Appendix B

Quality of Instruction

Classroom Assessment Scoring System (CLASS)

What is CLASS?

The Classroom Assessment Scoring System (CLASS) is a classroom observation tool developed at the University of Virginia's Curry School of Education. It aims to provide a common lens and language focused on classroom interactions that encourage student learning.

CLASS observations break down the complex classroom environment to help educators focus on boosting the effectiveness of their interactions with learners of all ages. Observations rely on categorizing interactions within the CLASS framework.

The CLASS tool organizes teacher-student interactions into three broad domains: Emotional Support, Classroom Organization, and Instructional Support. The upper elementary and secondary tools include an additional domain, Student Engagement. Within all domains except Student Engagement, interactions are further organized into multiple dimensions. **Table 1** lists the domains and dimensions for each level.

Emotional Support: Students' social and emotional functioning in the classroom is increasingly recognized as an indicator of school readiness, a potential target for intervention, and even as a student outcome that might be governed by a set of standards similar to those for academic achievement. Students who are more motivated and connected to others are much more likely to establish positive trajectories of development in both social and academic domains. Teachers' abilities to support social and emotional functioning in the classroom are therefore central to ratings of effective classroom practices.

Classroom Organization: The classroom organization domain assesses a broad array of classroom processes related to the organization and management of students' behavior, time, and attention in the classroom. Classrooms function best and provide the most opportunities for learning when students are well-behaved, consistently have something to do, and are interested and engaged in learning tasks.

Instructional Support: The theoretical foundation for the instructional support domain is based on research on children's cognitive and language development. Thus the emphasis is on students' construction of usable knowledge, rather than rote memorization, and metacognition—or the awareness and understanding of one's thinking process. As a result, the instructional support domain does not make judgments about curriculum content; rather, it assesses the effectiveness of teachers' interactions with students that support cognitive and language development.

Student Engagement: Unlike other domains, student engagement focuses strictly on student functioning, and measures the overall engagement level of students in the classroom.

Table 1: CLASS Domains and Dimensions

Domain	Dimensions			
	Pre-K	**Lower Elementary**	**Upper Elementary**	**Secondary**
Emotional Support	Positive Climate Negative Climate Teacher Sensitivity Regard for Student Perspectives	Positive Climate Negative Climate Teacher Sensitivity Regard for Student Perspectives	Positive Climate Teacher Sensitivity Regard for Student Perspectives	Positive Climate Teacher Sensitivity Regard for Adolescent Perspectives
Classroom Organization	Behavior Management Productivity Instructional Learning Formats	Behavior Management Productivity Instructional Learning Formats	Behavior Management Productivity Negative Climate	Behavior Management Productivity Negative Climate
Instructional Support	Concept Development Quality of Feedback Language Modeling	Concept Development Quality of Feedback Language Modeling	Content Understanding Analysis and Inquiry Instructional Learning Formats Quality of Feedback Instructional Dialogue	Content Understanding Analysis and Inquiry Instructional Learning Formats Quality of Feedback Instructional Dialogue
Student Engagement	n/a	n/a	Student Engagement	Student Engagement

Based on research from the University of Virginia's Curry School of Education and studied in thousands of classrooms nationwide, the CLASS

- focuses on effective teaching
- helps teachers recognize and understand the power of their interactions with students
- aligns with professional development tools
- works across age levels and subjects

CLASS-based professional development tools increase teacher effectiveness, and students in classrooms where teachers are observed to demonstrate and earn higher CLASS scores achieve at higher levels than their peers in classrooms with lower CLASS scores.[1]

[1] Teachstone Inc. http://www.teachstone.org/about-the-class/

CLASS and Program Evaluation

APS conducts CLASS observations for all program evaluation reports, starting in the 2010-11 school year. In the fall of 2010, the Office of Planning and Evaluation recruited retired teachers and administrators to become certified CLASS observers. Certification is managed by the University of Virginia. Trainees undergo in-depth training to help them use the tool effectively in the field. An assessment is used to ensure that the observers have demonstrated reliability with the CLASS tool.

Each observation lasts approximately 30 minutes and observers are instructed to view either the beginning or end of a class. Ten additional minutes are provided for coding of the observation. Self-contained classrooms that serve ESOL/HILT students or students with a disability, as well as mainstream classrooms with ESOL/HILT students or students with a disability, are included.

CLASS Scores

CLASS dimensions are scored on a 7-point scale consisting of Low (1, 2), Mid (3, 4, 5), and High (6, 7) ranges. A score in the low range indicates an absence or lack of the behaviors associated with a given dimension, while a score in the high range indicates a high presence of such behaviors. Scores in the high range are desirable for all dimensions except for Negative Climate. With this dimension, the goal is a low score, or an absence of negativity.

Research Foundations of CLASS

The CLASS framework is derived from developmental theory and research suggesting that interactions between students and adults are the primary mechanism of child development and learning.

Elementary CLASS

Research provides evidence about the types of teacher-student interactions that promote positive social and academic development. The Classroom Assessment Scoring System™ (CLASS) provides a reliable, valid assessment of these interactions[2]

Selected studies demonstrate:

- Higher levels of instructional support are related to preschoolers' gains in pre-reading and math skills.[3]
- High levels of emotional support contribute to preschoolers' social competence in the kindergarten year.[4]
- High levels of emotional support are associated with growth in reading and math achievement from kindergarten through fifth grade.[5]
- High levels of classroom organization are associated with gains in first graders' literacy.[6]
- Kindergarten children are more engaged and exhibit greater self-control in classrooms offering more effective teacher-child interactions.[7]

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[2] Karen LaParo, Robert Pianta, and Meghan Stuhlman, "Classroom Assessment Scoring System (CLASS): Findings from the Pre-K Year," Elementary School Journal, 104:5, pages 409-426.
[3] Mashburn, Pianta, Hamre, Downer et al., Child Development,79, pages 732-749.
[4] Timothy Curby, Jennifer Locasale-Crouch, Timothy Konold, Robert Pianta, Carollee Howes, Margaret Burchinal et al., "The Relations of Observed Pre-K Classrooms Quality Profiles to Children's Academic Achievement and Social Competence," Early Education and Development, 19, pages 643-666.
[5] Robert Pianta, Jay Belsky, Nathan Vandergrift, Renee Houts, Fred Morrison, and NICHD-ECCRN, "Classroom Effects on Children's Achievement Trajectories in Elementary School," American Education Research Journal, 49, pages 365-397.
[6] Claire Cameron Ponitz, Sara Rimm-Kaufman, Laura Brock, and Lori Nathanson, "Contributions of gender, early school adjustment, and classroom organizational climate to first grade outcomes," Elementary School Journal, 110, 142-162.

- First-grade children at risk for school failure perform on par with peers, both socially and academically, when exposed to classrooms with effective teacher-student interactions.[8]

Moreover, studies conducted in over 6,000 classrooms provide evidence that students in PK–5 classrooms with higher CLASS ratings realize greater gains in achievement and social skill development.[9]

Secondary CLASS

Research using the more recently developed secondary CLASS tool has shown that teachers' skills in establishing a positive emotional climate, their sensitivity to student needs, and their structuring of their classroom and lessons in ways that recognize adolescents' needs for a sense of autonomy and control, for an active role in their learning, and for opportunities for peer interaction were all associated with higher relative student gains in achievement.[10]

Alignment with APS Initiatives

Differentiation

The four domains measured by the CLASS are essential in effectively differentiated classrooms. In addition, dimensions such as teacher sensitivity, regard for student/adolescent perspectives, and instructional learning formats specifically address behaviors necessary for effective differentiation.

Teacher Evaluation (Danielson)

The CLASS tool is heavily aligned with Charlotte Danielson's Framework for Teaching[11], which sets forth standards for teaching behaviors in the areas of planning, instruction, classroom environment, and professional responsibility. Danielson's Levels of Performance rubrics are the foundation for all T-Scale staff evaluation in APS.

Cultural Competence

There is strong alignment between Gay's Exemplars of Culturally Responsive Behaviors[12] and classroom behaviors identified in the CLASS tool. The APS Council for Cultural Competence was established in 2003 to develop the framework for permanent, systemwide cultural competence activities including ongoing cultural competence training for all staff. Cultural competence is a set of attitudes, skills, behaviors, and policies that enable organizations and staff to work effectively in cross-cultural situations.

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[7] Sara Rimm-Kaufman, Timothy Curby, Kevin Grimm, Lori Nathanson and Laura Brock, "The Contribution of Children's Self-Regulation and Classroom Quality to Children's Adaptive Behavior in Kindergarten," Developmental Psychology, in-press. See also NICHD ECCRN, "A Day in Third Grade: A Large- Scale Study of Classroom Quality and Teacher and Student Behavior," Elementary School Journal, 105, pages 305-323.

[8] Bridget Hamre and Robert Pianta, "Can Instructional and Emotional Support in First Grade Classrooms Make a Difference for Children At Risk of School Failure?" Child Development, 76, pages 949-967.

