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

The Classroom Assessment Scoring System (CLASS) is an observation tool developed at the University of Virginia's Curry School of Education and managed by Teachstone. It is designed to help analyze the interactions between teachers and their students in order to boost the effectiveness of teaching and learning. Research shows that students in classrooms where teachers earn higher CLASS scores achieve at higher levels than their peers in classrooms with lower CLASS scores[1].

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 tool 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.

As part of multiple ongoing evaluations, CLASS observations were conducted throughout the 2014-15 school year. Observations included all content areas. For purposes of the Gifted Services evaluation, CLASS scores were analyzed to answer the following three evaluation questions:

- To what extent are best practices in gifted education evident in instruction for gifted students?
- To what extent do APS teachers effectively differentiate their own instruction for advanced learners?
- To what extent are students identified as gifted engaged?

This analysis of CLASS scores includes the following types of classrooms:

- **Elementary** homerooms with a cluster of gifted students (5-8 students)
- **Middle school** classrooms with a cluster of gifted students identified in the content area of the class
- **High school** classrooms with a cluster of gifted students identified in the content area of the class

Middle and high school observations include the following content areas: ELA, Math, Social Studies, and Music. Secondary observations include both regular classes and advanced courses, and each table in this appendix specifies which type of courses are included in that table's data. Due to the small number of observations with clusters in the area of Art or Science, these content areas are omitted.

Dimensions specifically associated with **differentiation** are listed in **Table 1**, along with indicators associated with each dimension.

[1] Observations of effective teacher-student interactions in secondary school classrooms: predicting student achievement with the classroom assessment scoring system – Secondary (http://files.eric.ed.gov/fulltext/ED556047.pdf)

Table 1: Indicators Associated with CLASS Dimensions Relevant to Differentiation[2]

CLASS Dimension	Indicators
Teacher Sensitivity	• Awareness • Responsiveness to academic and social/emotional needs • Effectiveness in addressing problems • Student comfort
Regard for Student/Adolescent Perspectives	• Flexibility and student/adolescent focus • Connections to current life (upper elementary and secondary) • Support for autonomy and leadership • Meaningful peer interactions (upper elementary and secondary) • Student expression (lower elementary) • (Lack of) Restriction of movement (lower elementary)
Instructional Learning Formats	• Learning targets/organization • Variety of modalities, strategies, and materials • Active facilitation • Effective engagement
Concept Development (Lower Elementary)	• Analysis and Reasoning • Creating • Integration • Connections to the Real World
Analysis and Inquiry (Upper Elementary and Secondary)	• Facilitation of higher-order thinking • Opportunities for novel application • Metacognition

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[3].

Elementary CLASS Scores

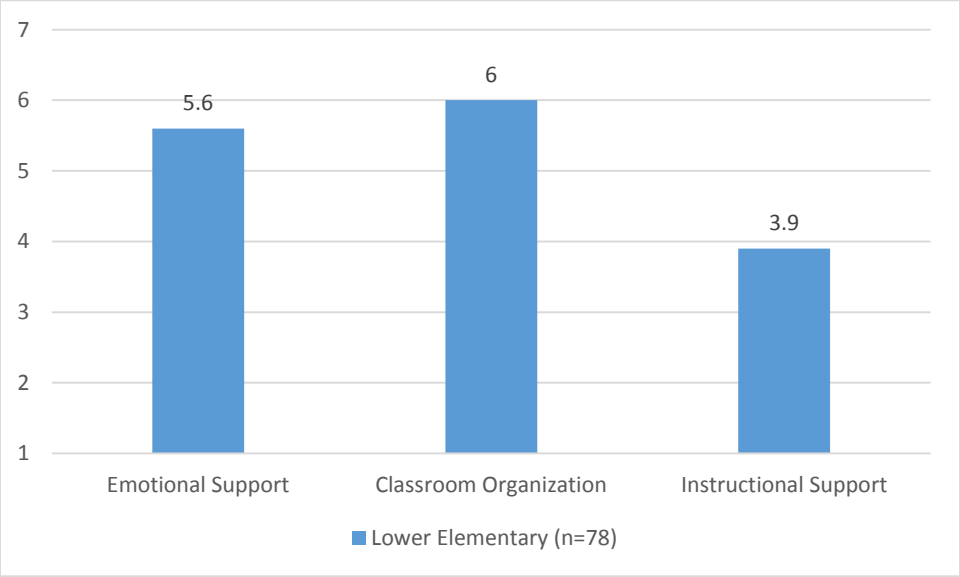
Table 2: Average Domain and Dimension Scores for Lower Elementary Classes with a Gifted Cluster

Average Domain and Dimension Scores	Lower Elementary		
	N	Mean	Std. Deviation
Emotional Support	**78**	5.6	0.4
Positive Climate	78	5.5	0.6

[2] CLASS Dimensions Guides (2014). Teachstone Training, LLC.
[3] Teachstone, personal communication, June 13, 2014 and January 5, 2016

Average Domain and Dimension Scores	Lower Elementary		
	N	Mean	Std. Deviation
Negative Climate[4]	78	1.0	0.2
Teacher Sensitivity	78	5.8	0.6
Regard for Student Perspectives	78	4.2	0.9
Classroom Organization	**78**	6.0	0.6
Behavior Management	78	6.3	0.8
Productivity	78	6.3	0.7
Instructional Learning Formats	78	5.5	0.6
Instructional Support	**78**	3.9	0.8
Concept Development	78	3.7	0.9
Quality of Feedback	78	4.1	0.8
Language Modeling	78	4.0	0.9

Figure 1: Average Lower Elementary CLASS Scores with a Gifted Cluster by Domain and Level



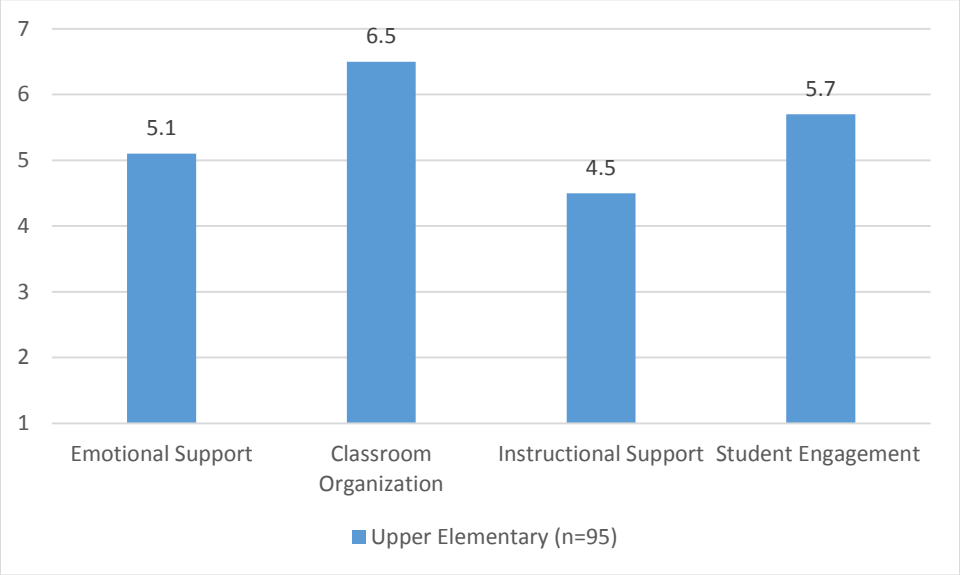
[4] A lower score is desirable for the Negative Climate Dimension. The Negative Climate score is reversed when calculating the Emotional Support Domain score.

