note. American Indian or Alaskan Native and Native Hawaiian or Other Pacific Islander students were included with all students but were not reported separately due to small numbers. Comparison of 2010 and 2011 with other school years' racial/ethnic groups should be made with caution due to changes in federal government definitions of race/ethnicity in 2010. These results, calculated based on the total number of June graduates, might not match the already published results in the 2011 SAT memorandum which included all graduating seniors in the year (Rethinam, 2011a).
[a]Five year % change = percentage in 2011 – percentage in 2007; changes in percentage points were not computed for racial/ethnic groups due to changes in federal government definitions of race/ethnicity in 2010.

The downward trend in SAT participation was more evident among graduates who took the SAT only. From the Class of 2007 to the Class of 2011, the SAT participation rate decreased from 62.5 to 48.4, a total of 14.1 percentage points, for all graduates (Table 1.2). This decrease in SAT participation doubled the one for all SAT testers including those taking both the SAT and ACT. Among graduates taking the SAT only, Male and Female graduates showed similar participation rates across the five years and the Male participation rate decreased slightly more than the Female rate (14.8 versus 13.4 percentage points). Special service groups showed a sharper decrease in SAT only participation, with 23.4, 20.1, and 13.9 percentage point decreasess for ESOL, FARMs, and special education recipients, respectively.

Among graduates who took the SAT only, a higher participation rate was observed for Asian graduates than for White, African American, and Hispanic graduates in the Classes of 2007 to 2009. Across the three years, Asian graduates showed a greater decrease (8.2 percentage points from 78.0% to 69.8%) in the participation rates than White (6.7 percentage points from 62.8% to 56.1%), African American (6.3 percentage points from 58.7% to 52.4%), and Hispanic (5.2 percentage points from 50.5% to 45.5%) graduates (Table 1.2). For the Classes of 2010 and 2011, about two thirds of Asian graduates, about one half White and Two or More Races graduates, more than 40% of African American, and more than one third of Hispanic graduates took the SAT only; there was a small increase in the participation rate across all racial and ethnic groups.

Table 1.2
College Entrance Examination Participation (SAT only) of the MCPS Classes of 2007 to 2011
by Demographic Group

	All June graduates					*N* Took SAT only					% Took SAT only					Five year % point
Subgroup	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011	change[a]
All June graduates	9702	9876	9829	10050	9932	6061	5288	5468	4746	4804	62.5	53.5	55.6	47.2	48.4	-14.1
Male	4864	4891	4879	5117	4908	3088	2618	2709	2389	2388	63.5	53.5	55.5	46.7	48.7	-14.8
Female	4838	4985	4950	4933	5024	2973	2670	2759	2357	2416	61.5	53.6	55.7	47.8	48.1	-13.4
FARMS	1210	1468	1657	1950	2085	648	718	699	635	698	53.6	48.9	42.2	32.6	33.5	-20.1
Special Ed.	725	792	753	813	890	259	223	255	177	194	35.7	28.2	33.9	21.8	21.8	-13.9
ESOL	308	321	344	314	275	120	137	111	62	43	39.0	42.7	32.3	19.7	15.6	-23.4
Asian	1521	1513	1577	1621	1493	1186	1080	1101	1050	989	78.0	71.4	69.8	64.8	66.2	
African Am.	2030	2097	2106	2061	2168	1192	1110	1103	848	939	58.7	52.9	52.4	41.1	43.3	
Hispanic	1468	1602	1760	1918	2001	741	746	800	657	727	50.5	46.6	45.5	34.3	36.3	
White	4661	4632	4359	4130	3933	2928	2337	2447	2023	1972	62.8	50.5	56.1	49.0	50.1	
Two or More Races				287	310				148	167				51.6	53.9	

Note. American Indian or Alaskan Native and Native Hawaiian or Other Pacific Islander students were included with all students but were not reported separately due to small numbers. Comparison of 2010 and 2011 with other school years' racial/ethnic groups should be made with caution due to changes in federal government definitions of race/ethnicity in 2010.
[a]Five year % change = percentage in 2011 – percentage in 2007; changes in percentage points were not computed for racial/ethnic groups due to changes in federal government definitions of race/ethnicity in 2010.

1b. What were the trends in ACT participation among MCPS graduates by gender; race/ethnicity; and participation in FARMS, special education, and ESOL services?

In contrast to the downward trend of SAT participation, ACT participation showed an upward trend across the Classes of 2007 to 2011. Graduates taking the ACT (including those taking the SAT as well) increased nearly 12 percentage points, from 17.9% in 2007 to 29.8% in 2011 (Table 1.3). As with the SAT, Male graduates were less likely than Female graduates to take the ACT; across the five years, however, Male graduates nearly doubled their participation rate by 12.4 percentage points, while the participation rate for Female graduates increased about 50% by 11.3 percentage points. Special services groups also showed compatible increases in ACT participation. From the Classes of 2007 to 2011, the ACT participation rate increased by 15.4 percentage points (1.66 times) for the FARMS group, by 10.9 percentage points (0.74 times) for the special education group, and by 11.1 percentage points (6.94 times) for the ESOL group.

White graduates were more likely to take the ACT than African American, Asian, and Hispanic graduates for the Classes of 2007 to 2009. Over the three years, African American and Asian graduates increased their ACT participation by 9.8 (15.1% to 24.9%) and 9.0 (11.8% to 20.8%) percentage points, respectively, compared to 7.6 (24.6% to 32.2%) for White and 7.5 (7.1% to 14.6%) percentage points for Hispanic graduates (Table 1.3). For the Classes of 2010 and 2011, White graduates (about 38%) still led other racial and ethnic groups such as Two or More Races (about one third), African American (nearly 30%), and Asian and Hispanic (about one fifth) graduates, in ACT participation; the participation rate was comparable between the two years for all the racial and ethnic groups.

Table 1.3
College Entrance Examination Participation (ACT) of the MCPS Classes of 2007 to 2011
by Demographic Group

Subgroup	All June graduates					*N* Took ACT					% Took ACT					Five year % point change[a]
	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011	
All June graduates	9702	9876	9829	10050	9932	1737	2342	2519	3026	2957	17.9	23.7	25.6	30.1	29.8	+11.9
Male	4864	4891	4879	5117	4908	711	1023	1119	1425	1326	14.6	20.9	22.9	27.8	27.0	+12.4
Female	4838	4985	4950	4933	5024	1026	1319	1400	1601	1631	21.2	26.5	28.3	32.5	32.5	+11.3
FARMS	1210	1468	1657	1950	2085	112	167	344	464	515	9.3	11.4	20.8	23.8	24.7	+15.4
Special Ed.	725	792	753	813	890	107	149	154	182	229	14.8	18.8	20.5	22.4	25.7	+10.9
ESOL	308	321	344	314	275	5	9	38	23	35	1.6	2.8	11.0	7.3	12.7	+11.1
Asian	1521	1513	1577	1621	1493	179	237	328	359	332	11.8	15.7	20.8	22.1	22.2	
African Am.	2030	2097	2106	2061	2168	306	395	525	594	635	15.1	18.8	24.9	28.8	29.3	
Hispanic	1468	1602	1760	1918	2001	104	159	257	404	393	7.1	9.9	14.6	21.1	19.6	
White	4661	4632	4359	4130	3933	1146	1542	1403	1568	1491	24.6	33.3	32.2	38.0	37.9	
Two or More Races				287	310				96	97				33.4	31.3	

Note. American Indian or Alaskan Native and Native Hawaiian or Other Pacific Islander students were included with all students but were not reported separately due to small numbers. Comparison of 2010 and 2011 with other school years' racial/ethnic groups should be made with caution due to changes in federal government definitions of race/ethnicity in 2010.
[a]Five year % change = percentage in 2011 – percentage in 2007; changes in percentage points were not computed for racial/ethnic groups due to changes in federal government definitions of race/ethnicity in 2010.

