

October 2019

Office of Shared Accountability

MONTGOMERY COUNTY PUBLIC SCHOOLS, ROCKVILLE, MARYLAND



An Examination of the Impact of the George B. Thomas, Sr. Learning Academy Saturday School in Montgomery County Public Schools (2018 – 2019)



Prepared by:

Marcia L. Parrilla, Ph.D.

Applied Research Unit





ROCKVILLE, MARYLAND

850 Hungerford Drive
Rockville, Maryland 20850
301-740-3000

Dr. Jack R. Smith
Superintendent of Schools

Dr. Janet S. Wilson
Associate Superintendent, Office of Shared Accountability

Published for the Office of Shared Accountability
Copyright © 2019 Montgomery County Public Schools, Rockville, Maryland

Table of Contents

Executive Summary	iii
Summary of Methodology	iii
Summary of Findings.....	iii
Background.....	1
Methodology.....	1
Analytical Samples	2
Data analysis procedures.....	2
Propensity score computation.....	2
Computation of effect sizes	3
Results.....	3
Research Question 1: What are the demographic characteristics of students who participated in Saturday School during the 2018 - 2019 school year?	3
Research Question 2: What percentage of students who participated in Saturday School during 2018 – 2019 had high attendance in the program? What was the average additional hours of instruction Saturday School students received?.....	4
Research Question 3: To what extent did Saturday School participants meet Evidence of Learning attainment in literacy and mathematics?	5
Research Question 4: Is there a difference between Saturday School and Non-Saturday School participants with comparable demographic profiles on academic outcomes?.....	5
Evidence of Learning.....	8
Discussion.....	10

List of Tables

Table 1. Summary of Saturday School Student Performance on Academic Measures by Level.....vi

Table 2. Number and Percent of Saturday School Students by Student Group.....3

Table 3. Number and Percent of Saturday School Students by Student Group and Level.....4

Table 4. Number and Percent of Saturday School Students by Attendance and School Level.....4

Table 5. Number and Percent of Additional Instructional Hours by Level.....5

Table 6. Number and Percent of Saturday School Students who Met Evidence of Learning by Attendance.....5

Table 7. Adjusted Mean Spring MAP and PARCC Scores for Differences in Performance between Elementary High Attendance Saturday School and Elementary Non-Saturday School Participants.....6

Table 8. Adjusted Mean Spring MAP and PARCC Scores for Differences in Performance between Middle High Attendance Saturday School and Middle Non-Saturday School Participants.....8

Table 9. Adjusted Mean Spring MAP and PARCC Scores for Differences in Performance between High School High Attendance Saturday School and High School Non-Saturday School Participants.....8

Executive Summary

The Office of Shared Accountability conducted an outcome examination of the impact of the Saturday School on student performance. The George B. Thomas, Sr. Learning Academy Saturday School aims to reduce the achievement gap through acceleration of students' mastery of reading skills, language arts, mathematics, and test taking skills. Saturday School was designed to increase students' confidence and encourage high goal setting. Demographic characteristics of students who participated in Saturday School during 2018–2019 are included. Statistical analysis to determine the impact of Saturday School on academic outcomes was compared to nonparticipants are included in this report. The following research questions were examined:

1. What are the demographic characteristics of students who participated in Saturday School during the 2018–2019 school year?
2. What percentage of students who participated in Saturday School during 2018–2019 had high attendance in the program? What was the average additional hours of instruction Saturday School students received?
3. To what extent did Saturday School participants meet Evidence of Learning attainment in literacy and mathematics?
4. Is there a difference in academic outcomes between Saturday School and Non-Saturday School participants with comparable demographic profiles?

Summary of Methodology

Descriptive and inferential statistical analyses were used to answer the research questions. The first three research questions were answered with descriptive statistics. Research question 4 utilized analyses of covariance (ANCOVA), effect sizes, and chi square analyses to estimate the effect of Saturday School outcomes on student performance. Propensity score matching was used to determine a sample of control students to statistically control for the nonequivalence between groups before Saturday School participation. The control groups and Saturday School groups were statistically similar in Free and Reduced Price Meal System (FARMS) services, race/ethnicity, and previous academic performance.