Table 3: Average Domain and Dimension Scores for Upper Elementary Classes with a Gifted Cluster

Average Domain and Dimension Scores	Upper Elementary		
	N	Mean	Std. Deviation
Emotional Support	**95**	5.1	0.6
Positive Climate	95	5.5	0.8
Teacher Sensitivity	95	5.7	0.7
Regard for Student Perspectives	95	4.2	0.9
Classroom Organization	**95**	6.5	0.4
Behavior Management	95	6.3	0.7
Productivity	95	6.3	0.6
Negative Climate[5]	95	1.1	0.2
Instructional Support	**95**	4.5	0.8
Content Understanding	95	5.5	0.7
Analysis and Inquiry	95	4.9	0.9
Instructional Learning Formats	95	3.9	1.2
Quality of Feedback	95	4.4	0.8
Instructional Dialogue	95	4.3	1.0
Student Engagement	**95**	5.7	0.6

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

Figure 2: Average Upper Elementary CLASS Scores with a Gifted Cluster by Domain and Level



Secondary CLASS Scores

Table 4 : Average Domain and Dimension Scores for Middle and High School **ELA** Courses with a Gifted Cluster

Average Domain and Dimension Scores	Middle School			High School (Advanced Courses)		
	N	Mean	Std. Deviation	N	Mean	Std. Deviation
Emotional Support	**35**	**5.6**	**1.0**	**6**	**5.8**	**1.0**
Positive Climate	35	5.7	1.1	6	6.1	0.8
Teacher Sensitivity	35	5.7	1.1	6	6.0	0.9
Regard for Adolescent Perspectives	35	5.3	1.1	6	5.3	1.3
Classroom Organization	**35**	**6.2**	**0.8**	**6**	**6.6**	**0.4**
Behavior Management	35	5.9	0.9	6	6.5	0.5
Productivity	35	5.9	1.0	6	6.4	0.7
Negative Climate[6]	35	1.2	0.7	6	1.0	0.0
Instructional Support	**35**	**5.3**	**1.0**	**6**	**5.5**	**1.0**
Content Understanding	35	5.4	1.1	6	5.9	1.1
Analysis and Inquiry	35	5.1	1.2	6	5.4	1.3

[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			High School (Advanced Courses)		
	N	Mean	Std. Deviation	N	Mean	Std. Deviation
Instructional Learning Formats	35	5.7	0.9	6	5.5	1.2
Quality of Feedback	35	5.1	1.2	6	5.3	1.0
Instructional Dialogue	35	5.1	1.2	6	5.3	1.0
Student Engagement	**35**	5.8	0.9	**6**	5.8	0.8

Figure 3: Average **ELA** CLASS Scores with a Gifted Cluster by Domain and Level

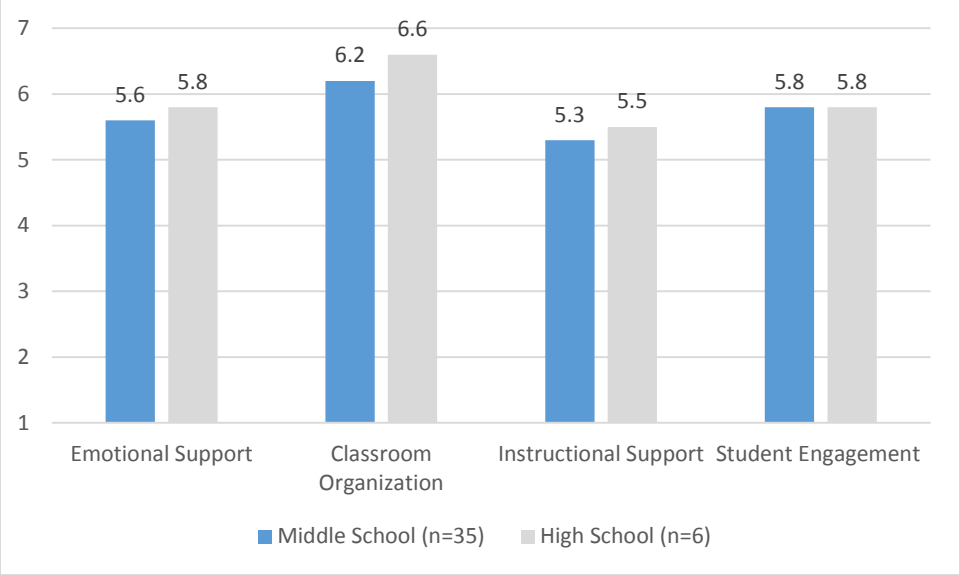
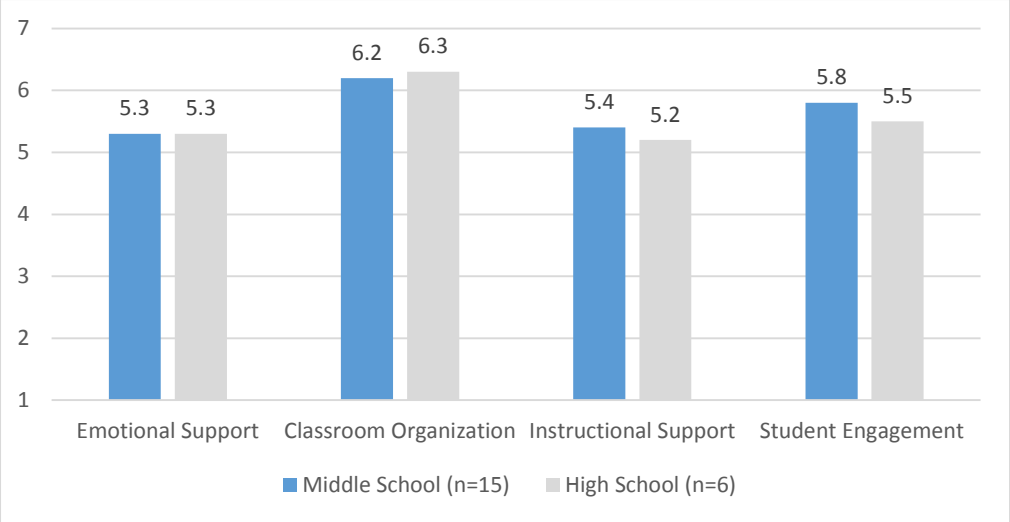


Table 5: Average Domain and Dimension Scores for Middle and High School **Math** Courses with a Gifted Cluster

Average Domain and Dimension Scores	Middle School (Advanced Courses)			High School (Advanced Courses)		
	N	Mean	Std. Deviation	N	Mean	Std. Deviation
Emotional Support	**15**	5.4	0.7	**6**	5.3	0.3
Positive Climate	15	5.5	0.8	6	5.8	0.4
Teacher Sensitivity	15	5.6	0.7	6	5.4	0.2
Regard for Adolescent Perspectives	15	5.0	1.0	6	4.9	0.4
Classroom Organization	**15**	6.2	0.4	**6**	6.3	0.1