The upward trend also was found for ACT-only participation. Across the five graduating classes, the ACT-only participation rate for all graduates increased 5.4 percentage points from 1.4% in 2007 to 6.8% in 2011 (Table 1.4). Male and Female graduates taking the ACT only increased 4.08 times by 5.3 percentage points and 3.44 times by 5.5 percentage points in the participation rate, respectively. Among special services recipients, the ACT-only participation rate rose nearly 4 times by 7.5 percentage points for the FARMS group, 1.75 times by 7.7 percentage points for the special education group, and 6 times by 7.8 percentage points for the ESOL group.

Among graduates taking the ACT only, participation rates for White and African American graduates were relatively higher than their Hispanic and Asian peers for the Classes of 2007 to 2009. The three-year percentage increase was higher for Hispanic (2.6 points from 0.5% to 3.1%) and White (2.3 points from 1.7% to 4.0%) graduates than for their African American (1.3 points from 2.2% to 3.5%) and Asian (1.1 points from 0.4% to 1.5) peers (Table 1.4). For the Classes of 2010 and 2011, African American and Two or More Races graduates showed the highest, and Asian graduates showed the lowest ACT-only participation rate. The two-year rate change was mixed for the racial and ethnic groups, having a relatively high increase for African American (1.6 points from 7.9% to 9.5%) and White (1.2 points from 5.8% to 7.0%) graduates, remaining at 8% for Two or More Races graduates, and having a slight increase for Hispanic graduates (0.4 points from 6.3% to 6.7%), but a slight decrease for Asian graduates (0.3 points from 2.8% to 2.5%).

Table 1.4
College Entrance Examination Participation (ACT only) of the MCPS Classes of 2007 to 2011
by Demographic Group

	All June graduates					*N* Took ACT only					% Took ACT only					Five year % point change[a]
Subgroup	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011	
All June graduates	9702	9876	9829	10050		138	356	325	593	680	1.4	3.6	3.3	5.9	6.8	+5.4
Male	4864	4891	4879	5117	4908	61	166	161	303	325	1.3	3.4	3.3	5.9	6.6	+5.3
Female	4838	4985	4950	4933	5024	77	190	164	290	355	1.6	3.8	3.3	5.9	7.1	+5.5
FARMS	1210	1468	1657	1950	2085	23	39	70	156	195	1.9	2.7	4.2	8.0	9.4	+7.5
Special Ed.	725	792	753	813	890	32	53	53	81	108	4.4	6.7	7.0	10.0	12.1	+7.7
ESOL	308	321	344	314	275	4	1	11	13	25	1.3	0.3	3.2	4.1	9.1	+7.8
Asian	1521	1513	1577	1621	1493	6	23	23	45	38	0.4	1.5	1.5	2.8	2.5	
African Am.	2030	2097	2106	2061	2168	45	72	73	163	207	2.2	3.4	3.5	7.9	9.5	
Hispanic	1468	1602	1760	1918	2001	8	38	54	121	134	0.5	2.4	3.1	6.3	6.7	
White	4661	4632	4359	4130	3933	79	223	173	240	275	1.7	4.8	4.0	5.8	7.0	
Two or More Races				287	310				23	25				8.0	8.1	

Note. American Indian or Alaskan Native and Native Hawaiian or Other Pacific Islander students were included with all students but were not reported separately due to small numbers. Comparison of 2010 and 2011 with other school years' racial/ethnic groups should be made with caution due to changes in federal government definitions of race/ethnicity in 2010.
[a]Five year % change = percentage in 2011 – percentage in 2007; changes in percentage points were not computed for racial/ethnic groups due to changes in federal government definitions of race/ethnicity in 2010.

1c. What were the trends in participation of both the ACT and SAT among MCPS graduates by gender; race/ethnicity; and participation in FARMS, special education, and ESOL services?

There was an upward trend for participation of both the ACT and SAT in MCPS. From the Class of 2007 to the Class of 2011, the percentage of graduates taking both tests increased 6.4 points from 16.5% to 22.9% (Table 1.5). Although Male graduates were less likely than Female graduates to take both the ACT and SAT in all the years, the five-year increase in the participation rate was higher for Male (7.0 percentage points from 13.4% to 20.4%) than for Female (5.8 percentage points from 19.6% to 25.4%) graduates. FARMS recipients doubled their participation rate with a 7.9 percentage-point increase, and ESOL recipients increased the rate 11 times with a 3.3 percentage-point increase over the five years. There was a 3.3 percentage-point increase for special education recipients (from 10.3% to 13.6%).

White graduates were more likely to take both the ACT and SAT than African American, Asian, and Hispanic graduates for the Classes of 2007 to 2009. Over the three years, African American and Asian graduates increased their ACT participation by 8.6 (12.9% to 21.5%) and 7.9 (11.4% to 19.3%) percentage points, respectively, compared to 5.3 (22.9% to 28.2%) for White and 5.0 (6.5% to 11.5%) percentage points for Hispanic graduates (Table 1.5). For the Classes of 2010 and 2011, White graduates (more than 30%) still led other racial and ethnic groups such as Two or More Races (about one fourth), African American and Asian (about one fifth), and Hispanic (less than 15%) graduates, in ACT and SAT participation; the participation rate was comparable between the two years for all the racial and ethnic groups.

Table 1.5
College Entrance Examination Participation (ACT & SAT) of the MCPS Classes of 2007 to 2011 by Demographic Group

	All June graduates					*N* Took ACT & SAT					% Took ACT & SAT					Five year % point change[a]
Subgroup	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011	
All June graduates	9702	9876	9829	10050	9932	1599	1986	2194	2433	2277	16.5	20.1	22.3	24.2	22.9	+6.4
Male	4864	4891	4879	5117	4908	650	857	958	1122	1001	13.4	17.5	19.6	21.9	20.4	+7.0
Female	4838	4985	4950	4933	5024	949	1129	1236	1311	1276	19.6	22.6	25.0	26.6	25.4	+5.8
FARMS	1210	1468	1657	1950	2085	89	128	274	308	320	7.4	8.7	16.5	15.8	15.3	+7.9
Special Ed.	725	792	753	813	890	75	96	101	101	121	10.3	12.1	13.4	12.4	13.6	+3.3
ESOL	308	321	344	314	275	1	8	27	10	10	0.3	2.5	7.8	3.2	3.6	+3.3
Asian	1521	1513	1577	1621	1493	173	214	305	314	294	11.4	14.1	19.3	19.4	19.7	
African Am.	2030	2097	2106	2061	2168	261	323	452	431	428	12.9	15.4	21.5	20.9	19.7	
Hispanic	1468	1602	1760	1918	2001	96	121	203	283	259	6.5	7.6	11.5	14.8	12.9	
White	4661	4632	4359	4130	3933	1067	1319	1230	1328	1216	22.9	28.5	28.2	32.2	30.9	
Two or More Races				287	310				73	72				25.4	23.2	

Note. American Indian or Alaskan Native and Native Hawaiian or Other Pacific Islander students were included with all students but were not reported separately due to small numbers. Comparison of 2010 and 2011 with other school years' racial/ethnic groups should be made with caution due to changes in federal government definitions of race/ethnicity in 2010.
[a]Five year % change = percentage in 2011 – percentage in 2007; changes in percentage points were not computed for racial/ethnic groups due to changes in federal government definitions of race/ethnicity in 2010.

