



# **STRATEGIC DATA PROJECT**

**FEATURED CAPSTONE REPORT FROM  
STRATEGIC DATA PROJECT FELLOWSHIP, COHORT 3**



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# The use of student perception surveys informs district programming in Baltimore County Public Schools

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**KELLY SHIELDS** analyzes examples of middle school reform from across the country to identify models of success. Her findings are used in the development of Baltimore County's own middle school transformation policies and measurements. Specifically, Kelly analyzes student outcomes during school-level transitions, and researches best practices around the superintendent's three levers of middle school transformation: academics, extracurricular activities, and transitions.

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In July 2012, Dr. Dallas Dance entered the role of Superintendent in Baltimore County Public Schools (BCPS) and announced his strategic priorities, which included the transformation of middle schools. Dance knew from his most recent position as chief middle-schools officer of the Houston Independent School District (HISD) that there was a major opportunity for middle schools to serve as the lever of district change. He believed that "students physically drop out in high school, but mentally drop out in middle school" (Knezevich, 2012). State test score data for BCPS indicated high achievement in elementary schools with stark declines beginning in middle school (Table 1).

While the issue of disruptive school transitions and declining performance during the middle grades was not a localized problem, as evidenced by national education conversations devoted to the benefits of Algebra during middle school, and discussed in the Frontline documentary, "the Middle School Moment" (Robertson & Koughan, 2012), BCPS aimed to blaze new engagement opportunities for students.

Table 1

*BCPS Maryland State Math Achievement Test Proficiency Rates*

Year	% Proficient and Advanced		
	Elementary	Middle	ES-MS Gap
2013	88.0	71.2	16.8
2012	90.8	74.0	16.8
2011	88.8	72.5	16.3

With attention and resources turned to middle schools, BCPS district leaders planned to create a new middle school model by the end of the 2013-2014 school year under the theory of action that increased success in middle school would: i. push higher achieving students to high schools, and ii. pull even higher expectations from elementary schools, thereby elevating success at all levels.

As part of this charge, the Assistant Superintendents for Middle Schools requested a census survey to be designed, administered and analyzed to capture the “student voice,” that is, students’ perspective and demand for school offerings, which would inform the design of the middle school model. The use of surveys to capture student feedback has been shown to impact both teachers and students positively. For one thing, schools can learn about patterns in their practice of which they may not have been aware. Additionally, surveys give students a forum in which they can be heard, and this emphasis on student voice promotes both reflection and responsibility on the part of the students (Colorado Legacy Foundation, 2013).

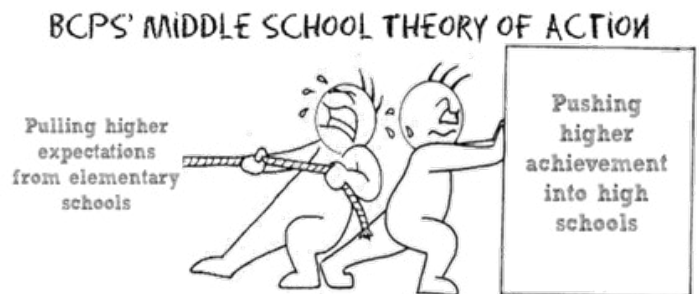
The Middle School Student Interest Survey included questions designed to measure: 1. demand for magnet programs, athletic options, and extracurricular clubs; and 2. students’ perceptions of effort, interest, and teacher student relationships. Of particular interest is the distribution of responses across our diverse county by student demographic and outcome group to shed light on the equity of district practices or on the immense regional diversity of the system. The Middle School Student Interest Survey was designed by a small team which included the two Assistant Superintendents for Middle Schools, Chief Accountability Officer, Strategic Data Project Data Fellow, and Evaluation Specialist. The survey was administered by schools and centers where students in Grades 6 through 8 were located,

during the last week of school, June 10-14, 2013.

This report will review: the survey design process, results, and recommended next steps for the middle school model.

## PROJECT PLANNING

The request to create and administer a survey during the 2012-2013 school year arose in May, which left the team responsible with an aggressive timeline. The team, with the input of five school principals who attended a planning session, agreed to construct and distribute the paper-pencil survey in-house, for delivery to schools no later than Friday, June 7, 2013 and administration during the homeroom period any time during the following week. A condensed timeline of events is provided in Appendix A. The target population of students exceeded 22,000, located at 36 schools or centers countywide (see Appendix B for a map of county school). Survey questions were presented on one sheet of paper (double sided), with answers to be recorded on a separate Scantron form. An outside vendor was contracted to scan completed forms and create a data file of responses and image files of comments organized by school. Despite the desire for strong support from stakeholder groups such as Curriculum Instruction leadership, principals and teachers, the project timeline limited the opportunity to build awareness and understanding of the purpose and usefulness of the survey throughout the district prior to survey administration.



# SURVEY DESIGN ELEMENTS

The Middle School Student Interest Survey separated the questions into three groups: I: demographic information, II: program and extracurricular opportunities, and III: student perception.

## **PART I: DEMOGRAPHIC INFORMATION**

In order to link survey responses to additional, BCPS-maintained student data for analysis, students were asked to input their 10-digit student identification number (ID) on the survey. Along with the survey instructions, administering teachers received a list of students and their IDs to assist students in completion of this item. Students also input grade and gender, as a precaution to ensure some demographic data was captured in the event of failure to correctly input the ID.

## **PART II: PROGRAMS AND EXTRACURRICULAR ACTIVITIES**

The team agreed that to achieve the first purpose of the survey, understanding student demand for programs and extracurricular opportunities, a series of yes-no items reflecting the district's current offerings would limit survey completion time, ensure students were familiar with each item, and offer discerning results. Part II of the survey asked questions in three groups: magnet programs, athletics, and clubs. The first group presented a definition of a magnet program to familiarize all respondents with the vocabulary and then asked students which magnet programs they would consider attending. The magnet programs presented were based on options that the district offered at the time of the survey, in addition to a proposed option, Health Sciences. Since some students already attended magnet programs, the results were reported for current magnet participants and non-participants in order to parse out any bias for magnet schools. The next section asked whether a student would participate on a variety of sport teams, which were deemed reasonable to include on the survey by the project team. The list of teams did not include swimming or football, for example, due to the high cost of equipment and facilities. Finally, students were asked to identify additional extracurricular club opportunities they desired at their school. Themes were generated by the project team from a review of an inventory of after school clubs that principals completed earlier in the school year. Where necessary, magnet programs and clubs were defined parenthetically to offer students additional description.

## **PART III: STUDENT PERCEPTION**

Part III of the survey was designed using a bank of perception questions tested for previous use by BCPS' Strategic Data Project (SDP) faculty advisor, Hunter Gehlbach, related to the three constructs: student effort, interest in school, and teacher-student relationships. Three questions from each construct were selected. The questions were altered to relate to all classes and/or teachers that the student experienced over the course of the school year. The Assistant Superintendents also requested a question to measure how challenging middle school was and the frequency of homework. To promote respondent understanding and create stable participant responses, questions were designed using guidelines from the journal *Academic Medicine* which included the use of statements instead of questions, positively worded questions, and a scale of item-specific response anchors (Artino, Gehlbach, Durning, 2011 and Artino & Gelbach, 2012). Students could choose to leave comments after both section II and III of the survey. Comments were captured in image files by the vendor.

### Middle School Interest Survey

Please answer the following questions on the accompanying Scantron sheet. This survey will provide information about your interests and experience in middle school. The information will help inform and improve future experiences for all students. Your teacher will help you complete the ID Number and Special Codes sections of the Scantron sheet.

#### Section I: Demographic Information

	A	B	C
1 Select your grade level:	6th Grade	7th Grade	8th Grade
2 Select your gender:	Male	Female	

#### Section II: Magnet Programs

The district is considering creating one or more new programs in schools called magnet programs. These programs have special themes. While students would still take regular academic courses, many lessons and electives would focus on the theme. Students from anywhere in the district could apply to go to a magnet program if they were interested in that theme.