Summary of Findings

What are the demographic characteristics of students who participated in Saturday School during the 2018 - 2019 school year?

There were 2,791 Montgomery County Public School students who participated in Saturday School during 2018–2019. Black or African American students represented 43.9% of Saturday School participants, Hispanic/Latino students represented 28.5%, Asian students represented 15.7%, White students represented 7.8%, and students of two or more races represented 3.8%. Approximately half (50.3%) of all Saturday School participants were recipients of FARMS

services, 14.1% of students received special education services, and 26% of students were identified as Limited English Proficient (LEP).

What percentage of students who participated in Saturday School during 2018–2019 had high attendance in the program? What was the average additional hours of instruction Saturday School students received?

Of the 2,791 Saturday School participants, 2,389 students (85.6%) attended at least half of the Saturday School sessions. Elementary students had the highest percentage of students who attended at least half of those sessions with 87.5%, followed by high school students with 84.6%, and middle school students with 81.7%. Approximately 70% of all students who participated in Saturday School received at least 35 instructional hours from Saturday School participation. Elementary students had the highest percentage of students to receive at least 35 additional hours of instruction and high school had the lowest percentage of students to receive at least 35 instructional hours. These data indicate that majority of Saturday School participants attended at least 17 sessions of the total 22 Saturday School sessions offered.

To what extent did Saturday School participants meet Evidence of Learning attainment in literacy and mathematics?

Seventy-five percent of Saturday School elementary participants that met Evidence of Learning (EOL) literacy attainment, and 77.4% met EOL mathematics attainment. Seventy eight percent of middle school Saturday School participants met EOL literacy, and 65.4% met EOL mathematics attainment. There were 74.0% of high school Saturday School participants who met Evidence of Learning literacy attainment and 68.5% met Evidence of Learning mathematics attainment.

Is there a difference in academic outcomes between Saturday School and Non-Saturday School participants with comparable demographic profiles?

Based on statistical analyses, Saturday School participation impacted some student outcomes. At the elementary school level, there was a significant impact of Saturday School participation on students' Measures of Academic Progress (MAP) and Partnership for Assessment of Readiness for College and Careers (PARCC) scores. There was a significant relationship between Saturday School participation and MAP Reading and PARCC English Language Arts (ELA) for middle school students. At the high school level, there were no statistically significant differences in GPA or MPA for Saturday School students compared to Non-Saturday School students. (See Table 1).

Table 1
 Summary of Saturday School Students' Performance on Academic Measures by Level

	MAP R	MAP M	PARCC ELA	PARCC Math	MPA/GPA	EOL Literacy	EOL Math
Elementary	✓	✖	✓	✓		✓	✓
FARMS	✓	✓	✓	✓			
Race/Ethnicity	✓	✓	✓	✓			
Middle	✓	▪	✓	▪	▪	▪	▪
FARMS	✓	✓	✓	✓	✓		
Race/Ethnicity	✓	✓	✓	✓	✓		
High					▪/✓	✓	✓
FARMS					✓/✓		
Race/Ethnicity					✓/✓		

Note. ✓ Saturday School participants performed significantly higher than nonparticipants.
 ✖ Saturday School participants performed significantly lower than nonparticipants.
 ▪ No significant difference between Saturday School participants and nonparticipants.

An Examination of the Impact of the George B. Thomas, Sr. Learning Academy Saturday School Program in Montgomery County Public Schools (2018–2019)

Marcia L. Parrilla, Ph.D.

Background

The George B. Thomas, Sr. Learning Academy Saturday School aims to reduce the achievement gap through acceleration of students' mastery of reading skills, language arts, mathematics, and test-taking skills. Saturday School was designed to increase students' confidence and encourage high goal setting.

The George B. Thomas, Sr. Learning Academy equips certified teachers with support and resources aligned to the Montgomery County Public Schools (MCPS) curriculum to provide students an opportunity to review instruction covered during the school week. Saturday School curriculum focuses on Reading, Language Arts, Mathematics, and test-taking skills for all students. High school students are offered additional support in Biology, Physics, and Chemistry, and test-taking skills for Advanced Placement exams.