Findings for Question Two

2. *What were the trends in MCPS graduates' performance on college entrance tests for the Classes of 2007 to 2011?*

The analysis also examined trends in performance of graduates from the Classes of 2007 to 2011 who took SAT, SAT only, ACT, ACT only, or both the SAT and ACT. Average composite test scores are reported for all graduates and their subgroups defined by gender, race/ethnicity, and special services. The average SAT composite score in the Class of 2010 was the highest of any class in MCPS history including classes that took the previous version of the SAT. However, this study performed the significance test for the five-year change (2007 to 2011) with t-test analysis. The significance test was not performed for the racial/ethnic groups due to the application of new race codes defined by the federal government in 2010. Results for racial and ethnic groups are discussed for the Classes of 2007 to 2009 and the Classes of 2010 and 2011 separately.

2a. *What were the trends in SAT performance among MCPS graduates by gender; race/ethnicity; and participation in FARMS, special education, and ESOL services?*

The Classes of 2010 and 2011 earned a higher average composite score than the Classes of 2007 to 2009 for all SAT test takers and their subgroups by gender and special service (Table 2.1). The five-year increase in the mean score was 16 points for all SAT testers which was statistically significant. The mean composite score also significantly increased across the five years for Male (18 points) and Female (16 points) graduates, as well as for FARMS (57 points) and ESOL (94 points) recipients.

The five-year increase in the SAT composite score was greater among graduates taking the SAT only, with 26 points for all graduates, 21 points for Male, 32 points for Female, 62 points for FARMS, and 115 points for ESOL graduates (Table 2.1).

For the racial and ethnic groups of all SAT testers, the mean composite scores from the Classes of 2007 to 2009 increased for Asian graduates, remained similar for African American and White graduates, and decreased for Hispanic graduates (Table 2.1). The average composite scores for all the racial and ethnic groups were comparable between the Classes of 2010 and 2011, although the scores in 2011 were lower than the scores in 2010, with the exception of Hispanic graduates. For graduates who took the SAT only, a similar pattern of mean composite score changes from the Classes 2007 to 2009 was observed. The mean composite scores of SAT-only testers for the Classes of 2010 and 2011 also were comparable except for a 21-point increase for the Two or More Races group.

Table 2.1
College Entrance Examination (SAT) Performance of the MCPS Classes of 2007 to 2011
by Demographic Group

SAT testers	Mean composite score for all SAT testers[b]					5-year SAT mean score change[a]	Mean composite score for SAT-only testers					5-year SAT only mean score change[a]
	2007	2008	2009	2010	2011		2007	2008	2009	2010	2011	
All	1624	1616	1615	1653	1640	+16**	1615	1593	1608	1650	1641	+26***
Male	1635	1628	1627	1665	1653	+18*	1628	1607	1619	1662	1649	+21*
Female	1613	1604	1604	1642	1629	+16*	1602	1579	1598	1638	1634	+32***
FARMS	1315	1296	1307	1378	1372	+57***	1309	1292	1304	1382	1371	+62***
Special Ed.	1353	1309	1354	1374	1356	+3	1361	1300	1343	1381	1360	-1
ESOL	1127	1085	1156	1259	1221	+94*	1128	1087	1147	1261	1243	+115*
Asian	1706	1720	1748	1769	1763		1702	1704	1734	1759	1757	
African Am.	1357	1336	1356	1397	1385		1353	1328	1355	1401	1397	
Hispanic	1418	1401	1398	1474	1479		1402	1375	1385	1465	1465	
White	1736	1740	1733	1751	1747		1741	1738	1739	1754	1760	
Two or More Races				1688	1687					1676	1697	

Note. American Indian or Alaskan Native and Native Hawaiian or Other Pacific Islander students were included with all students but were not reported separately due to small numbers. Comparison of 2010 and 2011 with other school years' racial/ethnic groups should be made with caution due to changes in federal government definitions of race/ethnicity in 2010. Mean SAT composite scores are rounded to nearest integers.

[a]Five year mean change = mean in 2011 – mean in 2007; mean changes were not computed for racial/ethnic groups due to changes in federal government definitions of race/ethnicity in 2010. Five-year changes are shown in integers due to rounding of composite scores. Significance test: ***$p < .001$; **$p < .005$; *$p < .05$.

[b]The results, calculated based on the total number of June graduates, might not match the already published results in the 2011 SAT memorandum which included all graduating seniors in the year (Rethinam, 2011a).

For the Class of 2010, the average SAT composite score met the 1650 benchmark—a score identified as Key 7 among MCPS' Seven Keys to College and Career Readiness—for all SAT testers and SAT-only testers. For the Class of 2011, the average SAT composite score for all SAT testers and SAT-only testers was slightly lower than the MCPS benchmark but still far beyond the 1550 identified as the college readiness indictor by the College Board.

For the Classes of 2010 and 2011, Male graduates were near or exceeded the MCPS benchmark for college and career readiness on the SAT composite score. Although Female graduates did not meet the MCPS benchmark, they were far above the College Board's benchmark. For the Classes of 2010 and 2011, White, and Two or More Races graduates scored above the MCPS' SAT benchmark while African American and Hispanic graduates did not meet the College Board's benchmark. The mean SAT composite scores for special service recipients across the years were below the College Board's benchmark.

2b. What were the trends in ACT performance among MCPS graduates by gender; race/ethnicity; and participation in FARMS, special education, and ESOL services?

Among all ACT testers and those taking the ACT only, changes of mean ACT composite scores across the Classes of 2007 to 2011 were not as obvious as the changes of mean SAT composite scores due to the small range of the ACT score. However, there was a one-point decease from 2007 to 2011 for all ACT testers (Table 2.2). This decrease was statistically significant and led the mean score below the MCPS benchmark of 24 for college and career readiness in 2011. For all ACT testers, Asian, White, and Two or More Races graduates attained the MCPS benchmark across the five years, whereas only White graduates for the Classes of 2008 to 2011 did so among ACT-only testers.

Across the five years, the mean ACT composite score was higher for all ACT testers than for ACT-only testers among all the testers and most of their subgroups.

Table 2.2
College Entrance Examination (ACT) Performance of the MCPS Classes of 2007 to 2011
by Demographic Group

ACT testers	Mean composite score for all ACT testers					5-year ACT mean score change[a]	Mean composite score for ACT-only testers					5-year ACT only mean score change[a]
	2007	2008	2009	2010	2011		2007	2008	2009	2010	2011	
All	24	24	23	23	23	-1*	20	21	21	20	20	0
Male	24	24	23	23	24	0	20	21	21	20	20	0
Female	23	24	23	23	23	0*	19	22	22	20	20	+1*
FARMS	18	18	18	18	18	0	16	16	15	17	16	0
Special Ed.	19	19	19	19	19	0	18	19	18	18	19	+1
ESOL	15	16	16	16	16	+1[b]	16	22	14	15	17	+1[b]
Asian	26	26	26	26	26		20	23	22	21	20	
African Am.	18	18	18	18	18		16	16	16	16	17	
Hispanic	21	21	19	20	20		18	17	17	18	17	
White	25	25	25	25	25		22	24	25	24	25	
Two or More Races				24	24					19	20	

Note. American Indian or Alaskan Native and Native Hawaiian or Other Pacific Islander students were included with all students but were not reported separately due to small numbers. Comparison of 2010 and 2011 with other school years' racial/ethnic groups should be made with caution due to changes in federal government definitions of race/ethnicity in 2010.
[a]Five year mean change = mean in 2011 – mean in 2007; mean changes were not computed for racial/ethnic groups due to changes in federal government definitions of race/ethnicity in 2010. Five-year changes are shown in integers due to rounding of composite scores, therefore, a value of zero could mean a change smaller than one point. Significance test: ***$p < .001$; **$p < .005$; *$p < .05$.
[b]Significance was not tested due to the small sample size (only four ESOL students took the SAT only in 2007).