Average Domain and Dimension Scores	Middle School (Advanced Courses)			High School (Advanced Courses)		
	N	Mean	Std. Deviation	N	Mean	Std. Deviation
Behavior Management	15	5.8	0.6	6	5.8	0.3
Productivity	15	6.0	0.6	6	6.0	0.0
Negative Climate[7]	15	1.2	0.4	6	1.1	0.2
Instructional Support	**15**	5.4	0.9	**6**	5.2	0.4
Content Understanding	15	5.5	0.9	6	5.5	0.8
Analysis and Inquiry	15	5.3	1.1	6	4.9	0.8
Instructional Learning Formats	15	5.7	0.7	6	5.2	0.3
Quality of Feedback	15	5.2	1.0	6	5.2	0.4
Instructional Dialogue	15	5.2	1.1	6	5.0	0.4
Student Engagement	**15**	5.8	0.8	**6**	5.5	0.4

Figure 4: Average **Math** CLASS Scores with a Gifted Cluster by Domain and Level



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

Table 6: Average Domain and Dimension Scores for Middle and High School **Social Studies** Courses with a Gifted Cluster

Average Domain and Dimension Scores	Middle School			High School (Advanced Courses)		
	N	Mean	Std. Deviation	N	Mean	Std. Deviation
Emotional Support	**6**	6.1	0.9	**6**	5.7	0.2
Positive Climate	6	6.2	0.8	6	6.0	0.0
Teacher Sensitivity	6	6.0	0.9	6	5.9	0.2
Regard for Adolescent Perspectives	6	6.0	1.5	6	5.3	0.4
Classroom Organization	**6**	6.5	0.5	**6**	6.2	0.2
Behavior Management	6	6.3	0.8	6	5.9	0.2
Productivity	6	6.3	0.8	6	5.7	0.5
Negative Climate[8]	6	1.2	0.3	6	1.0	0.0
Instructional Support	**6**	5.4	1.2	**6**	5.4	0.5
Content Understanding	6	5.3	1.4	6	5.6	0.7
Analysis and Inquiry	6	5.5	1.2	6	5.6	0.7
Instructional Learning Formats	6	6.0	1.1	6	5.4	0.6
Quality of Feedback	6	4.9	1.4	6	5.3	0.6
Instructional Dialogue	6	5.3	1.3	6	5.1	0.6
Student Engagement	**6**	6.2	0.8	**6**	5.6	0.6

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

Figure 5: Average **Social Studies** CLASS Scores with a Gifted Cluster by Domain and Level

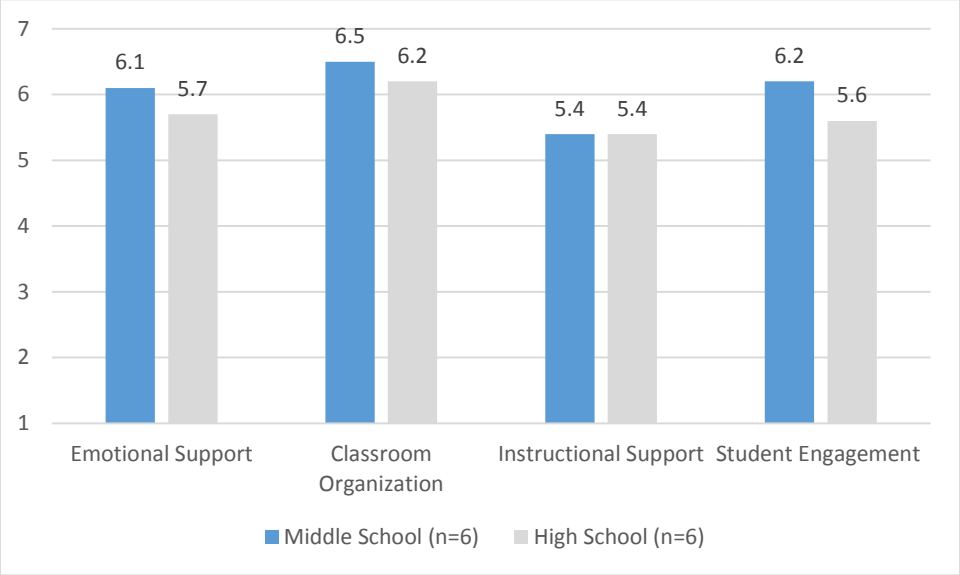
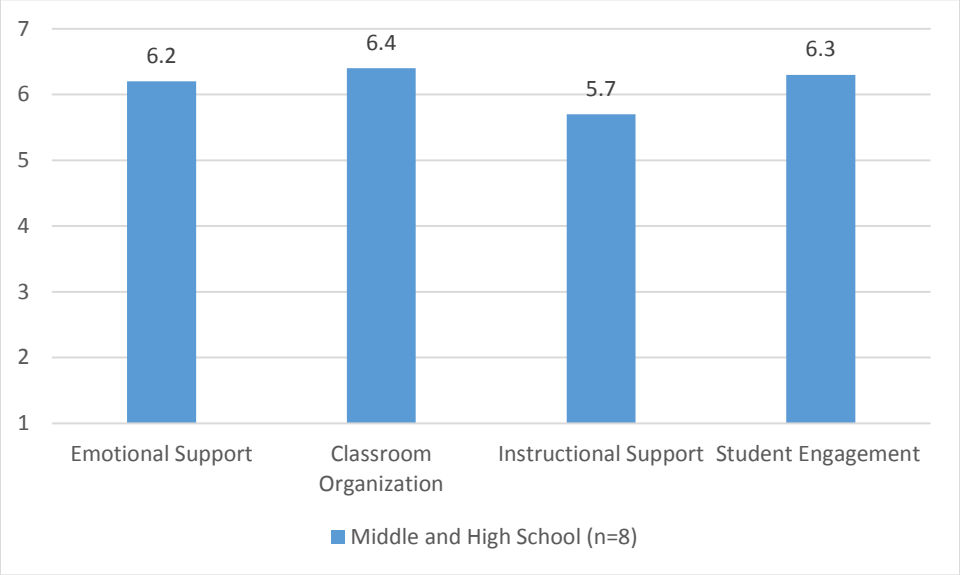


Table 7: Average Domain and Dimension Scores for Middle and High School **Music** Courses with a Gifted Cluster

Average Domain and Dimension Scores	Middle and High School (Includes 6 Advanced Courses)		
	N	Mean	Std. Deviation
Emotional Support	**8**	6.2	0.6
Positive Climate	8	6.4	0.5
Teacher Sensitivity	8	6.3	0.6
Regard for Adolescent Perspectives	8	6.0	0.8
Classroom Organization	**8**	6.4	0.5
Behavior Management	8	6.1	0.8
Productivity	8	6.2	0.7
Negative Climate[9]	8	1.0	0.0
Instructional Support	**8**	5.7	0.8
Content Understanding	8	6.2	0.6
Analysis and Inquiry	8	5.2	1.2
Instructional Learning Formats	8	6.1	0.4
Quality of Feedback	8	5.7	1.3
Instructional Dialogue	8	5.2	1.2
Student Engagement	**8**	6.3	0.7

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

Figure 6: Average **Music** CLASS Scores with a Gifted Cluster by Domain



Final Report on the Evaluation Study of Gifted Services in Arlington Public Schools

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Section I: Introduction to the study

The purpose of this evaluation component of Gifted Services in Arlington Public Schools was to render recommendations on instructional improvement that may move program services forward to the next level of excellence. This evaluation component was encased within a larger evaluation design plan for the entire gifted program, carried out by the Arlington Planning and Evaluation Office. This study addressed the first three objectives of that plan: 1) Best practices in gifted education are evident in instruction for gifted students, 2) APS teachers understand what differentiation is and effectively differentiate their own instruction for advanced learners, and 3) Curriculum for gifted students is implemented effectively and appropriately for all APS advanced learners.