Purpose

The purpose of this outcome study was to examine the impact of Saturday School participation on students' academic outcomes for those who attended during the 2018–2019 school year. Performance of participants on Measures of Academic Progress (MAP), Partnership for Assessment of Readiness for College and Careers (PARCC), Marking Period Averages (MPA), Grade Point Averages (GPA), and Evidence of Learning (EOL) attainment were compared to students who did not participate in Saturday School.

Methodology

Study Design

Saturday School students were not randomly assigned to participation, thus a quasi-experimental (nonequivalent comparison-group) study design was applied to address the following research questions:

1. What are the demographic characteristics of students who participated in Saturday School during the 2018–2019 school year?
2. What percentage of students who participated in Saturday School during 2018–2019 had high attendance in the program? What was the average additional hours of instruction Saturday School students received?

3. To what extent did Saturday School participants meet Evidence of Learning attainment in literacy and mathematics?
4. Is there a difference in academic outcomes between Saturday School and Non-Saturday School participants with comparable demographic profiles?

Analytical Samples

Research questions 1–3 were analyzed from a sample of 2018–2019 Saturday School participants. Research question 4 was analyzed using a sample of 2018–2019 Saturday School participants that attended at least 50% of all Saturday School sessions. To address research question 4, a comparison group of Non-Saturday School participants were computed using propensity score matching.

Data analysis procedures

Descriptive statistics were used to determine the demographic characteristics and Saturday School attendance. Analyses of covariance (ANCOVA), effect sizes, and chi square analyses were used to determine the effect of Saturday School on student performance. Student performance was measured using student performance on MAP, PARCC, MPA, GPA, and EOL attainment.

ANCOVA analyses was used to accurately determine the impact of Saturday School attendance on student performance because it allows for student characteristics to be isolated that may otherwise influence academic outcomes. The independent variable for the study was Saturday School participation, and the dependent variables were spring 2019 MAP RIT scores (elementary and middle), 2019 PARCC scale scores (elementary and middle), Quarter 4 Marking Period Average (middle and high), and GPA (high school). The variables that were isolated (or covariates) were race/ethnicity and Free and Reduced Price Meal Systems (FARMS) services, and prior year's academic performance. The prior academic performance measure varied by school level. Student spring 2018 MAP Reading and Mathematics RIT scores was used for elementary students, spring 2018 MAP Reading RIT was used for middle school students, and high school students' prior performance was 2018 Quarter 4 MPA.

Chi square analysis was conducted to determine if participation in Saturday School was related to EOL attainment. Thus, the essential question determines if the probability of meeting EOL attainment is significantly different for Saturday School participants compared to students who did not attend Saturday School.

Propensity score computation. Propensity score matching is a technique used to balance research groups for statistical comparisons. Propensity scores are calculated to determine the probability that a participant will be assigned to either an experimental or control group based on a set of variables. For the current study, propensity score matching gives a probability score that a student would attend Saturday School based on race/ethnicity, FARMS services, and prior year's academic performance. Elementary student prior performance was measured using Spring 2018 MAP RIT scores (Reading and Mathematics), middle school prior academic performance was Spring 2018 MAP Reading RIT scores, and high school prior year's academic performance was 2018 Quarter 4 MPA.

Computation of effect sizes. Effect size is a magnitude measure that allows for the interpretation of strength of impact. Effect size was computed for this study to determine the weight of Saturday School significance on student performance for research question 4. Effect size includes statistical considerations, including sample size to determine significance. Effect sizes range from 0 to 1, partial η^2 conventional cutoffs are .01 (small), .06 (medium), and .14 (large) for ANCOVA analyses. Cramer’s V statistic was used to estimate effect sizes for chi-square analyses.

Results

Research Question 1: What are the demographic characteristics of students who participated in Saturday School during the 2018–2019 school year?

During the 2018–2019 school year, there was a total of 2,791 students who were enrolled in The George B. Thomas, Sr. Learning Academy, Saturday School program. Overall, most of the students who participated in Saturday School were Black or African American and Hispanic/Latino, with 44 percent and 29 percent, respectively (see Table 2). Approximately half of the students who participated in Saturday School were recipients of FARMS services. Slightly less than 15 percent of students received special education services, and 26 percent of students were identified as Limited English Proficient (LEP).