[9] Website http://curry.virginia.edu/uploads/resourceLibrary/CLASS-MTP_PK-12_brief.pdf Center for Advanced Study of Teaching and Learning Charlottesville, Virginia, **Measuring and Improving Teacher-Student Interactions in PK-12 Settings to Enhance Students' Learning**

[10] Joseph P. Allen, Anne Gregory, Amori Mikami, Janetta Lun, Bridget Hamre, and Robert C. Pianta, "Observations of Effective Teaching in Secondary School Classrooms: Predicting Student Achievement with the CLASS-S." Submitted.

[11] Charlotte Danielson (2007), *Enhancing Professional Practice: A Framework for Teaching*, Alexandria, VA: ASCD.

[12] Geneva Gay (2000). *Culturally Responsive Teaching: Theory, Research, & Practice.* New York: Teachers College Press.

SIOP

Many of the dimensions of the CLASS are aligned with components of the Sheltered instruction Observation Protocol (SIOP)[13], an approach to teaching that promotes content-area learning and language development for English language learners. SIOP encourages teachers to adapt grade-level content lessons to the students' levels of English proficiency, while focusing on English language development to help students increase their proficiency in academic English.

[13] Website http://siop.pearson.com/about-siop

Appendix B2

Alignment of the Classroom Assessment Scoring System (CLASS) With APS Best Instructional Practices

Domain/ Dimension	Grades Observed	Description of CLASS Dimensions	Alignment with			
			Differentiation[1]	Responsive Education[2]	Danielson[3]	SIOP[4]
Emotional Support						
Positive Climate	Pre-K - 12	Reflects the emotional connection and relationships among teachers and students, and the warmth, respect, and enjoyment communicated by verbal and non-verbal interactions.		X	X	
Teacher Sensitivity	Pre-K - 12	Encompasses the teacher's awareness and responsiveness to the academic, social-emotional, and developmental needs of individual students and the entire class. At the younger levels, it also includes the teacher's ability to consistently provide comfort, reassurance, and encouragement.	X	X	X	X
Regard for *Student/Adolescent* Perspective	Pre-K – 3	*Student:* At the younger levels, it captures the degree to which the teacher's interactions with students and classroom activities place an emphasis on students' interests, motivations, and points of view and encourage student responsibility and autonomy.	X	X	X	X
	4-12	*Adolescent:* At the older levels, it focuses on the extent to which the teacher is able to meet and capitalize on the social and developmental needs and goals of (pre)adolescents by providing opportunities for student autonomy and leadership. Also considered are the extent to which student ideas and opinions are valued and content is made useful and relevant to (pre)adolescents.	X	X	X	X
Classroom Organization						
Behavior Management	Pre-K - 12	Encompasses the teacher's use of clear behavioral expectations and effective methods to prevent and redirect misbehavior.		X	X	
Productivity	Pre-K - 12	Considers how well the teacher manages time and routines so that instructional time is maximized.			X	
Negative Climate[5]	Pre-K - 12	Reflects the overall level of expressed negativity among teachers and students in the classroom; the frequency, quality, and intensity of teacher and student negativity are important to observe.		X	X	
Instructional Support						
Concept Development	Pre-K – 3	Measures the teacher's use of instructional discussions and activities to promote students' higher-order thinking skills and cognition and the teacher's focus on understanding rather than on rote instruction.	X		x	X

[1] Differentiation or differentiated instruction is an approach that recognizes that all students must master a common body of knowledge and skills, but each student learns a different way and needs an approach most appropriate to his or her learning needs. Differentiation relates to content (what students learn), process (how students learn), and product (how students demonstrate what they've learned). Students differ in readiness (prior mastery of knowledge, understandings, and skills), interest (curiosity and passion to know, understand, or do more), and how they prefer to learn (Tomlinson, 1999).

[2] Responsive education or culturally responsive teaching is a pedagogy that recognizes the importance of including students' cultural references in all aspects of learning (Ladson-Billings, 1994).

Alignment of the Classroom Assessment Scoring System (CLASS) With APS Best Instructional Practices

Domain/ Dimension	Grades Observed	Description of CLASS Dimensions	Alignment with			
			Differentiation[1]	Responsive Education[2]	Danielson[3]	SIOP[4]
Content Understanding	4-12	Refers to both the depth of the lesson content and the approaches used to help students comprehend the framework, key ideas, and procedures in an academic discipline. At a high level, this refers to interactions among the teacher and students that lead to an integrated understanding of facts, skills, concepts, and principles.		X	X	X
Analysis and Inquiry	4-12	Assesses the degree to which the teacher facilitates students' use of higher-level thinking skills, such as analysis, problem solving, reasoning, and creation through the application of knowledge and skills. Opportunities for demonstrating metacognition, i.e. thinking about thinking, are also included.	X	X		X
Instructional Learning Formats[6]	Pre-K - 12	Focuses on the ways in which the teacher maximizes students' interest and engagement in learning. This includes the teacher's use of interesting and engaging lessons and materials, active facilitation, and clarity of learning objectives.	X	X	X	X
Quality of Feedback	Pre-K - 12	Assesses the degree to which feedback expands and extends learning and understanding and encourages student participation. (At the secondary level, significant feedback may be provided by peers)		X	X	X
Language Modeling	Pre-K-3	Captures the quality and amount of the teacher's use of language-stimulation and language-facilitation techniques.			X	X
Instructional Dialogue	4-5	Captures the purposeful use of dialogue- structured, cumulative questioning and discussion which guide and prompt students- to facilitate students' understanding of content and language development. The extent to which these dialogues are distributed across all students in the class and across the class period is important to this rating.			X	X
Student Engagement	4-12	Intended to capture the degree to which all students in the class are focused and participating in the learning activity presented or facilitated by the teacher. The difference between passive engagement and active engagement is of note in this rating.		X	X	X

[3] Danielson's Domains of Teaching Responsibility frame the APS teacher evaluation process and are based on Charlotte Danielson's Enhancing Professional Practice. The domains are the areas in which T-Scale employees are evaluated and are the foundation for Best Instructional Practices. For classroom based teachers they include: Planning and Preparation, Classroom Environment, Instruction and Professional Responsibilities. For non-classroom-based teachers the domains are: Planning and Preparation, Environment, Delivery of Service, and Professional Responsibilities.

[4] Sheltered instruction Observation Protocol (SIOP) is an approach to teaching that promotes content-area learning and language development for English language learners. Teachers adapt grade-level content lessons to the students' levels of English proficiency, while focusing on English language development to help students increase their proficiency in academic English.

[5] This dimension falls under the Emotional Support domain at the pre-K and lower elementary levels.

[6] This dimension falls under the Classroom Organization domain at the pre-K and lower elementary levels.

CLASS Domain and Dimension Scores

Arlington Public Schools uses the Classroom Assessment Scoring System (CLASS) observation tool to assess the quality of interactions between teachers and students for all program evaluation areas. It was developed by the University of Virginia's Curry School of Education as an early childhood observation tool, and later expanded to include other grade levels. CLASS is now managed by Teachstone, a company in Charlottesville, Virginia.

The CLASS tool organizes teacher-student interactions into three broad domains: **Emotional Support**, **Classroom Organization**, and **Instructional Support**. The upper elementary (grades 4–5) and secondary tools include a fourth domain: **Student Engagement**. Dimensions are scored on a 7-point scale consisting of Low (1, 2), Mid (3, 4, 5), and High (6, 7) ranges.

CLASS observations were conducted in PE classes throughout the 2016-17 school year at all grade levels. Due to the emphasis on physical activity in PE classes, CLASS observers conducted a partial observation focusing on emotional support, classroom organization, and – in upper elementary and secondary observations – student engagement.

Health observations took place during the fall of 2017 in secondary schools. These observations included the full CLASS framework, including instructional support.

For each set of observations, observers conducted one 30-minute observation for each observed teacher. **Table 1** shows the percentage of teachers observed by level and content area.

Table 1: Sample Size of CLASS Observations

Teacher Group	Number of Teachers	Number of Observations	Percent Observed	Margin of Error (95% Confidence Level)
Elementary Physical Education Teachers	53	47	87%	4.9%
Secondary Middle School Physical Education Teachers	36	32	89%	5.8%
Secondary High School Physical Education Teachers	37	29	78%	8.6%
Secondary Middle School Health Teachers	32	29	91%	5.7%
Secondary High School Health Teachers	25	23	92%	5.9%

When interpreting CLASS results, Teachstone advises that typically, half a point to a point difference is considered to be **educationally significant**; in other words, a difference that would impact outcomes for students[1]. Average CLASS domain scores for art and non-art observations are displayed in figures 1 (visual art) and 2 (music and theater).