Would you consider attending any of the following magnet programs?

	A	B
3 Career and Professional Studies: business, law, government, college options	Yes	No
4 Earth/Space Science: environmental, aquatic, conservation sciences	Yes	No
5 Health Science: health related careers, anatomy, medical science	Yes	No
6 Law and Finance: economic literacy, legal system, finance	Yes	No
7 Mass Communications: television, radio, video production, Web design	Yes	No
8 Performing Arts: dance, instrumental music, vocal music, theatre	Yes	No
9 Project Lead the Way: engineering, science, technology, robotics	Yes	No
10 Visual Arts: drawing, painting, sculpture, design, ceramics	Yes	No
11 World Languages: French	Yes	No
12 World Languages: Japanese	Yes	No
13 World Languages: Spanish	Yes	No

#### Section III: Extracurricular Opportunities

Would you participate on any of the following after school sport teams if they were offered for your grade at your school?

	A	B
14 Baseball/Softball	Yes	No
15 Basketball	Yes	No
16 Cheerleading	Yes	No
17 Cross Country	Yes	No
18 Lacrosse	Yes	No
19 Soccer	Yes	No
20 Tennis	Yes	No
21 Track and Field	Yes	No
22 Volleyball	Yes	No

Do you want your school to offer more clubs in any of the following areas?

	A	B
23 Health/Nutrition	Yes	No
24 Music (band, chorus)	Yes	No
25 Performing Arts (dance, theater, drama)	Yes	No
26 Reading/Literature	Yes	No
27 Science, Technology, Engineering, Math (STEM)	Yes	No
28 Visual Arts (drawing, painting, sculpture)	Yes	No
29 Volunteering/Service	Yes	No

\* Please use the space labeled "Comment 1" to suggest any additional magnet programs, sports, or clubs for your school.

**Section IV: Student effort, interest, relationships**

Think about your overall school experience this year.

		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
<b>30</b>	How much effort did you put into getting involved in discussions during class?	Almost no effort	A little bit of effort	Some effort	Quite a bit of effort	A great deal of effort
<b>31</b>	When your teachers were speaking, how much effort did you put into trying to pay attention?	Almost no effort	A little bit of effort	Some effort	Quite a bit of effort	A great deal of effort
<b>32</b>	How much effort did you put into learning all the material for class?	Almost no effort	A little bit of effort	Some effort	Quite a bit of effort	A great deal of effort
<b>33</b>	How interesting did you find your classes?	Not at all interesting	Slightly interesting	Somewhat interesting	Quite interesting	Extremely interesting
<b>34</b>	How often did you talk about topics from school when you were not in school?	Almost never	Once in a while	Sometimes	Frequently	Almost all the time
<b>35</b>	Overall, how much did you enjoy learning from your teachers?	Not at all	Slightly	Somewhat	Quite a bit	A tremendous amount
<b>36</b>	How often did you receive homework in your core classes (Language Arts, Mathematics, Social Studies, Science)?	Almost never	Once in a while	Sometimes	Frequently	Almost all the time
<b>37</b>	Overall, how challenging was middle school this year?	Not at all challenging	Slightly challenging	Somewhat challenging	Quite challenging	Extremely challenging
<b>38</b>	Overall, how friendly were teachers toward you?	Not at all friendly	Slightly friendly	Somewhat friendly	Quite friendly	Extremely friendly
<b>39</b>	How often did your teachers say something encouraging to you?	Almost never	Once in a while	Sometimes	Frequently	Almost all the time
<b>40</b>	How respectful were teachers towards you?	Not at all respectful	Slightly respectful	Somewhat respectful	Quite respectful	Extremely respectful
<b>41</b>	How caring were teachers towards you?	Not at all caring	Slightly caring	Somewhat caring	Quite caring	Extremely caring

**Section V: Other Comments**

\* Please use the space labeled "Comment 2" for any other comments you have.

## IMPLICATIONS OF SURVEY DESIGN

The tradeoffs made to fit the short timeline of survey development resulted in several negative implications for the survey and analysis. First and foremost, the team was unable to conduct field testing or pilot the survey. Although the items were adapted from items that were previously administered and found to be reliable and deemed straight-forward by the internal teammate who reviewed the questions, the team was forced to rely mainly on post-administration statistical analysis to be confident that all items are measuring the concept they intend to measure, and that respondents interpreted items similarly and responded accurately. A more rigorous process, such as those suggested by Willis (1994) and Schreiber and Asner-Self (2011) may have improved the survey design.

**MISSING OPTIONS:** Preliminary findings from the student comments may have been addressed in a more rigorous pilot or field test setting. The lack of a “maybe” option and a more exhaustive list of sports were both revealed in student comments. Although the survey team explicitly decided to restrict sports options only to those with reasonable feasibility for the district, a more inclusive list would have generated time savings for survey respondents and comments analysts due simply to the sheer number of comments regarding missing options (for example, football, swimming and gymnastics). Additionally, the choice of five response anchors per item, while strongly recommended by some researchers (Weng 2004) provided respondents with a “neutral” option, making average responses more difficult to interpret.

**ITEM CONFUSION:** Some students also commented about their inability to respond to items due to the general nature of the questions. For example, with regards to item 41, students

reported that some teachers were extremely caring and others not at all, creating confusion around which response to choose; other students commented that some classes were more interesting than others (item 30).

**THE RIGOR CONSTRUCT:** Since only two items addressed the constructs of homework and challenge, responses had to be reported separately and analysis of internal consistency, or reliability, could not be performed. A more thoughtful survey design process would have revealed the need to associate the questions about homework and challenge to a larger construct which contained additional items, perhaps relating to rigor.

## IMPLICATIONS OF USING THE PAPER-PENCIL SURVEY METHOD

The decision to administer a paper-pencil survey offered both advantages and disadvantages. The less expensive, online survey option would have provided easier “pre-slugging” of student data, a potentially faster survey experience for students, and shorter time for data processing. However, principals expressed high concerns about the technological capabilities of schools to provide survey access to all students, especially with only five days to administer. Given the Assistant Superintendents’ commitment to capture a wide swath of the “student voice,” the team decided upon a paper survey, acknowledging the variety of logistical and analytical implications:

**LOGISTICS:** A number of logistical protocols were put in place to facilitate the paper pencil survey. These included: a single point of contact identified at each school and leveraging the district’s Department of Logistics. This burden on district employees and school based staff could have been diminished with an online survey administration or earlier survey.

In order to maximize the number of responses and mitigate impact on school operations, schools could choose to administer the survey any day during the last week of class. However, due to the survey window, paper-pencil nature of the survey, and turnaround time of inter-office mail, the survey team could not successfully track each school's completion. In total, 34 of 36 sites completed surveys, a tribute to the diligence of our school staffs.

**STUDENT ID MATCHING:** Given the desire to associate student answers with other demographic and outcome data contained in BCPS databases, an online survey would have proven more successful. Pre-slugging student answer sheets with their IDs was cost prohibitive. As such, 76.2% of surveys were successfully matched to the IDs that respondents entered manually.