Findings for Question Three

3. *How was MCPS graduates' performance on college entrance tests associated with their test participation for the Classes of 2010 and 2011?*

Tables 3.1 and 3.2 present findings from the ANCOVA procedure which compared the adjusted group mean differences in the college admission test scores between graduates who took both SAT and ACT and those who took the SAT or ACT only in the Classes of 2010 and 2011.

3a. *Was there a difference in mean SAT scores between graduates who took both the ACT and SAT and those who took the SAT only, after controlling for graduates' demographic and service variables?*

The highest possible composite score for the SAT is 2400. Results showed that the adjusted group mean differences in the SAT composite scores between SAT and ACT takers and SAT-only takers were not significant for both the Classes of 2010 and 2011 (Table 3.1). This indicated that the two groups of graduates were comparable in terms of SAT performance.

Table 3.1
Comparison of SAT Scores Between Graduates Taking SAT only and Graduates Taking Both the SAT and ACT in 2010 and 2011

Class of June graduates	Adjusted Means: SAT and ACT Mean	SAT and ACT *N*	SAT only Mean	SAT only *N*	Group mean difference	*p*	*ES*
Class of 2010	1113.75	2429	1111.87	4726	1.88	.789	0.01
Class of 2011	1113.58	2269	1125.06	4794	-11.48	.116	0.04

Note. Class of 2010: $t = .27$ and $SE = 7.04$; Class of 2011: $t = -1.57$ and $SE = 7.31$. FARMS, ESOL, race/ethnicity, special education, and gender were controlled for. American Indian or Alaskan Native and Native Hawaiian or Other Pacific Islander students were not included in the analytical model due to small numbers.

3b. Was there a difference in mean ACT scores between graduates who took both the ACT and SAT and those who took the ACT only, after controlling for graduates' demographic and service variables?

Results revealed that the adjusted mean ACT scores of graduates who took both the SAT and ACT were statistically different from the scores of those who took the ACT only in both the Classes of 2010 and 2011 (Table 3.2). The highest possible composite score for the ACT is 36. After controlling for race/ethnicity; receipt of FARMS, ESOL, or special education services; and gender, the SAT and ACT takers scored significantly higher than the ACT-only takers on the ACT, with 2.07 and 1.90 for the Classes of 2010 and 2011, respectively. The effect size measures showed that the observed differences in the adjusted mean differences were considered significant in the educational setting, with a small effect size of 0.35 for the Class of 2010 and 0.32 for the Class of 2011.

Table 3.2
Comparison of ACT Scores Between Graduates Taking ACT only and Graduates Taking Both the ACT and SAT in 2010 and 2011

Class of June graduates	Adjusted Means: ACT and SAT Mean	ACT and SAT *N*	ACT only Mean	ACT only *N*	Group mean difference	*P*	*ES*
Class of 2010	15.88	2429	13.81	592	2.07	.000	0.35
Class of 2011	16.96	2269	15.07	679	1.90	.000	0.32

Note. Class of 2010: $t = 9.27$ and $SE = 0.22$; Class of 2011: $t = 8.80$ and $SE = 0.22$. FARMS, ESOL, race/ethnicity, special education, and gender were controlled for. American Indian or Alaskan Native and Native Hawaiian or Other Pacific Islander students were not included in the analytical model due to small numbers.

Findings for Question Four

4. What was the association of college entrance test participation with graduates' overall high school GPA for the MCPS Classes of 2010 and 2011?

Types of college entrance test participation were cross tabulated by the levels of unweighted GPAs for graduates from the Classes of 2010 and 2011. The Pearson Chi-square statistic was performed to determine whether graduates who took the ACT only, SAT only, or both tests differed between their GPA levels (a GPA of B or higher versus a GPA lower than a B). The results showed significant differences in the frequency distribution between the higher and lower GPA levels across test participation types; the two graduating classes shared a similar

distribution pattern (Table 4.1). For the Classes of 2010 and 2011, the ACT-only testers were more likely to fall in the lower level (more than 60%) than in the higher level (less than 40%) of GPA. The SAT-only testers, on the other hand, were more likely to fall in the higher level (more than 55%) than in the lower level (less than 45%) of GPA. Among graduates taking both the ACT and SAT, more than two thirds of them had a GPA of B or higher, while less than one third had a GPA lower than a B for both graduating classes.

Table 4.1
College Entrance Test Participation and Unweighted GPA
Cross Tabulation for the Classes of 2010 and 2011

Participation of College Entrance Tests		Unweighted GPA			
		Class of 2010[a]		Class of 2011[b]	
		Lower than B	B or higher	Lower than B	B or higher
ACT only	Count	366	227	416	264
	% within GPA	61.7%	38.3%	61.2%	38.8%
SAT only	Count	1998	2748	2148	2656
	% within GPA	42.1%	57.9%	44.7%	55.3%
ACT & SAT	Count	756	1677	746	1531
	% within GPA	31.1%	68.9%	32.8%	67.2%
Total	Count	3120	4652	3310	4451
	% within GPA	40.1%	59.9%	42.6%	57.4%

[a]Pearson Chi-Square = 205.753, $df = 2$, $p < .001$; [b]Pearson Chi-square = 194.789, $df = 2$, $p < .001$.

Conclusions

Trends of College Entrance Test Participation

SAT. The overall SAT participation rate decreased from the Class of 2007 to the Class of 2011 by 7.7 percentage points. Similar decreases in SAT participation rates were found for Male and Female graduates, while greater decreases were found for special services subgroups. Among racial/ethnic groups, Asian and White graduates showed consistently higher SAT participation rates than African American and Hispanic graduates for the Classes of 2007 to 2009; the participation rates for all racial/ethnic groups remained steady across the three years. For the Classes of 2010 and 2011, Asian, White, and Two or More Races graduates also showed higher SAT participation rates than African American and Hispanic graduates; the participation rates for all racial/ethnic groups were the same or similar between the two years.

Examining the SAT-only group, a steeper downward trend in SAT participation was observed; the rate dropped by 14.1 percentage points from the Class of 2007 to the Class of 2011. Similar decreases in SAT participation rates also were found for Male, Female, and special education graduates while greater decreases were found for FARMS and ESOL groups. A decrease in SAT participation for SAT-only takers also was found across racial/ethnic groups from 2007 to 2009, whereas there was a slight increase in SAT participation for SAT-only takers between the Classes of 2010 and 2011.

ACT. In contrast to the downward trend for SAT participation, the overall ACT participation rate increased from the Class of 2007 to the Class of 2011 by 11.9 percentage points for all ACT takers and by 5.4 percentage points for ACT-only takers. Similar increases in ACT participation rates also were found for gender and special services subgroups for all ACT takers and ACT-only takers. Although the increase in participation was larger for all ACT takers than for ACT-only takers, the participation rate for ACT-only takers increased multiple times from the Classes of 2007 to 2011 for all graduates and gender and special services groups.

An increase from the Classes of 2007 to 2009 in ACT participation also was found across racial/ethnic groups for all ACT takers and ACT-only takers, whereas the participation rate remained relatively steady between the Classes of 2010 and 2011 across racial/ethnic groups.