[1] Teachstone, personal communication, June 13, 2014 and January 5, 2016

PE CLASS Scores

Figure 1: Average Lower Elementary PE CLASS Domain Scores

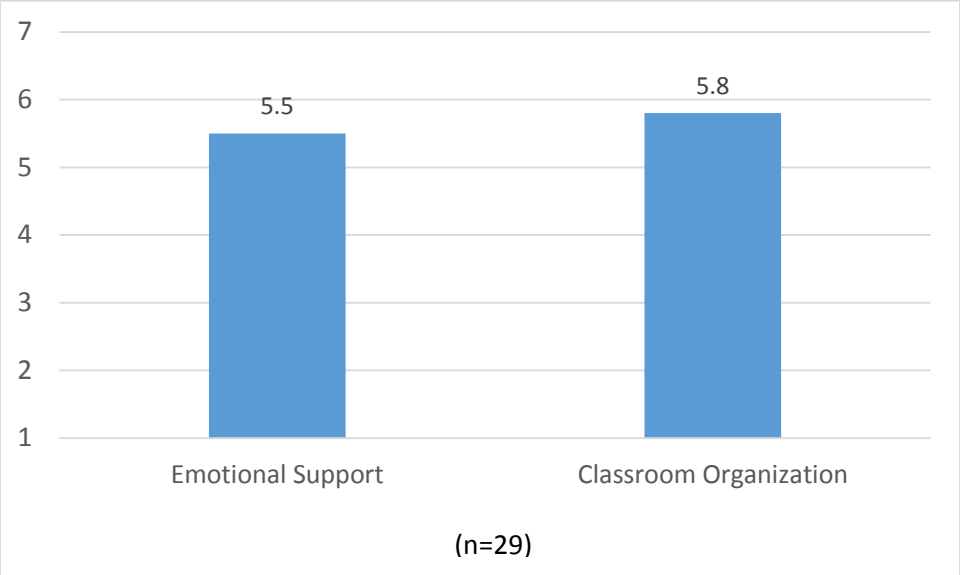


Table 2: Average Lower Elementary PE CLASS Domain and Dimension Scores

Average Domain and Dimension Scores	Lower Elementary			APS Lower Elementary		
	N	Mean	Std. Deviation	N	Mean	Std. Deviation
Emotional Support	29	5.5	0.7	548	5.4	0.6
Positive Climate	29	5.5	1.0	548	5.4	1.0
Negative Climate[2]	29	1.5	1.5	548	1.1	0.4
Teacher Sensitivity	29	5.3	1.1	548	5.5	0.9
Regard for Adolescent Perspectives	29	4.5	1.1	548	4.0	1.0
Classroom Organization	29	5.8	0.7	548	5.9	1.0
Behavior Management	29	6.0	0.9	548	6.0	2.0
Productivity	29	5.8	1.5	548	6.2	0.9

[2] A lower score is desirable for the Negative Climate Dimension. The Negative Climate score is reversed when calculating the Classroom Organization Domain score.

Average Domain and Dimension Scores	Lower Elementary			APS Lower Elementary		
	N	Mean	Std. Deviation	N	Mean	Std. Deviation
Instructional Learning Formats	29	5.7	0.9	548	5.5	0.9

Figure 2: Average Upper Elementary PE CLASS Domain Scores

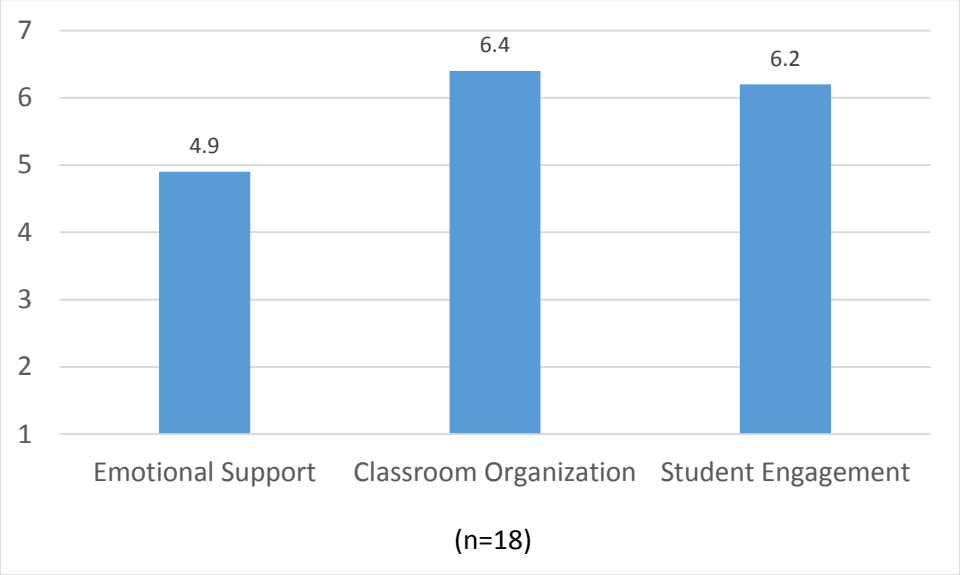
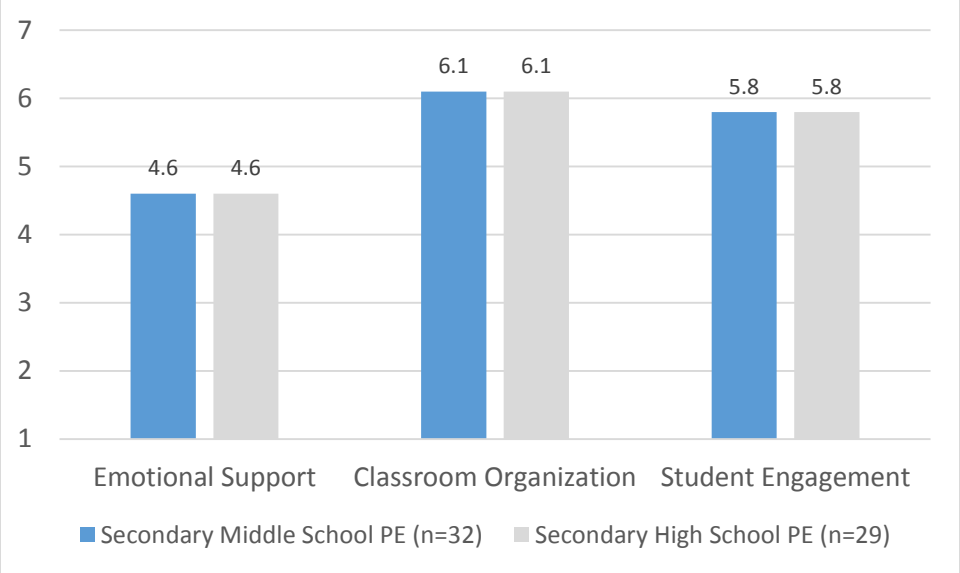


Table 3: Average Upper Elementary PE CLASS Domain and Dimension Scores

Average Domain and Dimension Scores	Upper Elementary			APS Upper Elementary		
	N	Mean	Std. Deviation	N	Mean	Std. Deviation
Emotional Support	18	4.9	0.6	200	4.9	0.8
Positive Climate	18	5.3	0.8	200	5.3	0.9
Teacher Sensitivity	18	5.6	0.6	200	5.6	1.0
Regard for Student Perspectives	18	3.8	1.0	200	3.7	1.1
Classroom Organization	18	6.4	0.4	200	6.4	0.6
Behavior Management	18	6.0	0.7	200	6.0	1.0

Average Domain and Dimension Scores	Upper Elementary			APS Upper Elementary		
	N	Mean	Std. Deviation	N	Mean	Std. Deviation
Productivity	18	6.3	0.8	200	6.2	0.9
Negative Climate[3]	18	1.2	0.4	200	1.0	0.2
Student Engagement	18	6.2	0.6	200	5.8	0.9

Figure 3: Average Secondary PE CLASS Domain Scores



[3] A lower score is desirable for the Negative Climate Dimension. The Negative Climate score is reversed when calculating the Classroom Organization Domain score.

Table 4: Average Middle School PE CLASS Domain and Dimension Scores

Average Domain and Dimension Scores	Middle School			APS Middle School		
	N	Mean	Std. Deviation	N	Mean	Std. Deviation
Emotional Support	32	4.6	0.7	262	5.2	0.9
Positive Climate	32	5.3	0.6	262	5.5	1.0
Teacher Sensitivity	32	5.0	1.0	262	5.7	1.0
Regard for Adolescent Perspectives	32	3.6	0.8	262	4.2	1.2
Classroom Organization	32	6.1	0.5	262	6.5	0.6
Behavior Management	32	5.8	0.9	262	6.2	0.9
Productivity	32	5.7	0.7	262	6.3	0.8
Negative Climate[4]	32	1.0	0.2	262	1.1	0.3
Student Engagement	32	5.8	1.0	262	5.8	1.0

[4] A lower score is desirable for the Negative Climate Dimension. The Negative Climate score is reversed when calculating the Classroom Organization Domain score.