Table 2
Number and Percent of Saturday School Students by Student Group

Student Group	n	%
Asian	438	15.7
Black or African American	1225	43.9
White	217	7.8
Hispanic/Latino	796	28.5
Two or More Races	107	3.8
Total Saturday School	2791	100
FARMS	1405	50.3
Special Education	394	14.1
LEP	727	26.0

Note. Data for students identified as American Indian or Pacific Islander are not reported individually, but included in the total number of students.

School Level. Elementary students who attended Saturday School represented approximately half of all student participants (58.0%), middle school students represented 22.9%, and high school students represented 19.1%. At all school levels, underrepresented racial/ethnic group member students (i.e., Black or African American and Hispanic/Latino) represented majority of the students enrolled in Saturday School. A little more than half of the students enrolled in Saturday School at the elementary level (55.8%) were recipients of FARMS services. There was approximately a 10 percent point difference in FARMS students among elementary, middle, and

high school with 45.2% FARMS students in middle school, and 40% in high school. Across levels, students receiving special education services represented no more than 15% of the total students enrolled in Saturday School, and most of the students receiving LEP services were at the elementary level (34.5%) (See Table 3).

Table 3
Number and Percent of Saturday School Students by Student Group and School Level

<u>Student Group</u>	<u>Elementary</u>		<u>Middle</u>		<u>High</u>	
	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>
Asian	252	15.6	113	17.7	73	13.7
Black or African American	720	44.5	275	43.0	230	43.2
White	105	6.5	51	8.0	61	11.4
Hispanic/Latino	481	29.7	168	26.3	147	27.6
Two or More Races	53	3.3	32	5.0	22	4.1
Total Saturday School	1618	58.0	640	22.9	533	19.1
FARMS	903	55.8	289	45.2	213	40.0
Special Education	240	14.8	95	14.8	59	11.1
LEP	558	34.5	103	16.1	66	12.4

Note. Data for students identified as American Indian or Pacific Islander are not reported individually, but included in the total number of students.

Research Question 2: What percentage of students who participated in Saturday School during 2018–2019 had high attendance in the program? What was the average additional hours of instruction Saturday School students received?

There were a total of 22 Saturday School sessions during the 2018–2019 school year. Each Saturday School session included an hour of reading instruction and an hour of mathematics instruction. Thus, there was an opportunity for participants to receive 44 additional hours of the MCPS curriculum in mathematics and reading if an individual attended all 22 sessions.

The majority of students who participated in Saturday School attended at least half of all sessions throughout the school year. Elementary students had the highest percentage (87.5%) of students who attended at least 11 Saturday School sessions. Middle and high school students who attended at least 11 sessions were 81.7% and 84.6%, respectively (See Table 4).

Table 4
Number and Percent of Saturday School Students by Attendance and School Level

<u>School Level</u>	<u>Less than 50%</u>		<u>50% or More</u>	
	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>
Elementary	203	12.5	1415	87.5
Middle	117	18.3	523	81.7
High	82	15.4	451	84.6
Total	402	14.4	2389	85.6

The majority (70.4%) of students received at least 35 instructional hours during Saturday School participation. The highest percentage of students receiving at least 35 instructional hours was at the elementary school level (73.8%), and the lowest percentage were at the high school level (63.4%). These statistics indicate that students who attended at least half of total Saturday School sessions were more likely to have attended at least 17 of the 22 sessions (See Table 5).

Table 5
Number and Percent of Additional Instructional Hours by School Level

<u>School Level</u>	<u>0 – 14 Hours</u>		<u>15 – 24 Hours</u>		<u>25 – 34 Hours</u>		<u>35 – 44 Hours</u>	
	n	%	n	%	n	%	n	%
Elementary	99	6.1	151	9.3	174	10.8	1194	73.8
Middle	49	7.7	84	13.1	75	11.7	432	67.5
High	44	8.3	61	11.4	90	16.9	338	63.4
Total	192	6.9	296	10.6	339	12.1	1964	70.4

Research Question 3: To what extent did Saturday School participants meet Evidence of Learning attainment in literacy and mathematics?