ACT and SAT. A relatively moderate increase in the participation rate of both the ACT and SAT was observed (6.4 percentage points). Male graduates were less likely than Female graduates to take both tests, but the participation rate of Male graduates increased more than Female graduates over the years. The percentage of graduates taking both the ACT and SAT doubled for the FARMS group and increased more than 10 times for the ESOL group across the years; there also was a small increase for the special education group in the participation of both tests.

Increases in graduates taking both the SAT and ACT also was found across racial/ethnic groups from 2007 to 2009. For the Classes of 2010 and 2011, the percentage of graduates taking both examinations decreased for all racial/ethnic groups except Asian test takers.

Trends of College Entrance Test Performance

SAT. The average SAT composite score significantly increased from 2007 to 2011 for all graduates (16 points), Male (18 points) and Female (16 points) graduates, and the FARMS (57 points) and ESOL (94 points) groups for all SAT takers. Among SAT-only takers, there was a larger and significant five-year increase for all graduates (26 points), Male (21 points) and Female (32 points) graduates, and the FARMS (62 points) and ESOL (115 points) groups. However, the five-year mean score change for all SAT takers and SAT-only takers was not significant among graduates receiving special education services.

Results in average SAT mean composite score changes were mixed for racial/ethnic groups. For all SAT takers and SAT-only takers, the mean composite scores from the Classes of 2007 to 2009 increased for Asian graduates, remained similar for African American and White graduates, and decreased for Hispanic graduates. The average composite SAT scores for all racial and ethnic groups were comparable between the Classes of 2010 and 2011, with the exception of a 21-point increase for the Two or More Races group who took the SAT only.

ACT. The five-year change in average ACT composite scores was not noticeable due to lack of variation and smaller range in the ACT composite score (36 the highest possible score). However, the one-point or less decrease over the years in the average ACT composite scores was significant for all ACT takers and all Female ACT takers. For ACT-only takers, there was a significant one-point increase for Female graduates.

Associations of Performance with Participation on College Entrance Tests

Graduates who took both the ACT and SAT significantly outperformed those who took the ACT only by about two points on the ACT composite score for the Classes of 2010 and 2011, after controlling for student demographic and special services variables. The adjusted mean difference in the ACT between the two groups of students had a small effect size for both graduating classes.

Graduates who took both ACT and SAT and those who took the SAT only showed comparable performances on the SAT, after controlling for student demographic and special service variables. The adjusted mean difference in SAT composite scores between the two groups of students was not significant for both Classes of 2010 and 2011.

Associations of College Entrance Test Participation with GPA

For the Classes of 2010 and 2011, graduates who took the ACT only tended to have a lower GPA than those who took the SAT only or both tests. Specifically, less than 40% of ACT-only takers had a GPA of B or higher, whereas more than one half of SAT-only testers and more than two thirds of graduates taking both tests had a GPA of B or higher in both graduating classes.

Recommendations

- Schools should use the college readiness monitoring tool to monitor and prepare students for both the ACT and SAT.
- The school district should consider providing emphasis on ACT performance similar to the SAT.
- As a follow-up study to this research, the college readiness M-STAT team should examine why there was a substantial increase in ACT-only participation in certain high schools.

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Appendix A

Table A1
College Entrance Test (SAT) Participation of the MCPS Classes of 2007 to 2011 by High School

	Number of graduates					*N* took SAT					% Took SAT				
High school	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011
All[a]	9702	9876	9829	10050	9932	7660	7274	7662	7179	7081	79	73.7	78	71.4	71.3
BCC	410	402	414	412	412	339	327	349	328	346	82.7	81.3	84.3	79.6	84.4
Blair	658	650	556	597	579	533	502	441	457	463	81.0	77.2	79.3	76.5	80.0
Blake	401	442	455	380	420	340	327	387	269	328	84.8	74.0	85.1	70.8	78.1
Churchill	524	497	515	531	495	484	411	448	460	411	92.4	82.7	87.0	86.6	83.0
Clarksburg	--	247	338	371	358	--	115	263	255	239	--	46.6	77.8	68.7	66.8
Damascus	442	359	331	365	321	320	252	268	256	214	72.4	70.2	81.0	70.1	66.7
Einstein	383	318	319	315	320	262	223	196	162	139	68.4	70.1	61.4	51.4	43.4
Gaithersburg	428	479	419	415	391	326	310	322	251	233	76.2	64.7	76.8	60.5	59.6
Kennedy	334	302	267	315	333	227	227	177	170	183	68.0	75.2	66.3	54.0	55.0
Magruder	466	483	439	471	404	364	334	320	337	278	78.1	69.2	72.9	71.5	68.8
Northwest	430	440	486	444	478	349	323	386	329	323	81.2	73.4	79.4	74.1	67.6
Northwood	--	294	270	262	274	--	178	142	126	143	--	60.5	52.6	48.1	52.2
Paint Branch	396	363	365	418	421	310	271	296	309	322	78.3	74.7	81.1	73.9	76.5
Poolesville	192	217	203	266	266	155	165	152	232	231	80.7	76.0	74.9	87.2	86.8
Quince Orchard	433	392	366	413	419	341	294	288	272	284	78.8	75.0	78.7	65.9	67.8
R. Montgomery	444	432	398	493	457	353	313	307	364	367	79.5	72.5	77.1	73.8	80.3
Rockville	278	266	273	260	276	202	166	213	187	193	72.7	62.4	78.0	71.9	69.9
Seneca Valley	334	290	284	270	274	227	175	194	176	172	68.0	60.3	68.3	65.2	62.8
Sherwood	515	497	508	493	492	416	397	420	384	380	80.8	79.9	82.7	77.9	77.2
Springbrook	438	374	458	388	386	340	268	342	268	270	77.6	71.7	74.7	69.1	69.9
Walter Johnson	401	449	447	458	480	331	373	379	361	385	82.5	83.1	84.8	78.8	80.2
Watkins Mill	400	351	361	299	345	269	232	259	164	146	67.3	66.1	71.7	54.8	42.3
Wheaton	300	242	266	289	244	225	187	187	146	131	75.0	77.3	70.3	50.5	53.7
Whitman	438	460	419	465	455	402	404	365	390	400	91.8	87.8	87.1	83.9	87.9
Wootton	572	563	612	605	589	529	495	549	518	491	92.5	87.9	89.7	85.6	83.4

Note. Results are not reported (--) for the years in which schools did not have graduating classes. The results, calculated based on the total number of June graduates, might not match the already published results in the 2011 SAT memorandum which included all graduating seniors in Classes of 2010 and 2011.
[a]Graduates enrolled in an MCPS high school in June of their graduation year, including graduates enrolled in special schools during Grade 12.