Table 5: Average High School PE CLASS Domain and Dimension Scores

Average Domain and Dimension Scores	High School			APS High School		
	N	Mean	Std. Deviation	N	Mean	Std. Deviation
Emotional Support	29	4.6	0.6	300	5.1	0.8
Positive Climate	29	5.0	0.8	300	5.6	1.0
Teacher Sensitivity	29	5.3	0.8	300	5.6	0.9
Regard for Adolescent Perspectives	29	3.4	0.8	300	4.1	1.2
Classroom Organization	29	6.1	0.5	300	6.5	0.6
Behavior Management	29	5.7	0.8	300	6.2	0.9
Productivity	29	5.8	0.9	300	6.3	0.9
Negative Climate[5]	29	1.0	0.2	300	1.0	0.2
Student Engagement	29	5.8	0.9	300	5.5	1.1

[5] A lower score is desirable for the Negative Climate Dimension. The Negative Climate score is reversed when calculating the Classroom Organization Domain score.

Health CLASS Scores

Figure 4: Average Secondary Health CLASS Domain Scores

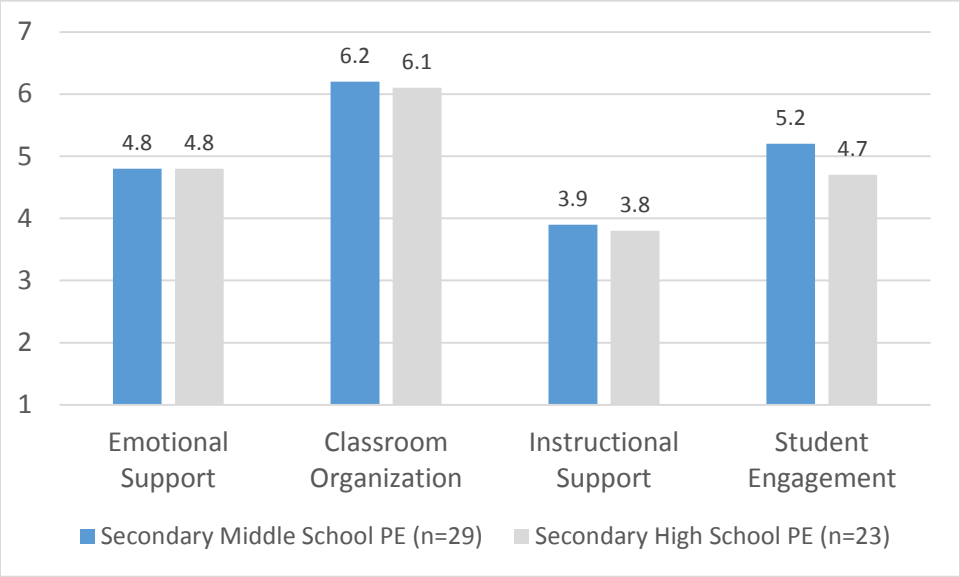


Table 6: Average Middle School Health CLASS Domain and Dimension Scores

Average Domain and Dimension Scores	Middle School					
	N	Mean	Std. Deviation	N	Mean	Std. Deviation
Emotional Support	29	4.8	1.2	262	5.2	0.9
Positive Climate	29	4.9	1.3	262	5.5	1.0
Teacher Sensitivity	29	5.3	1.3	262	5.7	1.0
Regard for Adolescent Perspectives	29	4.4	1.4	262	4.2	1.2
Classroom Organization	29	6.2	0.7	262	6.5	0.6
Behavior Management	29	5.5	1.3	262	6.2	0.9
Productivity	29	6.0	0.8	262	6.3	0.8
Negative Climate[6]	29	1.0	0.2	262	1.1	0.3
Instructional Support	29	3.9	1.2	262	4.5	1.0

[6] A lower score is desirable for the Negative Climate Dimension. The Negative Climate score is reversed when calculating the Classroom Organization Domain score.

Average Domain and Dimension Scores	Middle School					
	N	Mean	Std. Deviation	N	Mean	Std. Deviation
Instructional Learning Formats	29	5.5	1.2	262	5.7	0.9
Content Understanding	29	4.6	1.7	262	5.3	1.3
Analysis and Inquiry	29	2.8	1.4	262	3.5	1.5
Quality of Feedback	29	3.3	1.3	262	4.0	1.3
Instructional Dialogue	29	3.6	1.3	262	4.2	1.4
Student Engagement	29	5.2	1.2	262	5.8	1.0

Table 7: Average High School Health CLASS Domain and Dimension Scores

Average Domain and Dimension Scores	High School					
	N	Mean	Std. Deviation	N	Mean	Std. Deviation
Emotional Support	23	4.8	0.8	300	5.1	0.8
Positive Climate	23	5.0	1.0	300	5.6	1.0
Teacher Sensitivity	23	5.3	1.0	300	5.6	0.9
Regard for Adolescent Perspectives	23	4.2	1.1	300	4.1	1.2
Classroom Organization	23	6.1	0.6	300	6.5	0.6
Behavior Management	23	5.7	1.2	300	6.2	0.9
Productivity	23	5.8	1.0	300	6.3	0.9
Negative Climate[7]	23	1.0	0.0	300	1.0	0.2
Instructional Support	23	3.8	1.1	300	4.5	1.0

[7] A lower score is desirable for the Negative Climate Dimension. The Negative Climate score is reversed when calculating the Classroom Organization Domain score.

Appendix B3

Average Domain and Dimension Scores	High School					
	N	Mean	Std. Deviation	N	Mean	Std. Deviation
Instructional Learning Formats	23	4.9	1.3	300	5.3	1.0
Content Understanding	23	4.9	1.3	300	5.3	1.2
Analysis and Inquiry	23	2.1	1.4	300	3.3	1.5
Quality of Feedback	23	3.5	1.2	300	4.1	1.3
Instructional Dialogue	23	3.7	1.4	300	4.2	1.5
Student Engagement	23	4.7	0.9	300	5.5	1.1

PE Instructional Practices

The Health and PE Office, the Office of Planning and Evaluation, and the Health and PE evaluation planning committee adapted and developed three observation tools to assess the prevalence of best instructional practices specific to the disciplines of PE and health:

- **PE instructional practices**: occurrence and effectiveness of expected instructional components
- **PE physical activity**: amount of time students spend being physically active and types of activity
- **Health instructional practices**: occurrence and effectiveness of expected instructional components

Recently retired health and PE teachers from Virginia school districts were hired to observe both types of classes. Observers participated in an all-day training for the two PE observation tools, and a separate training for the health observation tool. The same set of observers conducted observations in both PE and health classes.

PE observations occurred during the 2016-17 school year and health observations occurred during fall 2017 and winter 2018.

The PE instructional practices observation tool was adapted from a tool that was originally developed for the 2009 evaluation, and has been used by the Health and PE Office since then in conducting informal observations. The number and percentage of teachers observed are shown in table 1.

Table 1: Number and Percentage of Teachers Observed, PE Instructional Practices Observation Tool

Teacher Group	Number of Teachers	Number of Observations	Percent Observed	Margin of Error (95% Confidence Level)
Elementary Physical Education Teachers	53	39	74%	8.1%
Middle School Physical Education Teachers	36	28	78%	8.9%
High School Physical Education Teachers	37	24	65%	12.2%

Table 2: Part of the Unit

		Beginning	Middle	End (review)
% of observations	Elementary (n=39)	44%	51%	5%
	Middle School (n=28)	36%	29%	35%
	High School (n=24)	25%	25%	50%

Table 3: Location of the Observed Lesson

		Gymnasium	Multi-Purpose Room	Relocatable	Pool	Field	Other
% of observations	Elementary (n=39)	90%	5%	3%	0%	0%	3%
	Middle School (n=28)	82%	0%	0%	0%	32%	14%
	High School (n=24)	58%	33%	0%	8%	13%	17%

Table 4: Student /Equipment Ratio

		1:1	2:1-5:1	6:1 -10:1	11:1-20:1	21:1 and higher
% of observations	Elementary (n=29)	45%	41%	3%	3%	7%
	Middle School (n=26)	31%	12%	23%	15%	19%
	High School (n=24)	50%	21%	8%	17%	4%

Table 5: Number of Students in Class

	Average number of total students in observed class	Range of total number of students	Average number of teachers in a class	Range of total number of teachers	Average number of students per teacher
Elementary (n=39)	32.5	14 - 52	1.7	1 - 3	20.4
Middle School (n=28)	38.5	20 -130	1.4	1 - 5	28.6
High School (n=24)	22.1	10 - 39	1.4	1 - 3	18.6

Table 6: Average Duration of Secondary Classes and Average Difference in Duration from Scheduled Class Time*

	Average actual class time	Range of actual class time	Average time difference between scheduled and actual class time	Range of time difference between scheduled and actual class time
Middle School (n=28)	32.3 minutes	25-40 minutes	10.9 minutes	3-18 minutes
High School Non-Block Scheduling (n=13)	34.0 minutes	30-42 minutes	11.2 minutes	3-15 minutes
High School Block Scheduling (n=9)	68.8 minutes	59-85 minutes	17.9 minutes	0-26 minutes

*For this item, observers were asked to note the scheduled class start time and the "true start time (not counting locker room and attendance time)."