Four key beliefs drove the instructional assessment component of the study: 1) the fundamental role of evaluation and review is to provide information that can be used to improve and advance gifted programs and services, 2) evaluation and review is a collaborative enterprise among various stakeholders in the school division and the consultant, 3) the use of multiple data sources helps to illuminate the complexity and salience of programmatic issues that need to be considered, and 4) rational decision-making is mediated by values. Therefore, the nature and degree of change to be made in a program are influenced by the social and political variables at work in a given context.

Research Questions

The following research questions guided the design and implementation of the evaluation of the gifted program instructional component. These questions mirrored the first three stated objectives conceptualized by the Arlington Planning and Evaluation Office:

1. ***To what extent is the gifted program being implemented according to its stated goals and objectives?*** Investigation of this question focused on describing and defining the current model of operation, including curriculum and instructional delivery, teacher quality, assessment, and student benefit data as available. Classroom observations across a sample of schools provided deeper insight into instructional practice.

2. ***To what extent are instructional components of the program perceived to be effective by relevant stakeholders?*** Investigation of this question focused on assessing the perceptions of resource teachers for the gifted (RTGs) on benefits and liabilities of relevant components of the program.

3. ***To what extent is the program aligned with best practices in the field of gifted education?*** Investigation of this question focused on assessing the congruence of the gifted program with the 97 best practices cited in the NAGC Program Standards.

4. ***What are the strengths and areas for improvement in the instructional component of the program? What are the recommendations for improvement in this area?*** Investigation of this question focused on the triangulation of data collected and analyzed for Questions 1-3.

Study design

Data collected to investigate Question #1 involved both empirical and perceptual sources. Onsite visits to each school designated in the sampling plan were conducted at Grade Levels 3-12. Moreover, relevant onsite interview data were collected from Resource Teachers for the Gifted (RTGs) in each school.

Data used to address Question #2 were collected from focus groups with RTGs at the elementary and secondary levels who provide direct and indirect services to gifted students.

Data collected to address Question #3 involved evaluator expertise in conducting a discrepancy analysis between the Pre-K-12 gifted program standards from the National Association of Gifted Children (NAGC) and the Arlington Gifted Program to determine the alignment of best practices in the six areas of interest: Learning and Development, Assessment, Curriculum Planning and Development, Learning Environments, Programming, and Professional Development. Areas of strength as well as gaps were determined by this analysis.

Finally, Question #4 was addressed through the triangulation of all data sources probed in order to make valid inferences about the nature and scope of program strengths and weaknesses and recommendations to be suggested for an action plan.

Instrumentation

The instrument employed for this study was the COS-R, an observation tool used in many gifted studies to assess use of differentiation for the gifted in classroom practice. The COS-R, in its original form, was a 25-item instrument that assesses the extent to which teachers are employing practices of differentiation in their teaching. It has been used in several studies, with strong

technical adequacy (.82 for inter-rater reliability). For the original instrument, content validity was established by an expert panel.

Changes to the Observation Form

The evaluation consultants made subscale changes in the COS-R to be more responsive to the needs of Arlington Public Schools for data on instructional practices within their gifted services program. Both the problem-solving subscale and the research subscale in the existing Classroom Observation Scale-Revised (COS-R) were deleted, and new subscales on materials and strategy utilization and on analysis and inquiry were added. These subscales have been constructed to align with instructional practice in Arlington Public Schools in general instructional and gifted education practices.

The materials and strategy utilization section items are based on the concern of the Supervisor of Gifted Services about teachers' applying the specific materials purchased for the program and the models and strategies found within those materials. She also expressed concern about whether the strategies presented in current professional development sessions, targeted at cluster teachers, were being implemented in the classroom.

The analysis and inquiry subscale section has been constructed to demonstrate the alignment of gifted classroom observations to the general CLASS observation form, used with all Arlington teachers. The items have been drawn from those found in the school division form but adapted to best instructional practice in gifted education where possible (ie. NAGC Pre-K-Grade 12 Gifted Education Programming Standards, 2012 and NAGC-CEC Teachers Preparation Standards in Gifted Education, 2016).

These two new categories were validated through content validity procedures. Two national experts in gifted education and research procedures for instrument development rated the new items. In addition, two experienced coordinators of gifted programs evaluated the new items as well. Ratings from national experts reached 4.5 on a 5-point scale for all items on both new subscales. Wording changes recommended from all evaluators were accepted and incorporated into the new scale. The total new scale now has 26 items, with each category containing 4 or 5 indicators.

Inter-rater reliability was accomplished through the training of all three observers, using the adapted form. Moreover, at most school sites, at least one teacher was dually or triply observed, rated, and then discussed by the observers in order to practice consensus rating on the new form. (See Appendix A for a copy of the revised instrument).

Sampling procedures for observations conducted

Classroom observations, using the structured form described in the instrumentation section above, were conducted at elementary, middle, and high school levels at selected school sites. Grade levels sampled included Grades 3-5 at the elementary level, 6-8 at the middle school level, and 9-12 at the high school level.

A purposive sample of schools was drawn for observation, based on demographics of the school, , and other local considerations. A total of eight elementary schools, two middle schools, and two high schools were included in the study, representing 33% of the elementary schools in the division, 40% of the middle schools, and 67% of the non-specialized high schools. Time and resources prohibited increasing the number of schools to be included in the study.

Based on available classrooms for observation, consultants observed from six to ten classes in each school setting at the elementary level, at Grades 3, 4, and 5. Most teachers who worked with gifted learners at the elementary level were observed at each of the elementary school sites. Consultants observed at least twelve classes at each middle school to ensure coverage of all four content areas and multiple grade levels, and twelve classes at each high school, accounting for all four core content areas at Grades 9 and 10, and selected AP and/or IB classes at Grades 11-12. Three consultants were used to observe at both middle schools and one high school in order to cover the number of observations needed.

Analysis of classroom observation data

Descriptive statistics such as means, frequencies, and percentages were used to present the classroom observation data in chart form. Data were aggregated across school sites and classrooms but disaggregated by elementary, middle, and high school contexts observed. Data were also disaggregated by content area, by the income levels of the sampled elementary schools observed (ie. Title I and non-Title I schools), and by observed vs. not observed behaviors.