## RESULTS

**RESPONSE RATES:** 17,978 response Scantrons were scanned and analyzed. This represents 78.7% of the student population enrolled on June 10, 2013 (the first day of the survey window), as described in the attached Table 2. School response rates ranged from 49.6% to 108.5%. It appears that Grade 6 students in one school had the option to take the survey multiple times, resulting in a response rate of greater than 100%. Alternatively, a processing error could have occurred as the surveys were scanned in batches by school by a third party vendor. The median school response rate was 79.5%. Grade level response rates reflected concerns principals voiced during the survey planning process that Grade 8 students would be underrepresented in the response pool, as many students elect not to attend class for the rest of the school year after their Grade 8 moving up ceremony. Low response rates from Grade 8 students contributed to schools with low overall

response rates. Four schools had exceptionally low percentages of respondents in Grade 8, with Grade 8 respondents accounting for less than 5% of their responses. Administrators expressed a desire to investigate Grade 8 attendance practices further as a result. This grade level disproportionality did not concern administrators when interpreting the descriptive survey results since the respondent population was rather large. However, we are careful to emphasize that while a large portion of the "student voice" is represented by the respondents, it is not necessarily "representative" of the population.

Analysis of answer patterns led to two findings, discussed in Appendix D, related to the treatment of missing variables and the fact that students appeared to have taken the survey seriously.

Results to items related to magnet programs, athletics, and clubs are disaggregated by school in Table 3 and gender, grade level, and race in Table 4.

**MAGNET INTEREST:** As expected, the demand for different programs and extracurricular activities varied greatly across our county, often across demographics and student outcome variables, which are confounded with school and geographic area. Students identified as receiving free or reduced meal services (FARMS) demonstrated greater interest in magnet programs for 9 of the 11 themes, the exceptions being two science-related magnets. Additionally, students who already attended a magnet program demonstrated greater interest for all magnet programs by as many as 12 percentage points. Considering the negative correlation between a school's FARMS rate and its performance, this increased interest may be indicative of the fact that magnets provide students and families options for school "choice" when they are not satisfied with the school to which they are zoned.



Large gender gaps separated girls' and boys' interest in three magnet themes in particular (Table 5). This finding was investigated deeper by approximating a grade point average (GPA) for students with matched Student IDs and reviewing the gender gap within each quartile of GPA. Regardless of GPA quartile, the gender gap for interest in BCPS' STEM and performing arts magnet held constant, while the gender gap increased as GPA quartile increases for visual arts, as males with higher GPAs demonstrated less interest in visual arts (Figures 1-3).

Table 5

*Gender Gaps in Magnet Program Interest*

Magnet Option	% indicating they would consider attending a magnet program		
	Male	Female	M-F Gap
STEM	64	28	35
Performing Arts	35	73	-38
Visual Arts	39	62	-23

ATHLETICS INTEREST: Students demonstrated the most interest in basketball, with variation across races contributing to differences in athletics interest as large as 28 percentage points for a sport, per Table 6. Findings varied little by county area; all five areas preferred basketball and soccer, with either volleyball, track and field, or baseball/softball rounding out the top three choices.

Interest also varied by GPA: interest in cross country, soccer, tennis and volleyball increased as GPA increases, while interest in baseball/softball and basketball appeared inversely related to GPA quartile. Students identified as receiving free or reduced meal services (FARMS) demonstrated greater interest in sports than students who are not identified as FARMS, with the exception of cross country, lacrosse, and soccer. This differential may be the result of decreased opportunities for students identified as FARMS to participate in the county's popular "parks and rec" league than their non-FARMS peers.

Table 6

*Interest in Athletics by Gender and Race*

	Baseball/Softball	Basketball	Cheerleading	Cross Country	Lacrosse	Soccer	Tennis	Track and Field	Volleyball
District	42	55	27	27	35	49	34	42	42
Female	37	46	48	26	33	51	39	43	60
Male	46	64	5	27	36	46	29	41	24
Asian	31	52	17	29	29	54	52	37	46
Black or African American	39	68	35	25	30	43	38	53	43
Hispanic or Latino	42	54	26	27	35	67	35	37	44
Two or More Races	47	56	29	28	39	52	36	42	48
White	45	44	21	27	39	51	29	34	41

Clubs interest: Trends and demographic gaps in interest in clubs generally followed those that arose from similarly-themed magnet programs.

Volunteering/service clubs were the most popular overall (57% of students), while reading/literature clubs were the least popular (which still attracted nearly 1 in 4 students). This high volunteering/service interest may be a function of the requirement that students participate in service learning hours in order to graduate high school. Grade 6 students expressed more interest in additional clubs than their older peers with the exception of health/nutrition.

# PROGRAM INTERESTS BY GENDER AND GPA

Figure 1

*STEM Magnet Program Interest by Gender and GPA Quartile*

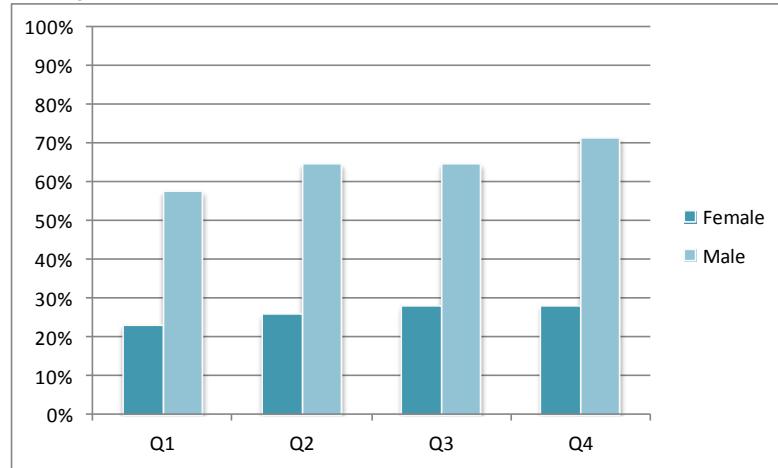


Figure 2

*Performing Arts Magnet Program Interest by Gender and GPA Quartile*

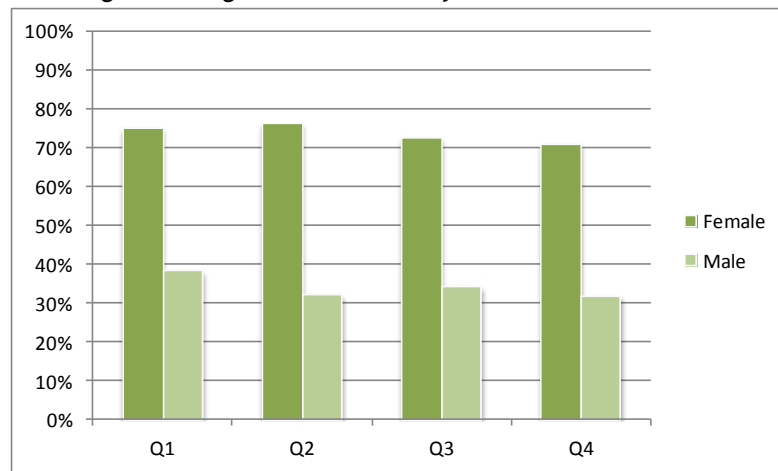
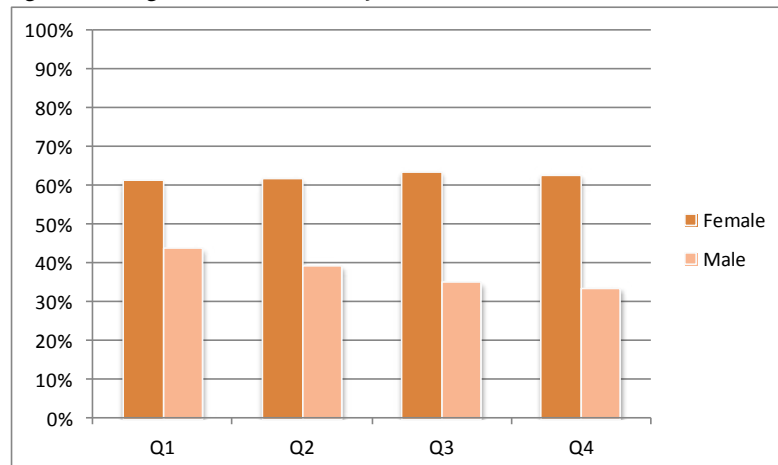


Figure 3

*Visual Arts Magnet Program Interest by Gender and GPA Quartile*



Analysis of the survey structure suggest that it is appropriate to summarize student responses to items on page two as relating to three constructs: effort, interest and teacher-student relationships, in addition to isolated reporting of the items related to homework and challenge.