Table A2
College Entrance Test (ACT) Participation of the MCPS Classes of 2007 to 2011 by High School

	Number of graduates					*N* took ACT					% Took ACT				
High school	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011
All[a]	9702	9876	9829	10050	9932	1737	2342	2519	3026	2957	17.9	23.7	25.6	30.1	29.8
BCC	410	402	414	412	412	114	156	161	183	160	27.8	38.8	38.9	44.4	38.8
Blair	658	650	556	597	579	97	119	109	132	122	14.7	18.3	19.6	22.1	21.1
Blake	401	442	455	380	420	67	115	97	101	96	16.7	26.0	21.3	26.6	22.9
Churchill	524	497	515	531	495	173	210	224	218	219	33.0	42.3	43.5	41.1	44.2
Clarksburg	--	247	338	371	358	--	39	54	86	128	--	15.8	16.0	23.2	35.8
Damascus	442	359	331	365	321	55	73	96	126	113	12.4	20.3	29.0	34.5	35.2
Einstein	383	318	319	315	320	28	32	51	92	115	7.3	10.1	16.0	29.2	35.9
Gaithersburg	428	479	419	415	391	58	88	59	82	88	13.6	18.4	14.1	19.8	22.5
Kennedy	334	302	267	315	333	40	37	79	76	66	12.0	12.3	29.6	24.1	19.8
Magruder	466	483	439	471	404	101	126	130	104	86	21.7	26.1	29.6	22.1	21.3
Northwest	430	440	486	444	478	51	59	64	93	74	11.9	13.4	13.2	20.9	15.5
Northwood	--	294	270	262	274	--	57	57	69	96	--	19.4	21.1	26.3	35.0
Paint Branch	396	363	365	418	421	38	42	51	81	68	9.6	11.6	14.0	19.4	16.2
Poolesville	192	217	203	266	266	68	96	90	141	108	35.4	44.2	44.3	53.0	40.6
Quince Orchard	433	392	366	413	419	120	105	126	146	129	27.7	26.8	34.4	35.4	30.8
R. Montgomery	444	432	398	493	457	64	91	91	121	102	14.4	21.1	22.9	24.5	22.3
Rockville	278	266	273	260	276	20	32	49	69	64	7.2	12.0	17.9	26.5	23.2
Seneca Valley	334	290	284	270	274	42	44	50	52	76	12.6	15.2	17.6	19.3	27.7
Sherwood	515	497	508	493	492	109	157	149	165	150	21.2	31.6	29.3	33.5	30.5
Springbrook	438	374	458	388	386	49	58	104	120	105	11.2	15.5	22.7	30.9	27.2
Walter Johnson	401	449	447	458	480	113	142	122	147	124	28.2	31.6	27.3	32.1	25.8
Watkins Mill	400	351	361	299	345	51	50	69	98	138	12.8	14.2	19.1	32.8	40.0
Wheaton	300	242	266	289	244	25	39	45	92	63	8.3	16.1	16.9	31.8	25.8
Whitman	438	460	419	465	455	95	156	146	161	167	21.7	33.9	34.8	34.6	36.7
Wootton	572	563	612	605	589	156	217	245	268	298	27.3	38.5	40.0	44.3	50.6

Note. Results are not reported (--) for the years in which schools did not have graduating classes.
[a]Graduates enrolled in an MCPS high school in June of their graduation year, including graduates enrolled in special schools during Grade 12.

Table A3
College Entrance Test (SAT only) Participation of the MCPS Classes of 2007 to 2011 by High School

	Number of graduates					*N* took SAT only					% Took SAT only				
High school	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011
All[a]	9702	9876	9829	10050	9932	6061	5288	5468	4746	4804	62.5	53.5	55.6	47.2	48.4
BCC	410	402	414	412	412	237	188	214	183	215	57.8	46.8	51.7	44.4	52.2
Blair	658	650	556	597	579	447	390	335	337	354	67.9	60.0	60.3	56.4	61.1
Blake	401	442	455	380	420	277	231	295	183	246	69.1	52.3	64.8	48.2	58.6
Churchill	524	497	515	531	495	326	239	268	280	242	62.2	48.1	52.0	52.7	48.9
Clarksburg	--	247	338	371	358	--	91	216	187	145	--	36.8	63.9	50.4	40.5
Damascus	442	359	331	365	321	271	184	176	153	126	61.3	51.3	53.2	41.9	39.3
Einstein	383	318	319	315	320	237	198	155	105	84	61.9	62.3	48.6	33.3	26.3
Gaithersburg	428	479	419	415	391	273	231	263	185	153	63.8	48.2	62.8	44.6	39.1
Kennedy	334	302	267	315	333	193	193	117	118	134	57.8	63.9	43.8	37.5	40.2
Magruder	466	483	439	471	404	268	225	202	249	203	57.5	46.6	46.0	52.9	50.2
Northwest	430	440	486	444	478	301	271	324	246	269	70.0	61.6	66.7	55.4	56.3
Northwood	--	294	270	262	274	--	137	105	88	89	--	46.6	38.9	33.6	32.5
Paint Branch	396	363	365	418	421	275	237	250	243	263	69.4	65.3	68.5	58.1	62.5
Poolesville	192	217	203	266	266	89	75	76	102	128	46.4	34.6	37.4	38.3	48.1
Quince Orchard	433	392	366	413	419	229	206	178	160	183	52.9	52.6	48.6	38.7	43.7
R. Montgomery	444	432	398	493	457	296	239	228	250	274	66.7	55.3	57.3	50.7	60.0
Rockville	278	266	273	260	276	184	148	171	132	142	66.2	55.6	62.6	50.8	51.4
Seneca Valley	334	290	284	270	274	189	143	155	140	119	56.6	49.3	54.6	51.9	43.4
Sherwood	515	497	508	493	492	316	261	281	241	253	61.4	52.5	55.3	48.9	51.4
Springbrook	438	374	458	388	386	296	223	252	175	188	67.6	59.6	55.0	45.1	48.7
Walter Johnson	401	449	447	458	480	226	252	269	241	287	56.4	56.1	60.2	52.6	59.8
Watkins Mill	400	351	361	299	345	223	188	195	99	89	55.8	53.6	54.0	33.1	25.8
Wheaton	300	242	266	289	244	202	157	152	87	92	67.3	64.9	57.1	30.1	37.7
Whitman	438	460	419	465	455	313	273	247	270	268	71.5	59.3	58.9	58.1	58.9
Wootton	572	563	612	605	589	379	304	332	287	251	66.3	54.0	54.2	47.4	42.6

Note. Results are not reported (--) for the years in which schools did not have graduating classes.
[a]Graduates enrolled in an MCPS high school in June of their graduation year, including graduates enrolled in special schools during Grade 12.

Table A4
College Entrance Test (ACT only) Participation of the MCPS Classes of 2007 to 2011 by High School

	Number of graduates					*N* took ACT only					% Took ACT only				
High school	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011
All[a]	9702	9876	9829	10050	9932	138	356	325	593	680	1.4	3.6	3.3	5.9	6.8
BCC	410	402	414	412	412	--	--	26	38	29	≤5.0	≤5.0	6.3	9.2	7.0
Blair	658	650	556	597	579	--	--	--	--	--	≤5.0	--	--	≤5.0	≤5.0
Blake	401	442	455	380	420	--	--	--	--	--	--	≤5.0	--	≤5.0	≤5.0
Churchill	524	497	515	531	495	--	38	44	38	50	≤5.0	7.6	8.5	7.2	10.1
Clarksburg	---	247	338	371	358	---	--	--	--	34	---	6.1	--	≤5.0	9.5
Damascus	442	359	331	365	321	--	--	--	23	25	--	--	--	6.3	7.8
Einstein	383	318	319	315	320	--	--	--	35	60	--	--	≤5.0	11.1	18.8
Gaithersburg	428	479	419	415	391	--	--	--	--	--	--	--	--	≤5.0	--
Kennedy	334	302	267	315	333	--	--	--	24	--	--	--	7.1	7.6	5.1
Magruder	466	483	439	471	404	--	--	--	--	--	--	≤5.0	≤5.0	≤5.0	≤5.0
Northwest	430	440	486	444	478	--	--	--	--	--	--	--	--	≤5.0	≤5.0
Northwood	---	294	270	262	274	---	--	--	31	42	---	5.4	7.4	11.8	15.3
Paint Branch	396	363	365	418	421	--	--	--	--	--	--	--	--	≤5.0	--
Poolesville	192	217	203	266	266	--	--	--	--	--	--	--	6.9	≤5.0	--
Quince Orchard	433	392	366	413	419	--	--	--	34	28	--	≤5.0	≤5.0	8.2	6.7
R. Montgomery	444	432	398	493	457	--	--	--	--	--	--	≤5.0	≤5.0	--	--
Rockville	278	266	273	260	276	--	--	--	--	--	--	5.3	--	5.4	≤5.0
Seneca Valley	334	290	284	270	274	--	--	--	--	23	--	≤5.0	≤5.0	5.9	8.4
Sherwood	515	497	508	493	492	--	--	--	--	--	--	≤5.0	≤5.0	≤5.0	≤5.0
Springbrook	438	374	458	388	386	--	--	--	27	23	--	≤5.0	≤5.0	7.0	6.0
Walter Johnson	401	449	447	458	480	--	--	--	27	26	--	≤5.0	≤5.0	5.9	5.4
Watkins Mill	400	351	361	299	345	--	--	--	33	81	--	--	--	11.0	23.5
Wheaton	300	242	266	289	244	--	--	--	33	24	--	--	≤5.0	11.4	9.8
Whitman	438	460	419	465	455	--	25	28	41	35	--	5.4	6.7	8.8	7.7
Wootton	572	563	612	605	589	--	--	--	37	58	--	≤5.0	≤5.0	6.1	9.8