The data entry and preliminary analyses through table construction described above were conducted by the Arlington Office of Planning and Evaluation. Interpretation of tabular data and other findings was conducted by the principal investigator.

Section II. Classroom observations

A total of 107 teacher observations were conducted between February 15 and March 18, 2016 in designated Arlington County Schools. The breakdown of observations was as follows: Elementary schools yielded 56 observations, middle schools, 27, and high schools, 24. Equal distributions by grade level and content areas were scheduled. However, in some schools, fewer social studies and science classes were observed. No social studies classes were observed at the elementary level due to the schedule for teaching that subject. In some elementary schools, fewer third or fourth grade classes were observed, due to scheduling difficulties.

(insert chart here of grade level, content areas, AP, and IB classes observed)

Analysis of observed differentiated behaviors of teachers

The COS-Revised instrument has six categories for observation. These six categories are the following: 1) curriculum planning and delivery, 2) materials and strategy utilization, 3) accommodations for individual differences, 4) critical thinking strategies, 5) creative thinking strategies, and 6) analysis and inquiry strategies. Each category contains four or five indicators that define the interpretation of that given category.

The evaluator analysis examined findings in three dimensions: 1) the frequency of observable differentiation strategies within and across each of the six categories by level of schooling (ie. elementary, middle, and high school); 2) the effectiveness of observable differentiation strategies by level of schooling; and 3) the effectiveness of the observable behaviors by the core content areas of English language arts, mathematics, science, and social studies. Moreover, the mean rating of effectiveness comparison by category of behavior for Title I and non-Title I elementary schools was noted. Finally, patterns of observed and non-observed behaviors were noted in the analysis as they were discerned by grade level and content area.

A. Analysis of school level results by frequency of use of differentiated materials and strategies

The following sections of the report analyze the frequency results for the use of differentiated teacher behaviors at the elementary, middle, and high school levels.

Elementary school results by frequency

At the elementary level, 56 classrooms were observed, using the COS-R across all four core subject areas.

Table 1

Observations by Grade Level and Subject	
Elementary School Level (N= 56)	
Grade Level	**Subject**
Grade 3	English/Language Arts (10)
	Mathematics (5)
	English/Language Arts/Mathematics (1)
	Montessori (1)
	Science (1)
	Technology (1)
Grade 4	English/Language Arts (8)
	Mathematics (8)
	Social Studies (1)
Grade 4-5 Combination	Mathematics (1)
Grade 5	English/Language Arts (5)
	Mathematics (9)
	Science (5)
	Technology (1)

The following analysis reports the percentage of use observed for each indicator for the six categories of teacher behaviors related to differentiation practices for gifted learners.

Category #1 Curriculum planning and delivery

At the item level of analysis within this category, the least observed items, defined as those seen in fewer than 20% of classrooms, included two items related to metacognitive behavior where teachers encouraged students to reflect on their learning or to engage in planning, monitoring or assessing their learning. The remaining three items in this category were observed in more than 90% of the classrooms, indicating the use of strategies to set high expectations for learning, using activities that developed content skills, and encouraged students to express their thoughts. This category was designed to elicit good general instructional practices as seen in the Common Core State Standards (CCSS) and other standard sets, not necessarily behaviors exclusive to gifted classrooms.

Category # 2 Materials and strategy utilization

Results analyzed from this new category, tailored for Arlington Public Schools (APS), found that program-relevant differentiated materials were being used in 54% of the classrooms observed. Cluster grouping or other forms of ability-based grouping was observed in 46% of elementary

classrooms. Models of thinking that promoted advanced content learning and conceptual understanding were used in only 14% of elementary classrooms. On the positive side, 79% of classrooms were using research-based instructional strategies that enhanced higher level thinking.

Category #3 Accommodations for individual differences

Results illustrated that the items in this category were the most used of any of the categories on the instrument. Provisions for independent or group learning were noted in 91% of classrooms observed. However, specific accommodations for individual learning differences were seen in only 75% of those classrooms. In 87% of classrooms observed, teachers used constructivist approaches to learning, allowing students to discover ideas through activities or questions. Yet in only 55% of classrooms did teachers encourage multiple interpretations of situations and events.

Category #4 Critical thinking strategies

In this category, evaluators would expect to see indicators of the use of some of these strategies in all classrooms where gifted students are being served. In 79% of classrooms, the skill of evaluation was in evidence as students were asked to judge situations, problems, or issues. The use of deductive reasoning was apparent in 50% of the classrooms. Yet only 46% of classrooms employed analysis of ideas, and only 28% encouraged the use of synthesis skills.

Category #5 Creative thinking strategies

In this category, evaluators would expect to see at least one of the four indicators in use in every classroom. Two indicators in this category appeared to be used frequently among the observed teachers. In 84% of the classrooms, teachers provided opportunities for students to develop and elaborate on their ideas. In 62% of classrooms, teachers deliberately solicited diverse thoughts from students about a topic, issue or idea. However, in only 29% of classrooms was open-mindedness and tolerance of imaginative thought encouraged. Finally, in only 18% of classrooms was there evidence of promoting diverse points of view to reframe ideas.

Category # 6 Analysis and inquiry strategies

This new category on the form was added to elicit evidence of gifted education best practice in an area found to be important to general best practice in Arlington schools. Evidence for the use of analysis of text, models, or other symbolic sources was found in 75% of classrooms observed. In 59% of classrooms, the use of an inquiry process was in evidence and the use of higher level questions was seen. In only 39% of classrooms was the drawing of inferences noted, while in only 29% of classrooms were activities observed that required students to build argument.

Overall findings on frequency of use of differentiated teaching behaviors at the elementary level

In respect to categories observed in elementary classrooms, more high use behaviors were observed within the category of curriculum planning and delivery than any other. By the same token, fewer items were observed within the category of critical thinking than any other. A pattern of high use of differentiated strategies was found for the following six indicators where their use was at the 80% level or higher: set high expectations for student learning, incorporated activities to promote learning, encouraged student expression, provided opportunities for independent and group learning, used constructivist techniques, and allowed students to elaborate on ideas. A clear pattern of lack of use of the following six differentiation strategies was noted at the elementary level: metacognition (2 item indicators), using a model of thinking to promote content understanding, encouraging open-ended habits of mind, encouraging summarization or synthesis within or across disciplines, and exploring diverse points of view to reframe ideas. These behaviors were seen in fewer than 20% of classrooms at the elementary level.

Middle school results by frequency

At the middle school level, 27 classrooms were observed, using the COS-R across all four core subject areas.

Table 2

Observations by Grade Level and Subject	
Middle School Level (N=27)	
Grade Level	**Subject**
Grade 6	Reading (4)
	English/Language Arts (2)
	Math 7 for 6th Graders (2)
	Science (1)
Grade 7	English (3)
	Algebra I Intensified(3)
	Life Science (1)
	Life Science (IBMYP) (1)
	World History (1)
Grade 8	English 8 (4)
	Geometry Intensified (2)
	World Geography (3)

The following analysis reports the percentage of use observed for each indicator for the six categories of teacher behaviors related to differentiation practices for gifted learners.