Table 7: Instructional Components

		Warm-up	Student practice	Application	Instructional Presentation	Assessment	Cool-down	Closure
% of observations	Elementary (n=39)	90%	85%	77%	92%	21%	10%	49%
	Middle School (n=28)	86%	54%	68%	82%	7%	0%	32%
	High School (n=24)	92%	50%	83%	67%	21%	21%	25%

Table 8: Elementary Class Pick-up and Drop-off (n=39)

	Yes	No
Did the PE teacher pick up students from class?	8%	92%
Did the PE teacher stop PE class early to take students back to class?	8%	92%

Table 9: Elementary On Time Drop-off (n=36)

	On-time	Late
Did the classroom teacher deliver students…	81%	19%

Table 10: Objectives for lesson are communicated in writing and/or orally

		Not Observed	Ineffective	Effective
% of observations	Elementary (n=39)	26%	8%	66%
	Middle School (n=28)	29%	11%	61%
	High School (n=24)	17%	21%	62%

Table 11: The lesson allows for opportunities for practice of skills

		Not Observed	Ineffective	Effective
% of observations	Elementary (n=39)	0%	10%	90%
	Middle School (n=28)	36%	18%	46%
	High School (n=24)	17%	4%	79%

Table 12: Differentiation strategies to meet the needs of students with varying abilities are evident in the lesson

		Not Observed	Ineffective	Effective
% of observations	Elementary (n=39)	49%	18%	33%
	Middle School (n=28)	68%	7%	25%
	High School (n=24)	54%	4%	42%

Table 13: The physical education content is aligned with the APS PE curriculum

		Not Observed	Ineffective	Effective
% of observations	Elementary (n=39)	8%	0%	92%
	Middle School (n=28)	0%	14%	86%
	High School (n=24)	0%	8%	92%

Table 14: The teacher addresses student learning objectives in the lesson through the **cognitive** domain

		Not Observed	Ineffective	Effective
% of observations	Elementary (n=39)	15%	8%	77%
	Middle School (n=28)	50%	4%	46%
	High School (n=24)	46%	4%	50%

Table 15: The teacher addresses student learning objectives in the lesson through the **psychomotor** domain

		Not Observed	Ineffective	Effective
% of observations	Elementary (n=39)	3%	5%	92%
	Middle School (n=28)	7%	11%	82%
	High School (n=24)	8%	17%	75%

Table 16: The teacher addresses student learning objectives in the lesson through the **affective** domain

		Not Observed	Ineffective	Effective
% of observations	Elementary (n=39)	46%	0%	54%
	Middle School (n=28)	79%	4%	18%
	High School (n=24)	71%	8%	21%

Table 17: The teacher groups and/or regroups students

		Not Observed	Ineffective	Effective
% of observations	Elementary (n=39)	36%	5%	59%
	Middle School (n=28)	18%	18%	64%
	High School (n=24)	29%	0%	71%

Table 18: Sportsmanship is evident

		Not Observed	Ineffective	Effective
% of observations	Elementary (n=39)	0%	3%	97%
	Middle School (n=28)	7%	18%	75%
	High School (n=24)	4%	8%	88%

Table 19: Students engage in an instant activity upon entering class

		Not Observed	Ineffective	Effective
% of observations	Elementary (n=39)	33%	8%	59%
	Middle School (n=28)	68%	11%	21%
	High School (n=24)	75%	8%	17%

Table 20: The teacher moves around the class to provide feedback to as many students as possible

		Not Observed	Ineffective	Effective
% of observations	Elementary (n=39)	3%	38%	59%
	Middle School (n=28)	11%	14%	75%
	High School (n=24)	8%	13%	79%

Table 21: Number of checks for understanding

		Not Observed (No checks)	Ineffective (1-2 Checks)	Effective (3 or more checks)
% of observations	Elementary (n=39)	3%	15%	82%
	Middle School (n=28)	46%	29%	25%
	High School (n=24)	29%	38%	33%

Table 22: Technology that the **teacher** used during the lesson

		Heart rate monitor	Pedometer	IPads	Computers	Other	None
% of observations	Elementary (n=39)	0%	0%	5%	5%	8%	85%
	Middle School (n=28)	0%	0%	0%	4%	0%	96%
	High School (n=24)	0%	0%	0%	4%	4%	92%

Table 23: Technology that the **students** used during the lesson

		Heart rate monitor	Pedometer	IPads	Computers	Other	None
% of observations	Elementary (n=39)	0%	3%	5%	0%	0%	92%
	Middle School (n=28)	0%	0%	4%	0%	11%	89%
	High School (n=24)	0%	4%	4%	4%	17%	83%

Table 24: Use of technology

		Interactive	Enhancing instruction and fostering understanding	Actively engaging students in learning tasks	Actively engaging students in creating a product/service	Distracting	None of the above
% of observations	Elementary (n=7)	0%	43%	43%	29%	0%	0%
	Middle School (n=4)*						
	High School (n=5)	40%	100%	80%	20%	0%	0%

*Sample sizes less than 5 are not reported

Table 25: Instructional Components in Elementary Observations, by Part of Unit

	Part of unit	Warm-up	Student practice	Application	Instructional Presentation	Assessment	Cool-down	Closure
% of observations	Beginning (n=17)	94%	88%	77%	88%	12%	18%	59%
	Middle (n=20)	85%	80%	75%	95%	20%	5%	35%

Table 26: Instructional Components in Secondary Observations, by Part of Unit

	Part of unit	Warm-up	Student practice	Application	Instructional Presentation	Assessment	Cool-down	Closure
% of observations	Beginning (n=16)	94%	81%	44%	75%	6%	6%	44%
	Middle (n=14)	100%	50%	86%	64%	21%	14%	14%
	End (n=22)	77%	32%	91%	82%	14%	9%	27%

Table 27: Objectives for lesson are communicated in writing and/or orally, Elementary Observations by Part of Unit

	Part of unit	Not Observed	Ineffective	Effective
% of observations	Beginning (n=17)	29%	6%	65%
	Middle (n=20)	25%	10%	65%

Table 28: Objectives for lesson are communicated in writing and/or orally, Secondary Observations by Part of Unit

	Part of unit	Not Observed	Ineffective	Effective
% of observations	Beginning (n=16)	0%	6%	94%
	Middle (n=14)	21%	14%	21%
	End (n=22)	41%	23%	36%

Table 29: The lesson allows for opportunities for practice of skills, Elementary Observations by Part of Unit

	Part of unit	Not Observed	Ineffective	Effective
% of observations	Beginning (n=17)	0%	125	88%
	Middle (n=20)	0%	10%	90%

Table 30: The lesson allows for opportunities for practice of skills, Secondary Observations by Part of Unit

	Part of unit	Not Observed	Ineffective	Effective
% of observations	Beginning (n=16)	6%	19%	75%
	Middle (n=14)	29%	14%	57%
	End (n=22)	41%	4%	55%

Table 31: Differentiation strategies to meet the needs of students with varying abilities are evident in the lesson, Elementary Observations by Part of Unit

	Part of unit	Not Observed	Ineffective	Effective
% of observations	Beginning (n=17)	47%	18%	35%
	Middle (n=20)	55%	20%	25%

Table 32: Differentiation strategies to meet the needs of students with varying abilities are evident in the lesson, Secondary Observations by Part of Unit

	Part of unit	Not Observed	Ineffective	Effective
% of observations	Beginning (n=16)	50%	6%	44%
	Middle (n=14)	57%	14%	29%
	End (n=22)	73%	0%	27%

Table 33: The physical education content is aligned with the APS PE curriculum, Elementary Observations by Part of Unit

	Part of unit	Not Observed	Ineffective	Effective
% of observations	Beginning (n=17)	12%	0%	88%
	Middle (n=20)	5%	0%	95%

Table 34: The physical education content is aligned with the APS PE curriculum, Secondary Observations by Part of Unit

	Part of unit	Not Observed	Ineffective	Effective
% of observations	Beginning (n=16)	0%	0%	100%
	Middle (n=14)	0%	21%	79%
	End (n=22)	0%	14%	86%

Table 35: The teacher addresses student learning objectives in the lesson through the **cognitive** domain, Elementary Observations by Part of Unit

	Part of unit	Not Observed	Ineffective	Effective
% of observations	Beginning (n=17)	12%	6%	82%
	Middle (n=20)	20%	10%	70%

Table 36: The teacher addresses student learning objectives in the lesson through the **cognitive** domain, Secondary Observations by Part of Unit

	Part of unit	Not Observed	Ineffective	Effective
% of observations	Beginning (n=16)	44%	0%	56%
	Middle (n=14)	50%	7%	43%
	End (n=22)	50%	4%	46%