**FINDINGS BY STUDENT GROUP:** Although the mean scores of these constructs should not be compared as it may be more difficult to measure one construct over another, it appeared that students were more likely to report that they expend quite a bit of effort in school (mean 3.81) than interested in school (mean 3.01). The effort construct also had a smaller standard deviation, suggesting there was less variation of student responses than other constructs (the standard deviation of effort was 0.77, as compared to that of interest, 0.88, and teacher-student relationships, 0.92). Effort, interest and teacher student relationships decline from Grade 6 to Grade 8.

For teacher-student relationships, the Grade 8 mean was higher than the Grade 7 mean, but still lower than the Grade 6 mean. Females also responded more favorably across constructs than males, though as with grade level, the differences between groups are quite small, if not negligible. The gap between female and male mean effort was the largest gender difference (0.14), whereas the difference between interest in Grade 6 and Grade 8 was the largest grade level difference.

Asian students had the highest average response to each of the constructs, while the race/ethnicity subgroup with the lowest average response varied by construct, with Hispanic or Latino students reporting the lowest effort, white students reporting the lowest interest, and Black or African American students reporting the lowest teacher-student relationship scores (Table 7).

**FINDINGS BY SCHOOL:** While there was variation across schools, since most students only attend one middle school, student responses may be based to their single-school experience. That is, an “average” teacher-student relationship at one school may not be equated to an “average” teacher-student relationship at another school. Nonetheless, the rank order of schools interested middle school leadership and will inevitably lead our team to develop deeper analysis around these constructs (Table 8).

A comparison of construct results across schools indicated that Middle School 2 had the highest means for two of the three constructs (effort and relationships) and Middle School 13 had the lowest means for two of the three constructs (interest and relationships).

**Correlation of constructs and student characteristics:** When student data other than demographics were analyzed against the constructs, GPA was most highly correlated with effort, with a correlation of 0.366. Other correlations between student outcomes and survey constructs were weak (0.198 and below), as per Table 9. All correlations presented herein are statistically significant, in part due to the high number of survey responses.

**Table 9: Correlation of Survey Constructs to Student Outcomes**

	<b>Effort</b>	<b>Interest</b>	<b>Teacher-Student Relationships</b>
GPA	0.366	0.171	0.190
Attendance	0.099	0.064	0.045
Math Proficiency Level	0.198	0.049	0.046
Reading Proficiency Level	0.187	0.014	0.008

Table 10  
*Correlation of Survey Constructs to Demographic Factors in 28 "Traditional" Schools, Only*

	Effort	Interest	Teacher-Student Relationships
% FARMS	-0.522*	-0.176	-0.342
% Black or African American	-0.437*	-0.030	-0.368
% Special Education	0.367	-0.071	-0.415
% Limited English Proficient	-0.289	-0.064	-0.027

\*Statistically significant at 0.05.

Correlations between the construct results and student demographics with a school were also tested. The correlation between a school's demographics and its mean construct score revealed that effort is strongly correlated to a school's percent FARMS and Black or African American, with correlations above 0.435 (Table 10). There was evidence of a negative correlation between the percent of students receiving special education services at a school and the school's teacher-student relationships construct, though the correlation is not statistically significant.

## DISCUSSION

Results of the Middle School Interest Survey were used to inform programmatic enhancements to the middle school experience: BCPS will add one sport a year for the foreseeable future, starting with track and field in 2013-2014 and will consider soccer in 2014-2015 due to the high indication of interest from students. Partly in response to the dramatic gender gap in interest in STEM magnet programs and clubs, survey data has been included in a grant application whose funds would increase access to Algebra by the end of Grade 8.

Many of the differences in interest across subgroups identified by the team led us to hypothesize that student responses were, in large part, a symptom of student exposure and

a program's branding throughout the county. Despite this, survey results suggested that students from low socioeconomic backgrounds were more interested in programs at their school building, a demographic group that BCPS desires to deeply engage due to performance gaps within socioeconomic status. Students who were white or at schools with a low percentage of FARMS tended to demonstrate less interest in programs and additional extracurricular than their peers.

These findings beg further conversations about our district's priorities for the Middle School Transformation Team. Our district has engaged in a major initiative examining beliefs and practices through the lens of equity. Given this additional context, action in response to survey results can be one way our leaders demonstrate our commitment to the achievement gap as the Middle School Student Interest survey results suggest that responding to programming highest demand may not serve the neediest students. Instead, our administrators must decide what combination of programming to offer, and whether offering it is a result of the desire to engage students who tend to be struggling academically (GPA), potentially without access (FARMS), or students who are expressing demand for the programs in general.

The most striking results of effort, interest, and teacher-student relationships were that relatively negligible differences exist across grades and gender. In response to these findings, the team now wonders whether students' consistent perceptions of their effort, interest in school and relationships with teachers is a positive reflection of the BCPS student experience. Similarly surprising, there was a lack of correlation between GPA and teacher-student relationships, as the team suspected teachers to reward students with whom they had positive relationships with higher grades. Further analysis is warranted to identify differences across subgroups within schools with sufficient populations of multiple subgroups.

## CONCLUSION

**TAKEAWAYS:** The process BCPS employed to develop, implement and analyze the Middle School Student Interest Survey revealed, unsurprisingly, that decisions around survey logistics had major implications on the data, its interpretation, and its usefulness. The limited timeline compromised the pilot and feedback phases that characterize an optimal survey design process, and curtailed the amount of awareness building that the team was able to do amongst district leadership. Nonetheless, capturing the interests and perceptions of more than 17,000 responses provided powerful data with which leaders can reflect and further conversations about the transformation of BCPS middle schools.

**NEXT STEPS:** The Middle School Student Interest Survey offers a proven set of reliable questions related to effort, interest and teacher-student relationships. Going forward, BCPS can use this instrument to track changes over time in these constructs. Further analysis will be performed to validate the external consistency of the survey via structured equation modeling. Additionally, the team is currently in the throes of analysis around student responses to the free form comment sections to identify additional themes and actionable results. The team hopes that data from the Middle School Student Interest Survey can continue to highlight areas of opportunity to deliver programming that meets students' needs, engages them in school, and encourages students to be rigorous participants in their education.

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Table 2  
Response Rates and Proportionality by Grade Level and School