Category #1 Curriculum planning and delivery

Results illustrated that three of the items in this category were the most used of any of the categories on the instrument at the middle school level. Encouraging students to express their own thoughts was seen in 85% of classrooms. Two other items were observed in 96% and 100% of classrooms respectively. These items related to the use of strategies to develop content skills and to set high expectations for learning.

The least observed item, defined as an item seen in fewer than 20% of classrooms, "encouraged students to reflect on their learning", was observed in only 11% of classrooms. The related item on planning, monitoring, and assessing learning was observed in only 22% of classrooms. The overall category was designed to elicit good general instructional practices as seen in the CCSS standards and other standard sets, not necessarily behaviors exclusive to gifted classrooms.

Category # 2 Materials and strategy utilization

Results analyzed from this new category, tailored for APS, found that program-relevant differentiated materials were being used in only 30% of the middle school classrooms observed. Cluster grouping or other forms of ability-based grouping was observed in 56% of middle school classrooms. Models of thinking that promoted advanced content learning and conceptual understanding were used in only 7% of middle school classrooms. On the more positive side, 52% of classrooms were using research-based instructional strategies that enhanced higher level thinking.

Category #3 Accommodations for individual differences

Provisions for independent or group learning were noted in 89% of classrooms observed. However, specific accommodations for individual learning differences were seen in only 67% of those classrooms. In 74% of classrooms observed, teachers used constructivist approaches to learning, allowing students to discover ideas through activities or questions. Yet in only 37% of classrooms did teachers encourage multiple interpretations of situations and events.

Category #4 Critical thinking strategies

In this category, evaluators would expect to see indicators of the use of some of these strategies in all classrooms where gifted students are being served. In 63% of classrooms, the skill of evaluation was in evidence as students were asked to judge situations, problems, or issues. The use of deductive reasoning was apparent in 52% of the classrooms. Yet only 37% of classrooms employed analysis of ideas, and only 26% encouraged the use of synthesis skills.

Category #5 Creative thinking strategies

In this category, evaluators would expect to see at least one of the four indicators in use in every classroom. None of the indicators in this category appeared to be used frequently among the observed middle school teachers. In the highest rated item, 45% of the classroom teachers provided opportunities for students to develop and elaborate on their ideas. In 30% of classrooms, teachers deliberately solicited diverse thoughts from students about a topic, issue or idea. Moreover, in only 7% of classrooms was open-mindedness and tolerance of imaginative thought encouraged. Finally, in only 22% of classrooms was there evidence of promoting diverse points of view to reframe ideas.

Category # 6 Analysis and inquiry strategies

This new category on the form was added to elicit evidence of gifted education best practice in an area found to be important to general best practice in Arlington schools. Evidence for the use of analysis of text, models, or other symbolic sources was found in 70% of middle classrooms observed. In 63% of classrooms, the use of an inquiry process was in evidence yet the use of higher level questions was seen in only 41% of classrooms. In 37% of classrooms, the drawing of inferences was noted, while in only 33% of classrooms were activities observed that required students to build argument.

Overall findings on frequency of use of differentiated teaching behaviors at the middle school level

In respect to categories observed in middle school classrooms, more high use behaviors were observed within the category of curriculum planning and delivery than any other. By the same token, fewer items were observed within the category of creative thinking than any other. A pattern of high use of differentiated strategies was found for the following four indicators where their use was at the 80% level or higher: set high expectations for student learning, incorporated activities to promote learning, encouraged student expression, and provided opportunities for independent and group learning. A clear pattern of lack of use of the following three differentiation strategies was noted at the middle school level: metacognition as interpreted as reflection, using a model of thinking to promote content understanding, and encouraging open-ended habits of mind. These behaviors were seen in fewer than 20% of classrooms at the middle school level.

High school results by frequency

At the high school level, 24 classrooms were observed, using the COS-R across all four core subject areas.

Table 3

Observations by Grade Level and Subject	
High School Level (N=24)	
Grade Level	**Subject**
Grade 9	English Intensified (1)
	Geometry Intensified (1)
	Biology Intensified (2)
	World History Intensified (2)
Grade 10	English Intensified (2)
	Algebra II/ Trig Intensified (2)
	Chemistry Intensified (2)
	VA/Us Government AP (1)
Grade 11	English (IB) (1)
	English AP Language (1)
	Pre-Calculus (IB) (1)
	Pre-Calculus (AP) (1)
	CAS (IB) (1)
Grade 12	English AP Literature (3)
	Calculus AP (AB) (2)
	Calculus AP (BC) (1)

The following analysis reports the percentage of use observed for each indicator for the six categories of teacher behaviors related to differentiation practices for gifted learners.

Category #1 Curriculum planning and delivery

Results illustrated that three of the items in this category were the most used of any of the categories on the instrument at the high school level. Encouraging students to express their own thoughts was seen in 96% of the high school classrooms observed. Two other items were observed in 92% and 96% of classrooms respectively. These items related to the use of strategies to develop content skills and to set high expectations for learning.

Less frequently observed behaviors were those that encouraged students to reflect on their learning, observed in only 21% of classrooms and the related item on planning, monitoring, and assessing learning, observed in only 29% of classrooms. The overall category was designed to elicit good general instructional practices as seen in the CCSS standards and other standard sets, not necessarily behaviors exclusive to gifted classrooms.

Category # 2 Materials and strategy utilization

Results analyzed from this new category, tailored for APS, found that program-relevant differentiated materials were being used in 79% of the high school classrooms observed. Either cluster grouping or other forms of ability-based grouping was observed in 71% of high school classrooms. Many of these classrooms were using AP or IB-relevant materials in an advanced classroom where gifted students predominated. It appeared that 67% of classrooms were using research-based instructional strategies that enhanced higher level thinking. However, models of thinking that promoted advanced content learning and conceptual understanding were being used in only 12% of high school classrooms.

Category #3 Accommodations for individual differences

Provisions for independent or group learning were noted in 83% of classrooms observed. However, specific accommodations for individual learning differences were seen in only 42% of those classrooms. In 100% of classrooms observed, teachers used constructivist approaches to learning, allowing students to discover ideas through activities or questions. Yet in only 50% of classrooms did teachers encourage multiple interpretations of situations and events.

Category #4 Critical thinking strategies

In this category, evaluators would expect to see indicators of the use of some of these strategies in all classrooms where gifted students are being served. In 92% of high school classrooms, the skill of evaluation was in evidence as students were asked to judge situations, problems, or issues. The use of deductive reasoning was apparent in 67% of the classrooms. Yet only 46% of classrooms employed analysis of ideas; the same percentage encouraged the use of synthesis skills.

Category #5 Creative thinking strategies

In this category, evaluators would expect to see at least one of the four indicators in use in every classroom. Only one of the indicators in this category appeared to be used frequently among the observed high school teachers. In the highest rated item, 62% of the observed high school teachers provided opportunities for students to develop and elaborate on their ideas. In only 46% of classrooms did teachers deliberately solicit diverse thoughts from students about a topic, issue or idea. Moreover, in only 25% of classrooms was open-mindedness and tolerance of imaginative thought encouraged. Finally, in only 8% of classrooms was there evidence of promoting diverse points of view to reframe ideas.