Table 37: The teacher addresses student learning objectives in the lesson through the **psychomotor** domain, Elementary Observations by Part of Unit

	Part of unit	Not Observed	Ineffective	Effective
% of observations	Beginning (n=17)	6%	6%	88%
	Middle (n=20)	0%	5%	95%

Table 38: The teacher addresses student learning objectives in the lesson through the **psychomotor** domain, Secondary Observations by Part of Unit

	Part of unit	Not Observed	Ineffective	Effective
% of observations	Beginning (n=16)	0%	25%	75%
	Middle (n=14)	14%	7%	79%
	End (n=22)	9%	9%	82%

Table 39: The teacher addresses student learning objectives in the lesson through the **affective** domain, Elementary Observations by Part of Unit

	Part of unit	Not Observed	Ineffective	Effective
% of observations	Beginning (n=17)	29%	0%	71%
	Middle (n=20)	65%	0%	35%

Table 40: The teacher addresses student learning objectives in the lesson through the **affective** domain, Secondary Observations by Part of Unit

	Part of unit	Not Observed	Ineffective	Effective
% of observations	Beginning (n=16)	75%	6%	19%
	Middle (n=14)	57%	7%	36%
	End (n=22)	86%	5%	9%

Table 41: The teacher groups and/or regroups students, Elementary Observations by Part of Unit

	Part of unit	Not Observed	Ineffective	Effective
% of observations	Beginning (n=17)	35%	0%	65%
	Middle (n=20)	40%	10%	50%

Table 42: The teacher groups and/or regroups students, Secondary Observations by Part of Unit

	Part of unit	Not Observed	Ineffective	Effective
% of observations	Beginning (n=16)	12%	19%	69%
	Middle (n=14)	36%	7%	57%
	End (n=22)	23%	5%	73%

Table 43: Sportsmanship is evident, Elementary Observations by Part of Unit

	Part of unit	Not Observed	Ineffective	Effective
% of observations	Beginning (n=17)	6%	0%	94%
	Middle (n=20)	0%	0%	100%

Table 44: Sportsmanship is evident, Secondary Observations by Part of Unit

	Part of unit	Not Observed	Ineffective	Effective
% of observations	Beginning (n=16)	12%	19%	69%
	Middle (n=14)	7%	14%	79%
	End (n=22)	0%	9%	91%

Table 45: Students engage in an instant activity upon entering class, Elementary Observations by Part of Unit

	Part of unit	Not Observed	Ineffective	Effective
% of observations	Beginning (n=17)	29%	6%	65%
	Middle (n=20)	40%	10%	50%

Table 46: Students engage in an instant activity upon entering class, Secondary Observations by Part of Unit

	Part of unit	Not Observed	Ineffective	Effective
% of observations	Beginning (n=16)	56%	19%	25%
	Middle (n=14)	57%	7%	36%
	End (n=22)	91%	5%	5%

Table 47: The teacher moves around the class to provide feedback to as many students as possible, Elementary Observations by Part of Unit

	Part of unit	Not Observed	Ineffective	Effective
% of observations	Beginning (n=17)	6%	29%	65%
	Middle (n=20)	0%	50%	50%

Table 48: The teacher moves around the class to provide feedback to as many students as possible, Secondary Observations by Part of Unit

	Part of unit	Not Observed	Ineffective	Effective
% of observations	Beginning (n=16)	12%	0%	88%
	Middle (n=14)	14%	21%	64%
	End (n=22)	5%	18%	77%

Table 49: Number of checks for understanding, Elementary Observations by Part of Unit

	Part of unit	Not Observed	Ineffective	Effective
% of observations	Beginning (n=17)	0%	24%	76%
	Middle (n=20)	0%	10%	90%

Table 50: Number of checks for understanding, Secondary Observations by Part of Unit

	Part of unit	Not Observed	Ineffective	Effective
% of observations	Beginning (n=16)	19%	25%	56%
	Middle (n=14)	29%	36%	36%
	End (n=22)	59%	32%	9%

Table 51: Instructional Components in Elementary Observations, by Class Size

	Class Size	Warm-up	Student practice	Application	Instructional Presentation	Assessment	Cool-down	Closure
% of observations	At or below average (n=16)	88%	88%	88%	88%	13%	0%	44%
	Above Average (n=23)	91%	83%	70%	96%	26%	17%	52%

Table 52: Instructional Components in Middle School Observations, by Class Size

	Class Size	Warm-up	Student practice	Application	Instructional Presentation	Assessment	Cool-down	Closure
% of observations	At or below average (n=19)	90%	42%	74%	79%	11%	0%	47%
	Above Average (n=8)	75%	75%	63%	88%	0%	0%	0%

Table 53: Instructional Components in High School Observations, by Class Size

	Class Size	Warm-up	Student practice	Application	Instructional Presentation	Assessment	Cool-down	Closure
% of observations	At or below average (n=10)	90%	60%	80%	90%	30%	30%	30%
	Above Average (n=11)	91%	46%	82%	55%	18%	9%	18%

Table 54: Objectives for lesson are communicated in writing and/or orally, Elementary Observations by Class Size

	Class Size	Not Observed	Ineffective	Effective
% of observations	At or below average (n=16)	13%	13%	75%
	Above Average (n=23)	35%	4%	61%

Table 55: Objectives for lesson are communicated in writing and/or orally, Middle School Observations by Class Size

	Class Size	Not Observed	Ineffective	Effective
% of observations	At or below average (n=19)	32%	11%	58%
	Above Average (n=8)	25%	13%	63%

Table 56: Objectives for lesson are communicated in writing and/or orally, High School Observations by Class Size

	Class Size	Not Observed	Ineffective	Effective
% of observations	At or below average (n=10)	10%	10%	80%
	Above Average (n=11)	27%	36%	36%

Table 57: The lesson allows for opportunities for practice of skills, Elementary Observations by Class Size

	Class Size	Not Observed	Ineffective	Effective
% of observations	At or below average (n=16)	0%	13%	87%
	Above Average (n=23)	0%	9%	91%

Table 58: The lesson allows for opportunities for practice of skills, Middle School Observations by Class Size

	Class Size	Not Observed	Ineffective	Effective
% of observations	At or below average (n=19)	47%	11%	42%
	Above Average (n=8)	50%	38%	13%

Table 59: The lesson allows for opportunities for practice of skills, High School Observations by Class Size

	Class Size	Not Observed	Ineffective	Effective
% of observations	At or below average (n=10)	10%	0%	90%
	Above Average (n=11)	18%	9%	73%

Table 60: Differentiation strategies to meet the needs of students with varying abilities are evident in the lesson, Elementary Observations by Class Size

	Class Size	Not Observed	Ineffective	Effective
% of observations	At or below average (n=16)	44%	25%	21%
	Above Average (n=23)	52%	13%	34%

Table 61: Differentiation strategies to meet the needs of students with varying abilities are evident in the lesson, Middle School Observations by Class Size

	Class Size	Not Observed	Ineffective	Effective
% of observations	At or below average (n=19)	63%	5%	32%
	Above Average (n=8)	13%	13%	75%

Table 62: Differentiation strategies to meet the needs of students with varying abilities are evident in the lesson, High Observations by Class Size

	Class Size	Not Observed	Ineffective	Effective
% of observations	At or below average (n=10)	40%	0%	60%
	Above Average (n=11)	73%	9%	18%

Table 63: The physical education content is aligned with the APS PE curriculum, Elementary Observations by Class Size

	Class Size	Not Observed	Ineffective	Effective
% of observations	At or below average (n=16)	13%	0%	87%
	Above Average (n=23)	4%	0%	96%

Table 64: The physical education content is aligned with the APS PE curriculum, Middle School Observations by Class Size

	Class Size	Not Observed	Ineffective	Effective
% of observations	At or below average (n=19)	0%	15%	85%
	Above Average (n=8)	0%	13%	87%

Table 65: The physical education content is aligned with the APS PE curriculum, High School Observations by Class Size

	Class Size	Not Observed	Ineffective	Effective
% of observations	At or below average (n=10)	0%	0%	100%
	Above Average (n=11)	0%	18%	82%

Table 66: The teacher addresses student learning objectives in the lesson through the **cognitive** domain, Elementary Observations by Class Size

	Class Size	Not Observed	Ineffective	Effective
% of observations	At or below average (n=16)	13%	13%	75%
	Above Average (n=23)	17%	4%	78%

Table 67: The teacher addresses student learning objectives in the lesson through the **cognitive** domain, Middle School Observations by Class Size

	Class Size	Not Observed	Ineffective	Effective
% of observations	At or below average (n=19)	42%	0%	58%
	Above Average (n=8)	63%	12%	25%

Table 68: The teacher addresses student learning objectives in the lesson through the **cognitive** domain, High School Observations by Class Size

	Class Size	Not Observed	Ineffective	Effective
% of observations	At or below average (n=10)	20%	0%	80%
	Above Average (n=11)	64%	9%	27%