School	% Respondents	Total Enrollment	Response Rate	Respondents' Reported Grade					Proportion of Respondents					Enrollment as of 6/10/2013					Response Rates				
				% Respondents	% Respondents	6th	7th	8th	No Grade	6th	7th	8th	No Grade	6th	7th	8th	6th	7th	8th	6th	7th	8th	
<b>District</b>	17,978	22842	78.7	100	22842	78.7	6438	6283	5004	253	35.8	34.9	27.8	1.4	7535	7651	7656	85.4	82.1	65.4			
Middle School 1	674	757	89	3.75	757	89	231	235	198	10	34.3	34.9	29.4	1.5	264	262	231	87.5	89.7	85.7			
Middle School 2	694	776	89.4	3.86	776	89.4	226	243	217	8	32.6	35.0	31.3	1.2	244	274	258	92.6	88.7	84.1			
Middle School 3	653	722	90.4	3.63	722	90.4	222	204	225	2	34.0	31.2	34.5	0.3	246	229	247	90.2	89.1	91.1			
Middle School 4	404	778	51.9	2.25	778	51.9	176	157	61	10	43.6	38.9	15.1	2.5	262	252	264	67.2	62.3	23.1			
Middle School 5	866	1220	71	4.82	1220	71	322	277	255	12	37.2	32.0	29.4	1.4	381	436	403	84.5	63.5	63.3			
Middle School 6	879	956	91.9	4.89	956	91.9	310	284	279	6	35.3	32.3	31.7	0.7	326	322	308	95.1	88.2	90.6			
Middle School 7	358	460	77.8	1.99	460	77.8	120	151	85	2	33.5	42.2	23.7	0.6	135	177	148	88.9	85.3	57.4			
Middle School 8	1,163	1324	87.8	6.47	1324	87.8	409	371	371	12	35.2	31.9	31.9	1.0	447	430	447	91.5	86.3	83.0			
Middle School 9	609	750	81.2	3.39	750	81.2	204	194	198	13	33.5	31.9	32.5	2.1	247	238	265	82.6	81.5	74.7			
Middle School 10	486	617	78.8	2.7	617	78.8	182	166	127	11	37.4	34.2	26.1	2.3	209	212	196	87.1	78.3	64.8			
Middle School 11	1,009	930	108.5	5.61	930	108.5	405	288	306	10	40.1	28.5	30.3	1.0	293	300	337	138.2	96.0	90.8			
Middle School 12	333	630	52.9	1.85	630	52.9	52	133	146	2	15.6	39.9	43.8	0.6	226	215	189	23.0	61.9	77.2			
Middle School 13	75	130	57.7	0.42	130	57.7	27	29	18	1	36.0	38.7	24.0	1.3	41	36	53	65.9	80.6	34.0			
Middle School 14	573	674	85	3.19	674	85	209	175	183	6	36.5	30.5	31.9	1.0	235	215	224	88.9	81.4	81.7			
Middle School 15	600	748	80.2	3.34	748	80.2	235	204	143	18	39.2	34.0	23.8	3.0	281	239	228	83.6	85.4	62.7			
Middle School 16	661	819	80.7	3.68	819	80.7	227	218	206	10	34.3	33.0	31.2	1.5	280	270	269	81.1	80.7	76.6			
Middle School 17	289	581	49.7	1.61	581	49.7	144	133	9	3	49.8	46.0	3.1	1.0	196	180	205	73.5	73.9	4.4			
Middle School 18	931	1015	91.7	5.18	1015	91.7	312	316	287	16	33.5	33.9	30.8	1.7	331	338	346	94.3	93.5	82.9			
Middle School 19	1,400	1552	90.2	7.79	1552	90.2	456	496	432	16	32.6	35.4	30.9	1.1	494	534	524	92.3	92.9	82.4			
Middle School 20	545	942	57.9	3.03	942	57.9	243	296	2	4	44.6	54.3	0.4	0.7	281	352	309	86.5	84.1	0.6			
Middle School 21	592	907	65.3	3.29	907	65.3	202	219	158	13	34.1	37.0	26.7	2.2	300	308	299	67.3	71.1	52.8			
Middle School 22	959	1093	87.7	5.33	1093	87.7	350	334	267	8	36.5	34.8	27.8	0.8	382	353	358	91.6	94.6	74.6			
Middle School 23	424	729	58.2	2.36	729	58.2	211	188	17	8	49.8	44.3	4.0	1.9	255	240	234	82.7	78.3	7.3			
Middle School 24	423	513	82.5	2.35	513	82.5	143	148	131	1	33.8	35.0	31.0	0.2	163	175	175	87.7	84.6	74.9			
Middle School 25	556	675	82.4	3.09	675	82.4	199	172	176	9	35.8	30.9	31.7	1.6	239	223	213	83.3	77.1	82.6			
Middle School 26	935	1019	91.8	5.2	1019	91.8	333	304	285	13	35.6	32.5	30.5	1.4	362	343	314	92.0	88.6	90.8			
Middle School 27	357	457	78.1	1.99	457	78.1	105	115	125	12	29.4	32.2	35.0	3.4	128	159	170	82.0	72.3	73.5			
Middle School 28	311	627	49.6	1.73	627	49.6	129	161	13	8	41.5	51.8	4.2	2.6	204	207	216	63.2	77.8	6.0			
Middle School 29	15	26	57.7	0.08	26	57.7	1	8	6	0	6.7	53.3	40.0	0.0	2	13	11	50.0	61.5	54.5			
Middle School 30	0	14		0	14										3	3	8	0.0	0.0	0.0			
Middle School 31	8	9	88.9	0.04	9	88.9	1	3	4	0	12.5	37.5	50.0	0.0	1	3	5	100.0	100.0	80.0			
Middle School 32	68	117	58.1	0.38	117	58.1	8	25	30	5	11.8	36.8	44.1	7.4		36	81		69.4	37.0			
Middle School 33	0	44		0	44										7	10	27	0.0	0.0	0.0			
Middle School 34	10	13	76.9	0.06	13	76.9	4	4	2	0	40.0	40.0	20.0	0.0	7	2	4	57.1	200.0	50.0			
Middle School 35	41	65	63.1	0.23	65	63.1	19	10	11	1	46.3	24.4	26.8	2.4	28	21	16	67.9	47.6	68.8			
Middle School 36	0	22		0	22										3	11	8	0.0	0.0	0.0			
Middle School 37	77	131	58.8	0.43	131	58.8	21	22	31	3	27.3	28.6	40.3	3.9	32	33	66	65.6	66.7	47.0			
Min	0	9	49.6	0	9	49.6	1	3	2	0	6.7	24.4	0.4	0.0	1	2	4	0.0	0.0	0.0			
Max	1,400	1,552	108.5	7.79	1,552	108.5	456	496	432	18	49.8	54.3	50.0	7.4	494	534	524	138.2	200.0	91.1			
Median	486	675	79.5	3	675	79.5	203	182	145	8	35.2	34.8	30.7	1.4	241.5	223	224	83.4	80.7	68.8			

Table 3

Percent of Respondents Indicating Interest in Magnet Programs, Athletics, and Clubs by School