Note. Results are not reported (---) for the years in which schools did not have graduating classes. To comply with federal requirements, any percentage rates greater than or equal to 95.0% or less than or equal to 5.0% is noted as ≥95.0 or ≤5.0, respectively, and the number of students meeting or exceeding the benchmark is not reported (--). Additionally, results are not reported (--) for groups with fewer than 10 test takers. For groups of between 10 and 20 test takers, only the percentage rate is reported.
[a]Graduates enrolled in an MCPS high school in June of their graduation year, including graduates enrolled in special schools during Grade 12.

Table A5
College Entrance Test (SAT & ACT) Participation of the MCPS Classes of 2007 to 2011 by High School

	Number of graduates					*N* took SAT & ACT					% Took SAT & ACT				
High school	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011
All[a]	9702	9876	9829	10050	9932	1599	1986	2194	2433	2277	16.5	20.1	22.3	24.2	22.9
BCC	410	402	414	412	412	102	139	135	145	131	24.9	34.6	32.6	35.2	31.8
Blair	658	650	556	597	579	86	112	106	120	109	13.1	17.2	19.1	20.1	18.8
Blake	401	442	455	380	420	63	96	92	86	82	15.7	21.7	20.2	22.6	19.5
Churchill	524	497	515	531	495	158	172	180	180	169	30.2	34.6	35.0	33.9	34.1
Clarksburg	--	247	338	371	358	--	24	47	68	94	--	9.7	13.9	18.3	26.3
Damascus	442	359	331	365	321	49	68	92	103	88	11.1	18.9	27.8	28.2	27.4
Einstein	383	318	319	315	320	25	25	41	57	55	6.5	7.9	12.9	18.1	17.2
Gaithersburg	428	479	419	415	391	53	79	59	66	80	12.4	16.5	14.1	15.9	20.5
Kennedy	334	302	267	315	333	34	34	60	52	49	10.2	11.3	22.5	16.5	14.7
Magruder	466	483	439	471	404	96	109	118	88	75	20.6	22.6	26.9	18.7	18.6
Northwest	430	440	486	444	478	48	52	62	83	54	11.2	11.8	12.8	18.7	11.3
Northwood	--	294	270	262	274	--	41	37	38	54	--	13.9	13.7	14.5	19.7
Paint Branch	396	363	365	418	421	35	34	46	66	59	8.8	9.4	12.6	15.8	14.0
Poolesville	192	217	203	266	266	66	90	76	130	103	34.4	41.5	37.4	48.9	38.7
Quince Orchard	433	392	366	413	419	112	88	110	112	101	25.9	22.4	30.1	27.1	24.1
R. Montgomery	444	432	398	493	457	57	74	79	114	93	12.8	17.1	19.8	23.1	20.4
Rockville	278	266	273	260	276	18	18	42	55	51	6.5	6.8	15.4	21.2	18.5
Seneca Valley	334	290	284	270	274	38	32	39	36	53	11.4	11.0	13.7	13.3	19.3
Sherwood	515	497	508	493	492	100	136	139	143	127	19.4	27.4	27.4	29.0	25.8
Springbrook	438	374	458	388	386	44	45	90	93	82	10.0	12.0	19.7	24.0	21.2
Walter Johnson	401	449	447	458	480	105	121	110	120	98	26.2	26.9	24.6	26.2	20.4
Watkins Mill	400	351	361	299	345	46	44	64	65	57	11.5	12.5	17.7	21.7	16.5
Wheaton	300	242	266	289	244	23	30	35	59	39	7.7	12.4	13.2	20.4	16.0
Whitman	438	460	419	465	455	89	131	118	120	132	20.3	28.5	28.2	25.8	29.0
Wootton	572	563	612	605	589	150	191	217	231	240	26.2	33.9	35.5	38.2	40.7

Note. Results are not reported (--) for the years in which schools did not have graduating classes.
[a]Graduates enrolled in an MCPS high school in June of their graduation year, including graduates enrolled in special schools during Grade 12.

Table A6
College Entrance Test (Most Recent SAT and ACT Scores as of April of Graduation year) Performance of the MCPS Classes of 2007 to 2011 by High School

High school	Number of graduates					Mean SAT composite score[b]					Mean ACT composite score				
	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011
All[a]	9702	9876	9829	10050	9932	1624	1616	1615	1653	1640	24	24	23	23	23
BCC	410	402	414	412	412	1745	1751	1729	1734	1747	24	26	25	24	25
Blair	658	650	556	597	579	1679	1672	1702	1727	1729	24	25	24	24	24
Blake	401	442	455	380	420	1559	1490	1560	1546	1479	21	21	21	22	21
Churchill	524	497	515	531	495	1821	1820	1813	1824	1825	26	27	26	27	27
Clarksburg	--	247	338	371	358	--	1547	1459	1491	1548	--	21	21	20	21
Damascus	442	359	331	365	321	1570	1602	1605	1627	1642	22	22	22	22	23
Einstein	383	318	319	315	320	1454	1475	1503	1617	1611	23	23	20	20	19
Gaithersburg	428	479	419	415	391	1469	1514	1457	1496	1506	22	23	23	20	21
Kennedy	334	302	267	315	333	1427	1342	1448	1445	1422	19	18	19	19	18
Magruder	466	483	439	471	404	1584	1602	1582	1571	1577	24	23	23	23	24
Northwest	430	440	486	444	478	1522	1527	1563	1550	1557	22	23	23	21	22
Northwood	--	294	270	262	274	--	1401	1534	1492	1448	--	19	18	20	19
Paint Branch	396	363	365	418	421	1498	1489	1498	1534	1473	21	21	21	22	21
Poolesville	192	217	203	266	266	1736	1674	1728	1813	1846	26	25	25	27	27
Quince Orchard	433	392	366	413	419	1627	1635	1601	1633	1625	24	23	23	23	22
R. Montgomery	444	432	398	493	457	1781	1797	1794	1759	1778	23	26	25	27	26
Rockville	278	266	273	260	276	1579	1571	1538	1601	1523	24	21	21	21	20
Seneca Valley	334	290	284	270	274	1475	1466	1483	1531	1442	20	19	18	20	20
Sherwood	515	497	508	493	492	1608	1576	1574	1616	1600	23	23	23	23	23
Springbrook	438	374	458	388	386	1533	1479	1445	1522	1465	20	20	19	19	19
Walter Johnson	401	449	447	458	480	1733	1765	1722	1754	1749	24	26	25	25	26
Watkins Mill	400	351	361	299	345	1451	1407	1398	1493	1499	20	20	19	19	18
Wheaton	300	242	266	289	244	1326	1314	1323	1395	1342	19	17	17	19	20
Whitman	438	460	419	465	455	1880	1876	1872	1879	1858	26	27	27	27	27
Wootton	572	563	612	605	589	1785	1784	1808	1822	1801	27	26	27	27	26

Note. Results are not reported (--) for the years in which schools did not have graduating classes. Mean SAT and ACT composite scores are rounded to nearest integers.
[a]Graduates enrolled in an MCPS high school in June of their graduation year, including graduates enrolled in special schools during Grade 12.
[b]The results, calculated based on the total number of June graduates, might not match the already published results in the 2011 SAT memorandum which included all graduating seniors in the Classes of 2010 and 2011.