Table 69: The teacher addresses student learning objectives in the lesson through the **psychomotor** domain, Elementary Observations by Class Size

	Class Size	Not Observed	Ineffective	Effective
% of observations	At or below average (n=16)	0%	6%	94%
	Above Average (n=23)	4%	4%	91%

Table 70: The teacher addresses student learning objectives in the lesson through the **psychomotor** domain, Middle School Observations by Class Size

	Class Size	Not Observed	Ineffective	Effective
% of observations	At or below average (n=19)	5%	11%	84%
	Above Average (n=8)	13%	13%	75%

Table 71: The teacher addresses student learning objectives in the lesson through the **psychomotor** domain, High School Observations by Class Size

	Class Size	Not Observed	Ineffective	Effective
% of observations	At or below average (n=10)	0%	10%	90%
	Above Average (n=11)	55%	27%	18%

Table 72: The teacher addresses student learning objectives in the lesson through the **affective** domain, Elementary Observations by Class Size

	Class Size	Not Observed	Ineffective	Effective
% of observations	At or below average (n=16)	56%	0%	44%
	Above Average (n=23)	39%	0%	61%

Table 73: The teacher addresses student learning objectives in the lesson through the **affective** domain, Middle School Observations by Class Size

	Class Size	Not Observed	Ineffective	Effective
% of observations	At or below average (n=19)	74%	0%	26%
	Above Average (n=8)	100%	0%	0%

Table 74: The teacher addresses student learning objectives in the lesson through the **affective** domain, High School Observations by Class Size

	Class Size	Not Observed	Ineffective	Effective
% of observations	At or below average (n=10)	80%	0%	20%
	Above Average (n=11)	18%	18%	64%

Table 75: The teacher groups and/or regroups students, Elementary Observations by Class Size

	Class Size	Not Observed	Ineffective	Effective
% of observations	At or below average (n=16)	31%	6%	63%
	Above Average (n=23)	39%	4%	57%

Table 76: The teacher groups and/or regroups students, Middle School Observations by Class Size

	Class Size	Not Observed	Ineffective	Effective
% of observations	At or below average (n=19)	11%	11%	79%
	Above Average (n=8)	25%	38%	38%

Table 77: The teacher groups and/or regroups students, High School Observations by Class Size

	Class Size	Not Observed	Ineffective	Effective
% of observations	At or below average (n=10)	20%	0%	80%
	Above Average (n=11)	27%	0%	73%

Table 78: Sportsmanship is evident, Elementary Observations by Class Size

	Class Size	Not Observed	Ineffective	Effective
% of observations	At or below average (n=16)	0%	6%	94%
	Above Average (n=23)	0%	0%	100%

Table 79: Sportsmanship is evident, Middle School Observations by Class Size

	Class Size	Not Observed	Ineffective	Effective
% of observations	At or below average (n=19)	5%	11%	84%
	Above Average (n=8)	13%	25%	63%

Table 80: Sportsmanship is evident, High School Observations by Class Size

	Class Size	Not Observed	Ineffective	Effective
% of observations	At or below average (n=10)	0%	0%	100%
	Above Average (n=11)	9%	18%	73%

Table 81: Students engage in an instant activity upon entering class, Elementary Observations by Class Size

	Class Size	Not Observed	Ineffective	Effective
% of observations	At or below average (n=16)	44%	6%	50%
	Above Average (n=23)	65%	9%	26%

Table 82: Students engage in an instant activity upon entering class, Middle School Observations by Class Size

	Class Size	Not Observed	Ineffective	Effective
% of observations	At or below average (n=19)	79%	0%	21%
	Above Average (n=8)	50%	25%	25%

Table 83: Students engage in an instant activity upon entering class, High School Observations by Class Size

	Class Size	Not Observed	Ineffective	Effective
% of observations	At or below average (n=10)	80%	0%	20%
	Above Average (n=11)	73%	18%	9%

Table 84: The teacher moves around the class to provide feedback to as many students as possible, Elementary Observations by Class Size

	Class Size	Not Observed	Ineffective	Effective
% of observations	At or below average (n=16)	0%	50%	50%
	Above Average (n=23)	4%	30%	65%

Table 85: The teacher moves around the class to provide feedback to as many students as possible, Middle School Observations by Class Size

	Class Size	Not Observed	Ineffective	Effective
% of observations	At or below average (n=19)	5%	5%	90%
	Above Average (n=8)	25%	25%	50%

Table 86: The teacher moves around the class to provide feedback to as many students as possible, High School Observations by Class Size

	Class Size	Not Observed	Ineffective	Effective
% of observations	At or below average (n=10)	10%	0%	90%
	Above Average (n=11)	9%	27%	64%

Table 87: Number of checks for understanding, Elementary Observations by Class Size

	Class Size	Not Observed	Ineffective	Effective
% of observations	At or below average (n=16)	0%	13%	87%
	Above Average (n=23)	4%	17%	78%

Table 88: Number of checks for understanding, Middle School Observations by Class Size

	Class Size	Not Observed	Ineffective	Effective
% of observations	At or below average (n=19)	53%	21%	26%
	Above Average (n=8)	28%	25%	38%

Table 89: Number of checks for understanding, High School Observations by Class Size

	Class Size	Not Observed	Ineffective	Effective
% of observations	At or below average (n=10)	0%	60%	40%
	Above Average (n=11)	55%	18%	27%

Physical Activity in PE Classes

The Health and PE Office, the Office of Planning and Evaluation, and the Health and PE evaluation planning committee adapted and developed three observation tools to assess the prevalence of best instructional practices specific to the disciplines of PE and health:

- **PE instructional practices**: occurrence and effectiveness of expected instructional components
- **PE physical activity**: amount of time students spend being physically active and types of activity
- **Health instructional practices**: occurrence and effectiveness of expected instructional components

Recently retired health and PE teachers from Virginia school districts were hired to observe both types of classes. Observers participated in an all-day training for the two PE observation tools, and a separate training for the health observation tool. The same set of observers conducted observations in both PE and health classes.

PE observations occurred during the 2016-17 school year and health observations occurred during fall 2017 and winter 2018.

The physical activity observation tool was developed for this evaluation to measure the proportion of class time that students are physically active, as well as what types of physical activity students engage in. The number and percentage of teachers observed are shown in table 1.

Table 1: Number and Percentage of Teachers Observed, PE Physical Activity Observation Tool

Teacher Group	Number of Teachers	Number of Observations	Percent Observed	Margin of Error (95% Confidence Level)
Elementary Physical Education Teachers	53	34	64%	10.2%
Middle School Physical Education Teachers	36	21	58%	14%
High School Physical Education Teachers	37	24	65%	12%

Table 2: Part of Unit

		Beginning	Middle	End (review)
% of observations	Elementary (n=34)	38%	59%	3%
	Middle School (n=21)	38%	24%	38%
	High School (n=24)	17%	33%	50%

Table 3: Definition of Activity Types Observed

Activity Type	Activity Type Definition
Student Practice	Students reinforce new knowledge and skill development through practice and drills
Instructional Presentation	Instruction by teacher to present topic and activity objectives, content, and related instructions.
Application	Students combine more than one skill in authentic play or game situations
Assessment	Students demonstrate understanding through authentic assessment

Table 4: Average Number of Students and Teachers

	Average number of total students in observed class	Range of total number of students	Average number of teachers in a class	Range of total number of teachers	Average number of students per teacher
Elementary (n=33)	32.9	14-52	1.6	1-3	20.1
Middle School (n=21)	40.1	21-130	1.4	1-5	29.4
High School (n=23)	22.4	10-39	1.4	1-3	19.0

Table 5: Average Percent of Class Activity Type, by Grade Level

	Type of Class Activity			
	Student Practice	Instructional Presentation	Application	Assessment
Elementary (n=34)	28%	40%	28%	4%
Middle School (n=21)	42%	22%	35%	2%
High School (n=24)	30%	25%	41%	4%

Table 6: Average Percent of Moderate to Vigorous Physical Activity (MVPA) Observed, by Grade Level

	Average % of Class Time including MVPA Activity	Range of MVPA Time	Percent of Observations with Periods of MVPA
Elementary (n=34)	8%	0%-34% of class time	47%
Middle School (n=21)	16%	0%-80% of class time	48%
High School (n=24)	17%	0%-79% of class time	58%

Table 7: Average Percent of Moderate to Vigorous Physical Activity (MVPA) Observed, by Grade Level and Class Size

	Class Size	Average % of Class Time including MVPA Activity	Range of MVPA Time	Percent of Observations with Periods of MVPA
Elementary (n=34)	Average or Below (n=14)	3%	0%-29%	29%
	Above Average(n=19)	11%	0%-3%	58%
Middle School (n=21)	Average or Below (n=16)	16%	0%-80%	50%
	Above Average (n=5)	15%	0%69%	40%
High School (n=24)	Average or Below (n=12)	20%	9%-47%	50%
	Above Average (n=11)	13%	0%-79%	64%