District	Magnets											Athletics										Clubs						
	Career and Profession	Earth/Space Science	Health Science	Language: French	Language: Japanese	Language: Spanish	Law and Finance	Mass Communications	Performing Arts	Project Lead the Way	Visual Arts	Baseball/Softball	Basketball	Cheerleading	Cross Country	Lacrosse	Soccer	Tennis	Track and Field	Volleyball	Health/Nutrition	Music	Performing Arts	Reading/Literature	STEM	Visual Arts	Volunteering/Service	
	47	40	37	42	31	57	31	53	54	46	51	42	55	27	27	35	49	34	42	42	27	47	48	24	45	52	57	
Middle School 1	43	40	27	39	30	63	29	51	53	47	48	49	53	24	21	30	45	26	33	35	18	49	42	19	44	48	50	
Middle School 2	51	39	34	42	28	51	33	52	53	45	51	42	54	22	32	37	47	31	43	41	24	43	44	20	42	53	62	
Middle School 3	40	36	29	26	23	53	26	51	55	45	51	39	53	24	34	30	47	31	38	40	20	36	48	22	39	53	51	
Middle School 4	51	38	37	55	48	72	35	50	62	43	58	43	56	30	29	30	47	31	40	39	34	49	53	28	43	61	56	
Middle School 5	45	37	40	54	41	66	33	61	63	44	51	37	68	38	29	30	42	39	55	42	34	56	60	24	48	55	60	
Middle School 6	48	42	38	39	25	50	32	52	51	47	53	36	47	14	31	36	54	42	41	42	22	46	45	29	43	56	53	
Middle School 7	47	41	38	51	37	61	26	54	53	42	56	56	56	30	20	41	48	37	47	43	30	42	51	26	52	60	58	
Middle School 8	53	40	38	45	32	58	35	55	52	45	43	33	57	26	29	35	47	37	37	43	27	44	48	25	43	47	60	
Middle School 9	50	37	37	49	29	55	30	50	51	43	51	50	49	30	21	39	51	32	32	40	32	44	45	19	42	49	50	
Middle School 10	56	38	41	49	39	67	35	56	61	51	52	45	60	33	29	36	52	35	51	43	35	61	58	29	51	59	57	
Middle School 11	41	40	31	29	16	51	28	43	46	34	48	36	51	21	31	42	51	30	42	43	15	37	38	18	35	50	54	
Middle School 12	53	45	47	52	32	59	34	53	54	56	53	56	49	30	23	42	58	34	41	43	38	51	43	30	53	56	57	
Middle School 13	49	29	33	42	37	55	33	56	57	51	57	24	63	32	18	25	45	45	38	45	27	49	50	30	43	48	48	
Middle School 14	49	39	41	47	40	57	31	54	54	46	61	51	61	31	17	38	47	36	38	48	32	48	48	27	42	59	51	
Middle School 15	48	38	37	53	42	61	42	53	61	49	53	42	58	33	24	38	50	39	50	42	30	60	57	28	46	55	60	
Middle School 16	48	38	38	43	33	61	26	52	48	46	52	44	47	27	18	31	50	25	39	38	30	35	43	22	49	55	55	
Middle School 17	61	39	48	53	49	69	46	59	66	54	58	31	71	33	16	27	38	43	53	36	47	60	60	35	58	60	61	
Middle School 18	40	42	38	49	35	48	28	57	53	54	57	45	50	27	24	37	54	36	40	50	21	41	46	22	48	55	56	
Middle School 19	43	39	35	30	18	55	25	47	47	45	43	39	53	21	34	38	49	33	35	51	22	42	41	21	46	46	55	
Middle School 20	51	42	42	43	37	61	35	60	57	56	52	41	58	25	25	34	45	44	46	41	31	50	54	27	59	51	61	
Middle School 21	40	44	36	33	30	55	27	54	51	49	47	39	45	28	24	33	55	31	40	39	26	49	45	19	47	50	55	
Middle School 22	44	41	37	32	17	49	30	52	53	34	46	35	51	23	33	37	52	31	37	40	16	41	44	23	33	47	58	
Middle School 23	56	44	47	61	52	71	36	61	65	54	60	51	68	32	23	32	51	49	56	46	39	65	59	34	57	63	66	
Middle School 24	45	46	38	32	22	42	29	46	42	43	43	51	46	21	22	44	53	26	32	42	31	40	37	18	40	45	56	
Middle School 25	46	39	40	47	31	58	30	46	52	40	51	55	49	29	23	34	48	27	32	37	23	41	41	17	41	47	54	
Middle School 26	49	44	41	43	29	54	34	61	70	51	50	37	61	36	29	31	45	38	49	43	29	63	58	25	45	51	64	
Middle School 27	53	37	39	48	37	64	33	55	60	46	56	40	66	34	23	29	43	40	54	40	32	55	57	31	50	56	58	
Middle School 28	57	33	39	51	40	69	38	62	62	49	54	31	67	33	15	26	39	40	52	36	39	46	54	23	51	54	59	
Alternative/Special Schools																												
Middle School 29	50	14	14	14	36	50	29	43	50	43	14	29	93	0	43	36	21	0	71	7	7	36	14	14	29	7	29	
Middle School 30	88	25	38	50	50	88	63	63	100	38	50	63	75	25	25	75	50	38	50	50	38	75	63	63	38	50	75	
Middle School 31	47	36	35	46	38	68	34	48	37	37	43	44	57	24	24	32	41	16	31	35	41	44	40	21	40	43	49	
Middle School 32	20	20	20	20	20	20	20	20	20	20	20	50	50	40	40	20	20	20	20	60	90	100	90	90	90	100	70	
Middle School 33	54	32	34	41	41	63	37	68	59	54	49	38	83	21	26	28	36	21	60	18	40	58	45	23	43	50	45	
Middle School 34	47	28	32	47	26	50	36	53	51	39	53	45	73	29	21	33	31	20	49	33	29	46	39	24	37	47	43	

Note: Green represents the item with the highest interest in each category for the demographic group; red represents lowest.

Table 4

Percent of Respondents Indicating Interest in Magnet Programs, Athletics, and Clubs by Demographic Subgroup

	Magnets										Athletics										Clubs							
	Career and Profession	Earth/Space Science	Health Science	Language: French	Language: Japanese	Language: Spanish	Law and Finance	Mass Communications	Performing Arts	Project Lead the Way	Visual Arts	Baseball/Softball	Basketball	Cheerleading	Cross Country	Lacrosse	Soccer	Tennis	Track and Field	Volleyball	Health/Nutrition	Music	Performing Arts	Reading/Literature	STEM	Visual Arts	Volunteering/Service	
District	47	40	37	42	31	57	31	53	54	46	51	42	55	27	27	35	49	34	42	42	27	47	48	24	45	52	57	
Gender																												
Female	46	36	47	50	30	62	29	50	73	28	62	37	46	48	26	33	51	39	43	60	30	57	70	26	33	65	67	
Male	48	43	28	34	32	52	33	56	35	64	39	46	64	5	27	36	46	29	41	24	23	37	25	21	57	39	46	
Male - Female Gap	2	7	-19	-16	2	-9	4	5	-38	35	-23	9	18	-43	2	3	-5	-10	-2	-36	-7	-19	-45	-5	23	-25	-21	
Grade Level:																												
6th	45	42	36	48	35	64	29	56	57	48	54	43	56	28	25	36	53	38	42	43	26	50	49	24	46	55	58	
7th	46	38	37	39	30	53	31	52	54	46	51	41	57	27	26	35	47	33	41	42	26	46	48	23	45	52	56	
8th	50	39	40	38	26	53	33	50	50	43	45	40	51	25	29	33	45	32	42	42	28	44	45	24	43	48	56	
FARMS Status																												
FARMS	49	37	40	47	35	61	32	54	57	45	54	44	60	32	23	34	48	35	43	43	31	50	52	24	47	56	57	
No FARMS	44	43	35	38	27	54	29	52	52	47	48	40	49	22	30	36	51	34	39	42	21	45	44	22	43	50	57	
No FARMS - FARMS Gap	-5	6	-5	-9	-8	-7	-3	-2	-5	2	-5	4	-10	-10	7	2	3	-1	-3	-1	-10	-5	-8	-2	-3	-6	-1	
Race:																												
Asian	48	45	52	46	44	54	30	53	54	61	55	31	52	17	29	29	54	52	37	46	28	54	46	30	61	58	64	
Black or African American	52	36	40	49	38	65	34	58	64	46	52	39	68	35	25	30	43	38	53	43	34	55	58	26	48	54	60	
Hispanic or Latino	48	40	40	54	37	68	33	53	54	48	55	42	54	26	27	35	67	35	37	44	29	49	48	23	45	58	59	
Two or More Races	48	44	38	44	33	58	33	55	60	44	50	47	56	29	28	39	52	36	42	48	26	52	51	23	45	53	63	
White	42	43	33	35	22	50	27	49	47	44	48	45	44	21	27	39	51	29	34	41	19	40	40	20	40	50	53	
White - Black/African American Gap	-11	7	-7	-15	-17	-15	-7	-9	-16	-2	-4	6	-25	-14	2	9	8	-8	-19	-2	-15	-15	-18	-6	-7	-5	-8	
White - Hispanic Gap	-6	3	-7	-19	-16	-19	-5	-4	-7	-5	-7	3	-10	-5	0	4	-16	-6	-3	-3	-11	-9	-8	-2	-5	-9	-6	

Note: American Indian and Pacific Islander withheld due to low numbers of respondents.

Green represents the item with the highest interest in each category for the demographic group; red represents lowest.