As displayed in Table 6, the majority of students who were enrolled in Saturday School met EOL in Literacy and Math. Approximately 75% of students in elementary, middle, and high school met EOL in Literacy. There were about 77% of students at the elementary school level meeting EOL in mathematics, at least 65% at the middle school level, and 70% of all high school students also met EOL mathematics. (See Table 6).

Table 6
Number and Percent of Saturday School Students who Met Evidence of Learning by Attendance

<u>School Level</u>	<u>Literacy</u>		<u>Mathematics</u>	
	n	%	n	%
Elementary	1186	74.8	1227	77.4
Less than 50% Attendance	136	68.7	142	71.7
50% or More Attendance	1050	75.7	1085	78.2
Middle	489	78.4	408	65.4
Less than 50% Attendance	83	72.8	68	59.6
50% or More Attendance	406	79.6	340	66.7
High	454	85.8	371	70.1
Less than 50% Attendance	66	80.5	43	52.4
50% or More Attendance	388	86.8	328	73.4

Research Question 4: Is there a difference between Saturday School and Non-Saturday School participants with comparable demographic profiles on academic outcomes?

To examine differences in academic outcomes, the performance of students with high attendance (at least 50%) who attended Saturday School was compared to the performance of a matched sample of students who did not attend Saturday School. Results are presented in the following order: elementary and middle school MAP and PARCC results, followed by high school GPA analysis. Lastly, Evidence of Learning analysis will be presented at all school levels.

Elementary School Students (Grades 3 – 5). A one-way analysis of covariance (ANCOVA) was conducted to examine differences in average MAP RIT and PARCC scale scores for students in Grades 3–5.

MAP Reading. There was a significant impact of Saturday School participation on Spring 2019 MAP Reading scores, $F(1, 1757) = 5.30, p = .02, \eta^2 = .003$. Students who participated in Saturday School had an average spring 2019 MAP Reading score of 205.25 ($SD = 16.35$) compared to students who did not participate in Saturday School ($M = 202.81, SD = 20.35$). There were also significant relationships among the covariates (FARMS and race/ethnicity) with students’ Spring MAP Reading scores.

MAP Mathematics. There was a significant difference in Spring MAP Mathematics scores between Saturday School and Non-Saturday School students, $F(1, 2305) = 103.63, p < .01, \eta^2 = .04$. Students who participated in Saturday School had a lower Spring MAP Mathematics average ($M = 202.35, SD = 23.71$) compared to students who did not participate in Saturday School ($M = 211.51, SD = 23.07$). There was also a significant relationship between FARMS and MAP Mathematics scores.

PARCC ELA. There was a significant impact of Saturday School participation on students’ PARCC ELA scale scores, $F(1, 1749) = 18.68, p < .01, \eta^2 = .01$. Students who attended Saturday School had a higher PARCC ELA average ($M = 742.11, SD = 37.67$) compared to Non-Saturday School students ($M = 733.66, SD = 37.70$). There were also significant relationships between students’ PARCC ELA scale scores and student group characteristics (FARMS and race/ethnicity).

PARCC Math. There was a significant difference in PARCC Math scale score based on Saturday School participation, $F(1, 1755) = 44.03, p < .01, \eta^2 = .02$. Students who attended Saturday School had an average PARCC Math scale score of 746.84 ($SD = 33.30$) compared to students who did not attend Saturday School ($M = 735.34, SD = 36.03$). There was also a significant impact of student group characteristics (FARMS and race/ethnicity) on students’ PARCC Math scale scores. See Table 7.

Table 7
Adjusted Mean Spring MAP and PARCC Scores for Differences in Performance Between Elementary High Attendance Saturday School and Elementary Non-Saturday School Participants.

	<u>Saturday School</u>		<u>Non-Saturday School</u>		<u>Adjusted Mean Difference</u>	<u>F</u>	<u>p</u>	<u>η^2</u>
	<u>Students</u> (N = 1396)	<u>Adjusted Mean</u>	<u>Students</u> (N = 952)	<u>Adjusted Mean</u>				
MAP R	204.99	.62	203.04	.58	1.97	5.30	.02	.003
MAP M	202.05	.61	211.94	.75	-9.89	103.63	<.01	.04
PARCC ELA	741.54	1.24	734.17	1.17	7.37	18.68	<.01	.01
PARCC Math	746.26	1.14	735.86	1.08	10.40	44.03	<.01	.02

Middle School Students (Grades 6–8). A one-way analysis of covariance (ANCOVA) was conducted to measure the impact of Saturday School on middle school students' Spring MAP RIT scores, PARCC scale scores, and Marking Period Averages (See Table 8).