Table 8: Average Percent of Moderate to Vigorous Physical Activity (MVPA) Observed in Student Practice and Application, by Grade Level

	Average % of Student Practice Time including MVPA Activity	Range of MVPA Time in Student Practice	% of Student Practice observations with MVPA Activity	Average % of Application Time including MVPA Activity	Range of MVPA Time in Application	% of Application observations with MVPA Activity
Elementary (n=28, 30)	9%	0%-63%	21%	12%	0%-100%	30%
Middle School (n=17, 14)	25%	0%-100%	53%	21%	0%-100%	21%
High School (n=19, 20)	28%	0%-100%	37%	38%	0%-100%	55%

Table 9: Average Percent of Moderate to Vigorous Physical Activity (MVPA) Observed in Student Practice and Application, by Grade Level and Class Size

	Class Size	Average % of Student Practice Time including MVPA Activity	Range of MVPA Time in Student Practice	Average % of Application Time including MVPA Activity	Range of MVPA Time in Application
Elementary	Average or Below (n=11, 14)	0%	0%	9%	0%-59%
	Above Average(n=16, 16)	12%	0-62%	15%	0%-100%
Middle School	Average or Below (n=12 ,12)	28%	0%-100%	17%	0%-100%
	Above Average (n=5, 2*)	17%	0%-100%	*	*
High School	Average or Below (n=10, 11)	31%	0%-100%	36%	0%-100%
	Above Average (n=8, 8)	16%	0%-100%	35%	0%-100%

*Sample sizes less than 5 are not reported

Table 10: Percent of Observed Classes with Physical Activity Type

	Agility	Flexibility	Strength	Muscular Endurance	Cardio
Elementary (n=34)	88%	59%	56%	56%	85%
Middle School (n=21)	86%	95%	43%	71%	76%
High School (n=24)	88%	92%	58%	79%	71%

Table 11: Average Percent of Students on Target

	Average Percent of Students on Target	Range of Percent of Students on Target
Elementary (n=34)	91%	72%-100%
Middle School (n=21)	91%	48%-100%
High School (n=24)	91%	51%-100%

Health Instructional Practices

The Health and PE Office, the Office of Planning and Evaluation, and the Health and PE evaluation planning committee adapted and developed three observation tools to assess the prevalence of best instructional practices specific to the disciplines of PE and health:

- **PE instructional practices**: occurrence and effectiveness of expected instructional components
- **PE physical activity**: amount of time students spend being physically active and types of activity
- **Health instructional practices**: occurrence and effectiveness of expected instructional components

Recently retired health and PE teachers from Virginia school districts were hired to observe both types of classes. Observers participated in an all-day training for the two PE observation tools, and a separate training for the health observation tool. The same set of observers conducted observations in both PE and health classes.

PE observations occurred during the 2016-17 school year and health observations occurred during fall 2017 and winter 2018.

The health instructional practices tool was developed for this evaluation and is primarily based on guidelines from SHAPE America[1] and the Centers for Disease Control (CDC)[2]. The number and percentage of teachers observed are shown in table 1.

Table 1: Number and Percentage of Teachers Observed, Health Instructional Practices Observation Tool

Teacher Group	Number of Teachers	Number of Observations	Percent Observed	Margin of Error (95% Confidence Level)
Middle School Health Teachers	34	27	79%	8.7%
High School Health Teachers	24	15	63%	16%

Table 2: Part of Unit Observed

		Beginning	Middle	End (review)
% of observations	Middle School (n=27)	30%	18%	52%
	High School (n=15)	40%	7%	53%

[1] www.shapeamerica.org
[2] www.cdc.gov/healthyschools/sher/characteristics

Table 3: Number of Students in Class

	Average Number of total students in observed class	Range of Total Number of Students
Middle School (n=27)	27.2	12-39
High School (n=15)	24.5	12-33

Table 4: Instructional Components

		Warm-up	Student practice	Application	Assessment	Closure
% of observations	Middle School (n=27)	44%	33%	70%	15%	44%
	High School (n=15)	73%	33%	60%	0%	60%

Table 5: Location of observation

		Classroom	Computer Lab	Cafeteria	Multipurpose room	Library	Other
% of observations	Middle School (n=20)	70%	0%	4%	0%	0%	26%
	High School (n=15)	100%	0%	0%	0%	0%	0%

Table 6: Delivery of Objectives for lesson-writing and/or orally

		Writing	Orally	Both Writing and Orally	Neither
% of observations	Middle School (n=27)	11%	22%	56%	11%
	High School (n=15)	7%	40%	47%	7%

Table 7: Objectives for lesson are communicated in writing and/or orally

		Not Observed	Ineffective	Effective
% of observations	Middle School (n=27)	7%	7%	85%
	High School (n=15)	20%	13%	67%

Table 8: The lesson facilitates the development of essential skills- **communication**

		Not Observed	Ineffective	Effective
% of observations	Middle School (n=27)	52%	11%	37%
	High School (n=15)	53%	7%	40%

Table 9: The lesson facilitates the development of essential skills- **decision-making**

		Not Observed	Ineffective	Effective
% of observations	Middle School (n=27)	26%	22%	52%
	High School (n=15)	20%	27%	53%

Table 10: The lesson facilitates the development of essential skills- **planning and goal-setting**

		Not Observed	Ineffective	Effective
% of observations	Middle School (n=27)	67%	15%	18%
	High School (n=15)	80%	7%	13%

Table 11: The lesson facilitates the development of essential skills- **advocacy**

		Not Observed	Ineffective	Effective
% of observations	Middle School (n=27)	56%	4%	41%
	High School (n=15)	67%	0%	33%

Table 12: The teacher demonstrates skills

		Not Observed	Ineffective	Effective
% of observations	Middle School (n=27)	52%	4%	44%
	High School (n=15)	53%	7%	40%

Table 13: Students practice and rehearse skills using real-life scenarios.

		Not Observed	Ineffective	Effective
% of observations	Middle School (n=27)	67%	4%	30%
	High School (n=15)	80%	7%	13%

Table 14: The teacher groups and/or regroups students

		Not Observed	Ineffective	Effective
% of observations	Middle School (n=27)	48%	11%	41%
	High School (n=15)	40%	13%	47%

Table 15: The teacher employs instructional strategies that promote student self-reflection

		Not Observed	Ineffective	Effective
% of observations	Middle School (n=27)	22%	22%	56%
	High School (n=15)	20%	33%	47%

Table 16: What were the instructional strategies used to promote student self-reflection?

		N/A	Journal	Q&A	Other
%of observations	Middle School (n=27)	22%	15%	52%	37%
	High School (n=15)	33%	20%	60%	27%

Table 17: The lesson includes engaging activities

		Not Observed	Ineffective	Effective
% of observations	Middle School (n=27)	18%	15%	67%
	High School (n=15)	13%	33%	53%

Table 18: The lesson provides current, accurate, and reliable information for usable purposes.

		Not Observed	Ineffective	Effective
% of observations	Middle School (n=27)	11%	15%	74%
	High School (n=15)	13%	20%	67%

Table 19: The lesson includes instructional strategies and learning experiences that are student-centered, interactive, and/or experiential- **Group discussions**

		Not Observed	Ineffective	Effective
% of observations	Middle School (n=27)	48%	22%	30%
	High School (n=15)	27%	13%	60%

Table 20: The lesson includes instructional strategies and learning experiences that are student-centered, interactive, and/or experiential- **Problem solving**

		Not Observed	Ineffective	Effective
% of observations	Middle School (n=27)	67%	26%	7%
	High School (n=15)	80%	0%	20%

Table 21: The lesson includes instructional strategies and learning experiences that are student-centered, interactive, and/or experiential- **Role playing**

		Not Observed	Ineffective	Effective
% of observations	Middle School (n=27)	85%	0%	15%
	High School (n=15)	93%	0%	7%

Table 22: The lesson includes independent student work

		Not Observed	Ineffective	Effective
% of observations	Middle School (n=27)	19%	11%	70%
	High School (n=15)	13%	13%	73%

Table 23: The lesson checked for understanding

		Not Observed	Ineffective	Effective
% of observations	Middle School (n=27)	56%	15%	30%
	High School (n=15)	53%	20%	27%

Table 24: Technology that students used during the lesson

		IPads	Computers	Software	Webpages	Other	None
% of observations	Middle School (n=27)	48%	4%	11%	11%	11%	52%
	High School (n=15)	40%	27%	27%	20%	20%	40%

Table 25: Use of technology*

		Actively engaging students in learning tasks	Actively engaging students in creating a product/service	Distracting	None of the above
% of observations	Middle School (n=14)	54%	46%	23%	23%
	High School (n=9)	78%	22%	11%	22%

*responses of N/A (no technology in use) were removed from these calculations.

Table 26: Portion of the lesson dedicated to whole class lecture

		Less than 25%	25-50%	51-75%	More than 75%
% of observations	Middle School (n=27)	30%	48%	15%	7%
	High School (n=15)	27%	27%	27%	20%