Table 7  
Construct Means and Standard Deviations, by Demographic Subgroup

	Effort			Interest			Relationships			Homework			Challenge		
	Mean	Standard Deviation		Mean	Standard Deviation		Mean	Standard Deviation		Mean	Standard Deviation		Mean	Standard Deviation	
<b>District Average</b>	3.81	0.77		3.01	0.88		3.46	0.92		4.07	0.98		3.06	1.05	
Gender															
Female	3.88	0.73		3.02	0.85		3.49	0.90		4.14	0.94		3.06	1.03	
Male	3.74	0.80		3.00	0.90		3.43	0.94		4.02	1.02		3.07	1.07	
Grade Level															
6th	3.89	0.76		3.14	0.87		3.55	0.91		4.10	0.97		3.10	1.09	
7th	3.79	0.78		2.94	0.87		3.38	0.93		4.08	0.98		3.04	1.04	
8th	3.73	0.78		2.94	0.87		3.44	0.92		4.06	1.00		3.05	1.02	
Race/Ethnicity:															
Asian	3.99	0.74		3.28	0.81		3.70	0.78		4.25	0.78		3.01	0.99	
Black or African American	3.75	0.78		2.99	0.88		3.36	0.95		3.91	1.03		3.06	1.10	
Hispanic or Latino	3.74	0.75		3.06	0.85		3.49	0.88		4.03	0.95		3.11	1.07	
Two or More Races	3.90	0.74		3.10	0.87		3.57	0.91		4.17	0.96		3.11	1.05	
White	3.86	0.74		2.98	0.86		3.52	0.89		4.22	0.93		3.04	1.00	
	0.25	0.04		0.30	0.03		0.21	0.07		0.22	0.10		0.07	0.10	

Note: American Indian and Pacific Islander withheld due to low numbers of respondents.

In general, questions were measured on the scale: 1 = Not at all; 2 = Slightly; 3 = Somewhat; 4 = Quite; 5 = Extremely

Table 8

*Construct Means by School*

	Effort	Interest	Relationships	Homework	Challenge
<b>District Average</b>	3.81	3.01	3.46	4.07	3.06
<b>Standard Deviation</b>	0.77	0.88	0.92	0.98	1.05
Middle School 1	3.80	2.93	3.45	4.02	2.95
Middle School 2	3.99	3.17	3.75	4.27	3.16
Middle School 3	3.90	3.04	3.59	4.46	3.09
Middle School 4	3.77	3.10	3.56	3.97	3.03
Middle School 5	3.74	2.92	3.25	3.95	3.11
Middle School 6	3.92	3.12	3.40	4.42	3.16
Middle School 7	3.73	3.09	3.55	3.32	2.75
Middle School 8	3.87	3.11	3.53	4.07	3.19
Middle School 9	3.71	2.89	3.31	3.83	2.98
Middle School 10	3.77	3.08	3.47	3.54	2.98
Middle School 11	3.89	3.06	3.66	4.41	3.03
Middle School 12	3.78	3.03	3.65	3.93	2.91
Middle School 13	3.96	2.87	2.75	3.79	2.97
Middle School 14	3.63	3.02	3.40	4.03	3.16
Middle School 15	3.79	2.98	3.47	4.27	3.12
Middle School 16	3.74	2.91	3.40	3.62	2.95
Middle School 17	3.81	3.13	3.44	3.97	3.12
Middle School 18	3.76	2.92	3.40	4.17	3.06
Middle School 19	3.86	3.09	3.62	4.14	3.03
Middle School 20	3.86	3.03	3.44	4.09	3.18
Middle School 21	3.75	2.98	3.50	4.44	3.10
Middle School 22	3.84	2.88	3.29	4.31	3.14
Middle School 23	3.84	3.18	3.52	3.82	3.04
Middle School 24	3.91	3.13	3.64	4.26	2.84
Middle School 25	3.76	2.90	3.48	3.88	2.90
Middle School 26	3.80	2.97	3.24	4.16	3.23
Middle School 27	3.73	2.89	3.17	3.67	3.08
Middle School 28	3.71	2.92	3.15	3.78	3.04
<b>School Range (Highest - Lowest)</b>	0.36	0.31	1.00	1.14	0.48
Alternative/Special Schools					
Middle School 29	3.40	2.84	3.43	4.07	2.93
Middle School 30	3.90	3.26	4.39	4.29	2.29
Middle School 31	3.11	2.58	3.22	2.80	2.44
Middle School 32	1.63	1.83	4.88	1.00	3.30
Middle School 33	3.13	2.41	3.01	3.39	2.72
Middle School 34	3.61	2.81	3.37	2.83	2.89

*Note:* In general, questions were measured on the scale:

1 = Not at all; 2 = Slightly; 3 = Somewhat; 4 = Quite; 5 = Extremely

Table 11  
*Missing item responses*

Item	Missing	Percentage
1	253	1.4
2	170	1.0
3	161	0.9
4	140	0.8
5	140	0.8
6	151	0.8
7	158	0.9
8	161	0.9
9	161	0.9
10	184	1.0
11	167	0.9
12	169	0.9
13	154	0.9
14	190	1.1
15	165	0.9
16	161	0.9
17	180	1.0
18	161	0.9
19	182	1.0
20	201	1.1
21	187	1.0
22	179	1.0
23	230	1.3
24	203	1.1
25	203	1.1
26	209	1.2
27	227	1.3
28	278	1.5
29	319	1.8
30	808	4.5
31	340	1.9
32	339	1.9
33	352	2.0
34	381	2.1
35	394	2.2
36	403	2.2
37	415	2.3
38	429	2.4
39	461	2.6
40	516	2.9
41	1,400	7.8

*Note:* Of the surveys missing responses, 280 were also missing a response for item 41 and were therefore eliminated from the analysis.

Table 14  
Item Properties

Item #	Item	Observations	Mean	Std. Dev.	Median Response	Item-Total Correlation	Cronbach's Alpha if Item Deleted
30	How much effort did you put into getting involved in discussions during class?	16,050	3.546	1.013	Quite a bit of effort	0.407	0.694
31	When your teachers were speaking, how much effort did you put into trying to pay attention?	16,516	3.903	0.975	Quite a bit of effort	0.53	0.533
32	How much effort did you put into learning all the material for class?	16,536	3.982	0.968	Quite a bit of effort	0.543	0.517
33	How interesting did you find your classes?	16,525	3.114	1.036	Somewhat interesting	0.6	0.585
34	How often did you talk about topics from school when you were not in school?	16,521	2.546	1.124	Once in a while	0.482	0.725
35	Overall, how much did you enjoy learning from your teachers?	16,521	3.372	1.098	Somewhat	0.575	0.611
36	How often did you receive homework in your core classes (Language Arts, Mathematics, Social	16,521	4.075	0.982	Frequently		
37	Overall, how challenging was middle school this year?	16,523	3.063	1.055	Somewhat challenging		
38	Overall, how friendly were teachers toward you?	16,524	3.584	1.078	Quite friendly	0.727	0.781
39	How often did your teachers say something encouraging to you?	16,521	3.06	1.185	Sometimes	0.717	0.786
40	How respectful were teachers towards you?	16,510	3.657	1.084	Quite respectful	0.585	0.845
41	How caring were teachers towards you?	16,578	3.536	1.122	Quite caring	0.697	0.795
<b>Construct</b>		<b>Observations</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Median Response</b>		
Effort		16,578	3.809	0.774	Quite a bit		
Interest		16,572	3.011	0.875	Somewhat		
Teacher-Student Relationship		16,578	3.459	0.923	Somewhat/ Quite a bit		