MAP Reading. There was a significant effect of Saturday School on students' MAP Reading scores, $F(1, 1100) = 4.54, p = .03, \eta^2 = .003$. Middle school students who attended Saturday School had an average MAP Reading score of 217.48 ($SD = 15.36$) compared to students who did not attend Saturday School ($M = 217.08, SD = 15.67$). There was a significant relationship among students' FARMS status, race/ethnicity, and Spring MAP R. This significant relationship indicates student group characteristics are also accountable for differences in scores.

MAP Mathematics. There was no significant effect of Saturday School participation on students' MAP Math scores, $F(1, 1099) = 1.40, p = .24$. There was a significant relationship among MAP M scores and student group characteristics -- FARMS, $F(1, 1099) = 164.74, p < .01$ and race/ethnicity, $F(1, 1099) = 37.19, p < .01$.

PARCC English Language Arts. There was a significant difference in PARCC ELA scores based on Saturday School participation, $F(1, 1110) = 6.72, p < .01, \eta^2 = .05$. Students who participated in Saturday School had an average PARCC ELA scale score of 736.87 ($SD = 34.42$) compared to the 736.89 average ($SD = 34.89$) scale score of students who did not participate in Saturday School. There was also a significant effect of race/ethnicity and FARMS on students' PARCC ELA scale scores.

PARCC Math. There was no significant impact of Saturday School participation on students' PARCC Math scale scores, $F(1, 1112) = 2.44, p = .12$. Saturday School students had an average PARCC Math scale score of 730.39 ($SD = 28.57$) compared to students who did not participate in Saturday School ($M = 728.61, SD = 31.32$). There was also a significant impact of race/ethnicity and FARMS on students' PARCC Math scores.

Quarter 4 MPA. There was no significant differences in students' Quarter 4 MPAs based on Saturday School participation, $F(1, 1114) = .30, p = .58$. Students who attended Saturday School had an average 3.04 ($SD = .78$) MPA and students who did not attend Saturday school had an average 2.92 ($SD = .78$) MPA. There were significant effects of FARMS and race/ethnicity.

Table 8

Adjusted Mean Spring MAP and PARCC Scores for Differences in Performance Between Middle High Attendance Saturday School and Elementary Non-Saturday School Participants.

	<u>Saturday School</u>		<u>Non-Saturday School</u>		<u>Adjusted Mean</u> <u>Difference</u>	<u>F</u>	<u>p</u>	<u>η²</u>
	<u>Students</u> <u>(N = 1396)</u>	<u>Std. Error</u>	<u>Students</u> <u>(N = 952)</u>	<u>Std. Error</u>				
MAP R	216.24	.65	218.13	.60	-1.89	4.54	.03	.004
MAP M	221.68	.79	222.95	.72	-1.27	1.40	.24	.00
PARCC ELA	734.08	1.45	739.22	1.32	-5.14	6.72	.01	.006
PARCC Math	727.97	1.25	730.64	1.14	-2.68	2.44	.12	.002
Quarter 4 MPA	2.99	.03	2.96	.03	.02	.30	.58	.00

High School (Grades 9–12). To measure the impact of Saturday School on high school students’ GPA and MPAs, an ANCOVA was used to analyze student data (See Table 9).

End of Year Grade Point Average. Saturday School participation had a marginally statistically significant impact on students’ GPA, $F(1, 939) = 3.42, p = .07, \eta^2 = .004$. Students who participated in Saturday School had an average GPA of 3.13 ($SD = .64$) compared to the 2.99 average ($SD = .80$) GPA of Non-Saturday School students. There was a significant impact of race/ethnicity and FARMS on GPA.