Category # 6 Analysis and inquiry strategies

This new category on the form was added to elicit evidence of gifted education best practice in an area found to be important to general best practice in Arlington schools. The high school classrooms observed showed that a majority of these behaviors were in use. Evidence for the use of analysis of text, models, or other symbolic sources was found in 87% of high school classrooms observed. In 79% of classrooms, the use of an inquiry process was in evidence; the use of higher level questions was seen in 58% of these classrooms. In 71% of classrooms, the drawing of inferences was noted; in 58% of classrooms, activities were observed that required students to build argument.

Overall findings by frequency of use of differentiated teaching behaviors at the high school level

In respect to categories observed in high school classrooms, more high use behaviors were observed within the category of curriculum planning and delivery than any other. By the same token, fewer items were observed within the category of creative thinking than any other. A pattern of high use of differentiated strategies was found for the following five indicators where their use was at the 80% level or higher: set high expectations for student learning, incorporated activities to promote learning, encouraged student expression, allowed students to discover ideas, and encouraged students to evaluate situations and events. A clear pattern of lack of use of the following two differentiation strategies was noted at the high school level: using a model of thinking to promote content understanding, and engaging students in the exploration of diverse points of view. These behaviors were seen in fewer than 20% of classrooms at the high school level.

Overall commentary on frequency of use of differentiated teaching behaviors

After analyzing the results for frequency of use of core differentiation strategies at all levels of schooling, it is apparent that some strategies are consistently utilized while others are not. Across all grade levels, the strategies used most frequently are those associated with good teaching such as setting high expectations and providing activities for students to apply new knowledge. Also used quite frequently are strategies that accommodate independent and group work, and that allow students to express ideas in some context. Strategies used very infrequently in this study were those that promoted metacognition, either through planning, monitoring and assessing learning or through deliberate reflection. Others in infrequent use were systematic employment of higher level thinking. While "encouraging evaluation of situations…" was used frequently at two levels, the use of analysis and synthesis activities was much less common at any level. Also used infrequently were several creative thinking strategies and an emphasis on encouraging diverse points of view. Thus a pattern of high use and low use of specific strategies may be seen in the data. (See Chart A below)

Chart A
Frequency of Use of Differentiated Teaching Behaviors

Frequency of Use of Differentiated Teaching Behaviors (N=109)	
Frequently Observed Strategies	**Infrequently Observed Strategies**
Strategies that set high expectations for students	Strategies that promote planning, monitoring and assessing learning, or deliberate reflection
Activities for students to apply new knowledge	Strategies that support the systematic employment of higher level thinking skills
Strategies that accommodate independent and group work	Strategies that support creative thinking
Strategies that allow students to express ideas	Strategies that encourage diverse points of view
Strategies that encourage evaluation of situations	

B. Analysis of school level results by teacher effectiveness

Just as we glean important understandings from frequency ratings of teacher behaviors related to differentiation, we also learn much from effectiveness ratings. In each of the classrooms that used a given strategy, the teacher behavior was rated as effective (3), somewhat effective (2), or not effective (1). Since the spread from a 1 to a 3 rating is not broad, results for this part of the analysis are reported by highlighting the highest and lowest ratings across categories on the scale and within categories.

The mean scores for effectiveness on the six dimensions of the COS-R were computed within only those classrooms where the behavior was observed. Thus, in some classrooms, low numbers render the mean ratings less helpful for generalizing to the whole group. In general, one would expect ratings at 2.5 or higher on any behavior for it to be judged "effective". One would also hope to see the behavior utilized by at least half of the teachers observed. In the case of critical thinking and creative thinking, however, one would expect to see some aspects of these higher levels of thinking utilized by all teachers at all levels daily.

Elementary mean ratings for effectiveness

In the first category on Curriculum Planning and Delivery, mean scores ranged from 2.4-2.5 in all classrooms observed. However, two of these items on metacognition were only observed in 11 and 8 classrooms respectively. The mean scores derived suggested that teachers were performing between "somewhat effective" and "effective" on the indicated behaviors observed.

In the category of Materials and Strategy Utilization, the range of scores was from 2.3-2.7. The highest rated indicator was the one on grouping approaches employed. Twenty-six teachers were found to be using that behavior in the higher range toward effectiveness (2.7). The lowest rated item was the one on using models of thinking, employed by only 8 teachers who received a rating of 2.3, in the range of "somewhat effective".

In the category of Accommodations for Individual Differences, the mean scores ranged from 2.3-2.6. The highest rated item at 2.6 was for "providing independent or grouped activities for learning at deeper levels". However, the lowest rated behavior was 2.3 for accommodating for these differences, suggesting that grouping occurs within classes but is not necessarily effectively employed to benefit gifted learners.

In the category of Critical Thinking, the range was 2.1-2.5. The highest rating was in the item that encouraged students to evaluate, rated for 44 teachers. The lowest rating was for the use of deductive reasoning, applied by 28 teachers. The findings suggest that even when teachers were using critical thinking strategies, with the exception of evaluation, they were using them only "somewhat effectively" (as in the case of deductive reasoning rated at 2.1) or in very few numbers (20 and 10 respectively for analysis and synthesis).

In the category of Creative Thinking, the range was very narrow, between 2.2-2.3. Highest rated was the item related to exploring diverse points of view at 2.3 by 10 teachers, suggesting that creative thinking is underutilized as a strategy and less effectively implemented than desired.

In the last category of Analysis and Inquiry strategies, the score range was 2.3-2.7. Highest rated was the item on employing activities to build argument in some form at 2.7, although it was used by only 15 teachers. Close behind at 2.6 was "employing activities that required analysis of text and other forms", used by 42 teachers. Lowest rated was employing an inquiry process to stimulate high level learning at 2.3, employed by 33 teachers.

Sub-analysis by Title I and non-Title I schools

An analysis was run to show the results of observation data by Title I and non-Title I schools. At the elementary level, three Title I schools were visited. Each of these schools employed fulltime RTGs who worked to ensure that differentiation was a reality at the school site and in cluster classrooms. Findings suggested that these schools used as many differentiated strategies and were as effective in the use of these differentiated strategies as were non-Title I schools. Mean ratings for all six categories were comparable between the two types of elementary schools.

Sub-analysis by Grades 3, 4, and 5

In a sub-analysis by specific elementary grade levels, it became apparent that Grade 5 teachers used differentiation strategies more frequently and at a higher effectiveness level than Grades 3 or 4 teachers. Grade 3 teaching behaviors were also less effective than Grade 4 teaching behaviors. Because more Grade 4 classrooms were observed, less effectiveness in Grade 3 classrooms might be explained by the sample size, or it could merely reflect the level of teaching in the schools observed.

Overall analysis of effectiveness ratings at the elementary level

The findings from the elementary classrooms observed suggest that elementary teachers are using the following strategies most effectively: using appropriate grouping strategies, employing activities that require students to build argument, employing activities that require analysis of text and other forms, and providing opportunities for independent or group learning. Each of these indicators received a rating of 2.6 or 2.7. Of these strategies, however, less than half of the teachers observed (N=15) were employing the strategy of building argument. All other strategies were being employed by over half of the teachers observed, suggesting that both frequency and effectiveness of strategy use might be inferred. Title I schools were as effective as their counterparts in the use of selected differentiation strategies. Moreover, Grade 5 classrooms both demonstrated greater frequency of use of differentiated strategies and effectiveness than Grades 3 and 4.