Table A7
College Entrance Test (Most Recent SAT-only and ACT-only Scores as of April of Graduation year) Performance of the MCPS Classes of 2007 to 2011 by High School

High school	Number of graduates					Mean SAT composite score					Mean ACT composite score				
	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011
All[a]	9702	9876	9829	10050	9932	1615	1593	1608	1650	1641	20	21	21	20	20
BCC	410	402	414	412	412	1759	1710	1757	1781	1785	20	25	26	24	24
Blair	658	650	556	597	579	1669	1643	1703	1732	1727	17	20	20	19	20
Blake	401	442	455	380	420	1565	1481	1561	1514	1485	19	20	16	18	19
Churchill	524	497	515	531	495	1847	1820	1823	1824	1837	23	26	25	27	27
Clarksburg	--	247	338	371	358	--	1537	1448	1504	1580	--	19	16	17	18
Damascus	442	359	331	365	321	1575	1613	1625	1636	1689	18	15	19	18	19
Einstein	383	318	319	315	320	1435	1448	1515	1657	1651	18	20	17	18	17
Gaithersburg	428	479	419	415	391	1464	1487	1433	1488	1486	22	23	.	18	18
Kennedy	334	302	267	315	333	1431	1346	1459	1451	1438	16	13	14	16	17
Magruder	466	483	439	471	404	1570	1576	1578	1567	1549	20	21	21	20	24
Northwest	430	440	486	444	478	1510	1506	1556	1571	1542	16	20	14	17	18
Northwood	--	294	270	262	274	--	1396	1561	1498	1465	--	17	15	19	17
Paint Branch	396	363	365	418	421	1497	1486	1499	1515	1464	19	20	24	18	18
Poolesville	192	217	203	266	266	1702	1661	1708	1790	1870	24	23	21	20	21
Quince Orchard	433	392	366	413	419	1601	1626	1599	1666	1658	19	21	20	20	20
R. Montgomery	444	432	398	493	457	1808	1795	1798	1718	1776	18	23	22	27	20
Rockville	278	266	273	260	276	1576	1571	1546	1619	1546	22	17	18	19	17
Seneca Valley	334	290	284	270	274	1471	1486	1524	1527	1436	16	16	17	18	18
Sherwood	515	497	508	493	492	1606	1561	1560	1607	1598	18	20	18	19	18
Springbrook	438	374	458	388	386	1544	1477	1461	1565	1491	17	18	20	16	18
Walter Johnson	401	449	447	458	480	1744	1761	1719	1747	1739	23	26	26	23	23
Watkins Mill	400	351	361	299	345	1442	1399	1410	1524	1527	16	19	14	16	17
Wheaton	300	242	266	289	244	1319	1308	1329	1419	1334	17	14	16	18	18
Whitman	438	460	419	465	455	1913	1891	1888	1905	1878	20	26	27	26	28
Wootton	572	563	612	605	589	1784	1790	1812	1806	1827	25	23	26	25	26

Note. Results are not reported (--) for the years in which schools did not have graduating classes. Mean SAT and ACT composite scores are rounded to nearest integers.
[a]Graduates enrolled in an MCPS high school in June of their graduation year, including graduates enrolled in special schools during Grade 12.

Appendix B

Table B1
College Entrance Test Participation and Performance (Highest SAT and ACT Scores)
of all Graduating Seniors from MCPS Classes of 2010 to 2011 by High School

	Class of 2010							Class of 2011						
High school	N Graduates[a]	N Took SAT	% Took SAT	Highest SAT composite score	N Took ACT	% Took ACT	Highest ACT composite score	N Graduates[a]	N Took SAT	% Took SAT	Highest SAT composite score	N Took ACT	% Took ACT	Highest ACT composite score
All[a]	10352	7333	70.8	1661	3049	29.5	23	10158	7174	70.6	1651	2976	29.3	23
BCC	425	336	79.1	1745	186	43.8	25	416	352	84.6	1755	160	38.5	25
Blair	619	471	76.1	1728	135	21.8	24	590	470	79.7	1737	123	20.8	25
Blake	397	275	69.3	1551	101	25.4	22	431	333	77.3	1490	98	22.7	21
Churchill	536	461	86.0	1835	218	40.7	27	495	412	83.2	1841	219	44.2	27
Clarksburg	380	259	68.2	1511	86	22.6	20	369	240	65.0	1559	128	34.7	21
Damascus	368	257	69.8	1638	126	34.2	22	323	214	66.3	1658	113	35.0	23
Einstein	328	166	50.6	1615	92	28.0	20	329	142	43.2	1618	116	35.3	19
Gaithersburg	429	260	60.6	1501	83	19.3	20	413	239	57.9	1514	88	21.3	22
Kennedy	323	175	54.2	1456	76	23.5	19	342	187	54.7	1425	66	19.3	19
Magruder	487	345	70.8	1580	106	21.8	22	409	280	68.5	1592	86	21.0	24
Northwest	456	336	73.7	1556	93	20.4	21	486	325	66.9	1576	76	15.6	22
Northwood	266	130	48.9	1500	70	26.3	21	285	149	52.3	1460	98	34.4	19
Paint Branch	435	316	72.6	1553	82	18.9	22	434	330	76.0	1481	69	15.9	21
Poolesville	272	236	86.8	1825	141	51.8	27	267	232	86.9	1857	108	40.4	27
Quince Orchard	417	275	65.9	1644	146	35.0	23	420	286	68.1	1634	129	30.7	22
R. Montgomery	514	376	73.2	1768	123	23.9	27	471	372	79.0	1782	102	21.7	27
Rockville	267	190	71.2	1604	69	25.8	21	283	195	68.9	1543	64	22.6	21
Seneca Valley	282	182	64.5	1534	52	18.4	21	283	175	61.8	1447	76	26.9	20
Sherwood	510	396	77.6	1621	169	33.1	23	505	389	77.0	1607	153	30.3	23
Springbrook	401	276	68.8	1522	122	30.4	19	393	274	69.7	1477	105	26.7	19
Walter Johnson	469	368	78.5	1761	148	31.6	25	489	391	80.0	1765	126	25.8	26
Watkins Mill	312	170	54.5	1498	100	32.1	19	353	148	41.9	1519	139	39.4	19
Wheaton	300	155	51.7	1399	92	30.7	19	251	132	52.6	1361	63	25.1	20
Whitman	468	393	84.0	1891	162	34.6	27	461	403	87.4	1870	168	36.4	27
Wootton	614	520	84.7	1838	268	43.6	27	599	494	82.5	1817	301	50.3	27

Note. Mean SAT and ACT composite scores are rounded to nearest integers. The results in this table match the results in the 2011 SAT memorandum.
[a]All graduating seniors, including graduates enrolled in special schools during Grade 12.