Quarter 4 MPA. Saturday School participation did not have a statistically significant impact on students’ Quarter 4 MPA, $F(1, 903) = 1.36, p = .25$. Saturday School students had an average MPA of 2.82 ($SD = .90$) compared to Non-Saturday School students ($M = 2.69, SD = 1.05$). There was a significant impact of both FARMS and race/ethnicity on students’ MPA.

Table 9

Adjusted Mean Spring MAP and PARCC Scores for Differences in Performance Between High School High Attendance Saturday School and Elementary Non-Saturday School Participants.

	<u>Saturday School</u>		<u>Non-Saturday School</u>		<u>Adjusted Mean</u> <u>Difference</u>	<u>F</u>	<u>p</u>	<u>η²</u>
	<u>Students</u> <u>(N = 1396)</u>	<u>Std. Error</u>	<u>Students</u> <u>(N = 952)</u>	<u>Std. Error</u>				
GPA	3.10	.03	3.02	.03	.08	3.42	.07	.004
Quarter 4 MPA	2.79	.05	2.72	.05	.07	1.36	.24	.001

EOLvidence of Learning. Two way contingency tables were conducted to determine if Saturday School participation was related to Evidence of Learning attainment in literacy and mathematics.

The two variables were Saturday School (participant or nonparticipant) and Evidence of Learning attainment (met or did not meet).

Literacy. There was a significant association between Saturday School participation and Evidence of Learning literacy attainment for elementary students, Pearson $\chi^2(1, N = 2327) = 12.23$, $p < .001$, Cramer's $V = .07$. The probability of being a Saturday School participant (75.7%) and meeting EOL literacy attainment was significantly higher than not participating in Saturday School (69.1%) and meeting EOL literacy attainment. Closer examination of the Cramer's V effect size reveals that Saturday School had a small effect on EOL literacy attainment. At the middle school level, there was not a significant association between Saturday School participation and EOL literacy attainment, Pearson $\chi^2(1, N = 1118) = 1.42$, $p = .23$, Cramer's $V = .04$. There was a significant association at the high school level between Saturday School participation and EOL literacy attainment, Pearson $\chi^2(1, N = 906) = 2.82$, $p = .09$, Cramer's $V = .06$. The probability of being a Saturday School participant (86.8%) and meeting EOL literacy attainment was significantly higher than not participating in Saturday School (82.8%) and meeting EOL literacy attainment. Interpretation of the Cramer's V indicate that the Saturday School effect on EOL literacy attainment is small.

Mathematics. There was a significant association between Saturday School participation and EOL mathematics attainment for elementary students $\chi^2(1, N = 2325) = 61.09$, $p < .001$, Cramer's $V = .16$. The probability of being a Saturday School participant (78.2%) and meeting EOL mathematics attainment was significantly higher than not participating in Saturday School (63.4%) and meeting EOL mathematics attainment. Closer examination of the Cramer's V statistics reveals that Saturday School had a small to medium effect on EOL mathematics attainment. At the middle school level, there was not a significant association between Saturday School participation and EOL mathematics attainment, Pearson $\chi^2(1, N = 1118) = 2.27$, $p = .14$, Cramer's $V = .05$. There was a significant association of Saturday School participation and EOL mathematics at the high school level, Pearson $\chi^2(1, N = 906) = 4.56$, $p = .03$, Cramer's $V = .07$. The probability of being a Saturday School participant (73.4%) and meeting EOL mathematics attainment was significantly higher than not participating in Saturday School (66.9%) and meeting EOL mathematics attainment.

Discussion

Montgomery County Public School’s Office of Shared Accountability conducted an outcome study to determine the effectiveness of the Saturday School partnership with The George B. Thomas, Sr. Learning Academy. Student data at all school levels was analyzed to determine the impact on students’ Measures of Academic Progress (MAP), Partnership for Assessment of Readiness for College and Careers (PARCC), Evidence of Learning attainment, and GPA and MPA for the 2018–2019 school year. Statistical analyses determined that Saturday School attendance was significantly related to students’ outcomes at all school levels. Evidence of Learning data revealed that majority of students who participated in Saturday School also successfully met Evidence of Learning in literacy and mathematics. Saturday School participation positively influenced the probability that elementary and high school students would meet Evidence of Learning in literacy and mathematics.