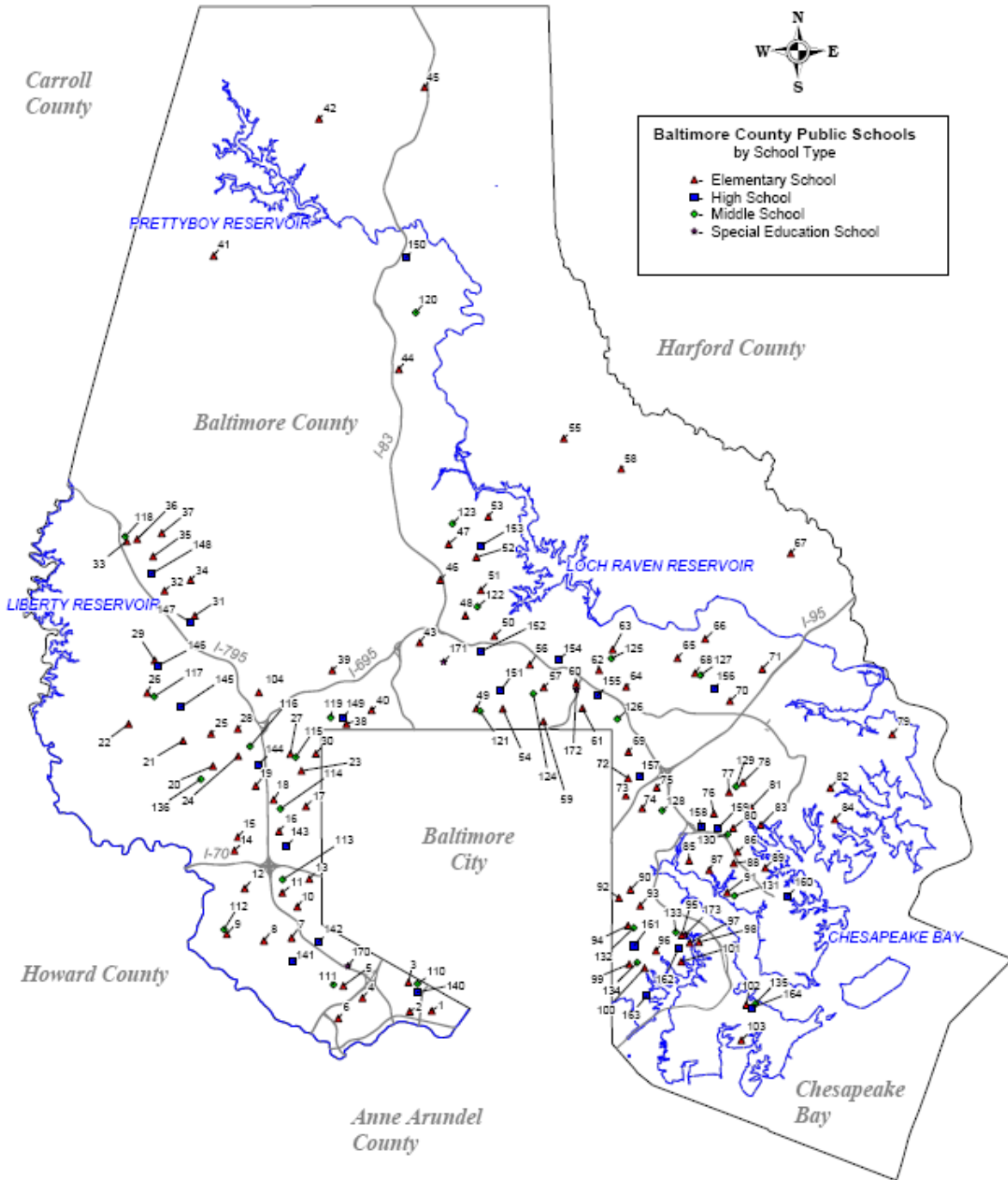
## Appendix A

### Timeline

May 15-17	Brainstorming and survey design, conferences with SDP faculty advisor and internal team
May 30	Feedback session from principals to introduce survey, build awareness, designate point of contact as schools
May 31	Memo to principals
June 5	Approval from TABCO
June 5	Finalize survey design
June 5 - June 10	Principals notify parents via website, auto-calls, etc
June 6 and June 7	Webinar for designated school points of contact/administrators to review logistics and respond to any questions or concerns
June 5 and June 6	Creation of boxes: the Department of Logistics created a unique package for each school containing the appropriate number of surveys, answer sheets and instructions arranged for each homeroom; return instructions and colored envelopes materials were also provided.
June 10 - 14	Survey administration window for schools
June 12 - 21	Boxes returned to central office for sending to Scantron (processing): Colored return envelopes for answer sheets returned to the survey team via inter-office mail, which operates every-other-day.
July 8	Data received from third party vendor (results of Scantron scans)
July 9 - Aug 9	Data analysis and preparation of presentation of results
Aug 12	Presentation to Assistant Superintendents
Aug 29	Comments data received
Aug 30 - Present	Comments analysis

Appendix B

Map of Baltimore County Schools



County size: 682 sq mi

## Appendix D Analysis of Responses

Variety of Responses: Students appeared to have taken the survey seriously as analysis of the standard deviation of responses suggest only 1% of respondents gave the same answer for all page 1 items (related to program and extracurricular interest) and 0.5% of respondents gave the same answer for all page 2 items (related to effort, interest, and teacher-student relationships). In the section on interest in clubs, 13% of respondents gave the same response to each item. This proportion decreased to 7% for sports related items and 4% for magnet related items. This suggests students provided item-specific answers to each question as opposed to filling in the same response in an effort to complete the survey early. Male students were more likely to answer with the same response than female. In all three item groups, students who responded with the same answer to questions on page 1 favored “No” as a response.

Missing responses: 49 respondents did not complete any questions on page 1, and 271 respondents did not complete questions on page 2. When assessing the number of missing responses for each question (Table 11 and Table 12), 1,400 respondents (7.8%) did not answer item 41. As such, the team eliminated surveys missing responses to question 41 when analyzing the items on page 2 given the likelihood that a student who missed the last question on the survey could have (intentionally or unintentionally) skipped another item and responses were misaligned to items on the Scantron. It does not appear that one grade level or gender of students was more likely to be excluded because of a missing response to item 41.

## Appendix E

### Validity and Reliability Analyses

Table 15

#### Reliability Statistics

	Reliability ( $\alpha$ )
Overall Reliability (all items)	0.824
Effort	0.678
Interest	0.728
Teacher-Student Relationships	0.844

Principal components analyses (PCA) were conducted to examine the underlying structure of the survey. The analysis reveals that the questions designed to measure the same construct (effort, interest and teacher-student relationships) did, in fact, perform as expected. Student responses on the 12 questions on page two can more easily be summarized and interpreted by grouping questions together. While four factors emerged, three were accepted and the items related to homework and challenge were reported separately in alignment with the general practice that factors with less than three items are not grouped together (Table 13 displays factor loadings and construct composition).

Cronbach's Alpha ( $\alpha$ ), a statistic used to measure internal consistency or reliability of the survey, was calculated for page 2 items. An  $\alpha$  greater than 0.7 is typically considered acceptable. The Cronbach's Alpha for page 2 was .824; with construct-level  $\alpha$  summarized in Table 8 below. All construct-level  $\alpha$  suggest the construct met or nearly met the generally accepted standard of reliability. Although Cronbach's Alpha for the effort construct may have improved with the removal of one item (Table 14), the team decided to include all related items to avoid having to report items independently. Table 15 identifies the overall reliability statistics of the survey and three of the constructs it measured.



## SDP Fellowship Capstone Reports

SDP Fellows compose capstone reports to reflect the work that they led in their education agencies during the two-year program. The reports demonstrate both the impact fellows make and the role of SDP in supporting their growth as data strategists. Additionally, they provide recommendations to their host agency and will serve as guides to other agencies, future fellows, and researchers seeking to do similar work. *The views or opinions expressed in this report are those of the authors and do not necessarily reflect the views or position of SDP or the Center for Education Policy Research at Harvard University.*