Middle school mean ratings for effectiveness

In the first category on Curriculum Planning and Delivery, mean scores ranged from 1.7-2.5 in all classrooms observed. However, two of these items on metacognition were only observed in 3 and 6 classrooms respectively. The mean scores derived on these two items were 1.7 in the classrooms observed in respect to the use of reflection activities, and the highest rated item at 2.5. Other mean scores were recorded for most of the teachers at the middle school level, suggesting that teachers were performing between “somewhat effective” and “effective” on the indicated behaviors observed.

In the category of Materials and Strategy Utilization, the range of scores was from 2.3-2.8. The highest rated indicator was the one on using program-relevant materials (N=8), while the lowest rated was the effective use of grouping strategies appropriate for the gifted (N=3). About half of the teachers were “somewhat effective” at using evidenced-based instructional strategies and two were observed being likewise “somewhat effective” with using models of thinking.

In the category of Accommodations for Individual Differences, the mean scores ranged from 2.1-2.4. The highest rated item at 2.4 and used by the most teachers (N=24) in this category was "allowing for the development of key ideas independently". The middle rated behavior was 2.3, in the "somewhat effective" range, for two of the items although only 10 teachers practiced "encouraging multiple interpretations of events…", while 18 accommodated for individual and group differences with a 2.1 mean score, suggesting that even when grouping occurs within classes, it is not necessarily especially effectively employed for gifted learners.

In the category of Critical Thinking, the range was 2.0-2.3. The highest rating was in the item that encouraged students to synthesize information, rated for only 7 teachers while the lowest rating was for the use of analysis (ie. comparing and contrasting ideas), observed in 10 teachers' classrooms. The findings suggest that even when teachers were using critical thinking strategies, they were using them only "somewhat effectively". Moreover, fewer than half of the teachers were using any of the critical thinking strategies noted except for evaluation which was employed by more than 70% of teachers.

In the category of Creative Thinking, the range was between 2.4-3.0. Highest rated was the item related to exploring diverse points of view at 3.0 by 2 teachers, also the highest rating on the form for the middle school level. Overall results suggest that while creative thinking is underutilized as a strategy (ie. fewer than half of teachers were found to use the strategies except for the item on elaboration of ideas), it is effectively implemented when used, with the other items in the category being rated at 2.4 or 2.5.

In the last category of Analysis and Inquiry strategies, the score range was 2.4-2.5. Highest rated was the item on employing activities to draw inferences and represent them in some form at 2.5, used by 17 teachers. Close behind at 2.4 were all other items in this category, used by over half of the teachers observed.

Overall analysis of effectiveness ratings at the middle school level

The findings from the middle school classrooms observed suggest that middle school teachers are using the following strategies most effectively: showing evidence of using program-relevant differentiated materials for the gifted in the content domains and engaging students in the exploration of diverse points of view. Each of these indicators received a rating of 2.8 or 3.0 respectively. Of these strategies, however, only eight teachers were observed in using appropriate materials while only two were observed using diverse points of view. Most other strategies that were rated in the effectiveness range (2.5) tended to be underutilized by more than half the teachers.

High school mean ratings for effectiveness

In the first category on Curriculum Planning and Delivery, mean scores ranged from 2.4-2.6 in all classrooms observed. However, two of these items on metacognition were only observed in 7 and 5 classrooms respectively. The mean scores derived on these two items were 2.4 in the classrooms observed in respect to the use of reflection activities, and the highest rated item in this category at 2.6. Other mean scores recorded for most of the teachers at the high school level suggested that most of the teachers were performing between "somewhat effective" and "effective" on the indicated behaviors observed.

In the category of Materials and Strategy Utilization, the range of scores was from 2.3-2.6. The highest rated indicator was the one on using evidenced-based instructional strategies, practiced by 16 teachers during observation while the lowest rated was at 2.3 on using models of thinking. This behavior was observed in only three teachers' classrooms, however. The two items on the use of appropriate grouping and the use of program-relevant materials received an effectiveness rating of 2.5 and were employed by 17 and 19 teachers respectively, a clear majority.

In the category of Accommodations for Individual Differences, the mean scores ranged from 2.2-2.5. The highest rated item at 2.5 and used by many teachers (N=20) in this category was "providing for independent and group learning to promote depth of understanding". The middle rated behavior was 2.4, in the "somewhat effective" range, for two of the items, with 24 teachers practicing "allowing students to discover key ideas independently" and 12 teachers "encouraging multiple interpretations of events…". Accommodation for individual and group differences received a 2.2 mean score, suggesting that even when grouping occurs within classes, it is only "somewhat effectively" employed for gifted learners.

In the category of Critical Thinking, the range was 2.3-2.6. The highest rating was in the item that encouraged students to evaluate situations, used by most of the high school teachers observed (N=22). The lowest rating was for the use of synthesis of ideas, observed in only 11 teachers' classrooms. The findings suggest that even when teachers were using critical thinking strategies, they were using them only "somewhat effectively" except for the use of evaluation activities. Fewer than half of the high school teachers were observed using either analysis or synthesis.

In the category of Creative Thinking, the range was between 2.2-3.0. Highest rated was the item related to encouraging open-mindedness and tolerance for ideas in students at 3.0 by 2 teachers, also the highest rating on the form for the high school level. Overall results suggest that creative thinking is underutilized as a strategy (ie. fewer than half of the teachers were found to use the strategies except for the item on elaboration of ideas). Moreover, teachers were found to be

"somewhat effective" in the use of diverse ideas and diverse points of view while they were found "effective" in encouraging elaboration of ideas and open-mindedness as already noted.

In the last category of Analysis and Inquiry strategies, the score range was 2.1-2.4. Highest rated was the item on requiring students to build argument, practiced by nine teachers. Lowest rated was the item on employing activities to draw inferences and represent them in some form, used by 10 teachers. All other items were rated 2.2 or 2.3, indicating that they were implemented "somewhat effectively" in the majority of classrooms.

Overall analysis of effectiveness ratings at the high school level

The findings from high school classrooms observed suggest that high school teachers are using the following six strategies most effectively as judged by mean scores above 2.5:
1) incorporating activities that promote learning, 2) engaging students in planning, monitoring and assessing their learning, 3) employing evidence-based instructional strategies to enhance higher order thinking, 4) encouraging students to judge situations, problems, and ideas, 5) encouraging student open-mindedness, and 6) providing opportunities to develop and elaborate ideas. Each of these indicators received a rating of 2.6 or higher. Of these strategies, however, only two teachers were observed in promoting open-mindedness while only seven were observed using metacognitive tools (i.e. planning, monitoring, and assessing learning). All of the other strategies that were rated as effective were used by more than half of the teachers observed.

C. Analysis of effectiveness of teaching behaviors by core content areas

Results of the observations for 107 classrooms by elementary, middle, and high school levels in respect to effectiveness of content areas yielded interesting patterns at both the category level and the item level within categories. The data tend to suggest that different subject areas utilize different strategies more frequently and more effectively than others. The following commentary analyzes the content area differences by category and then by most frequently and effectively used strategies.

In the category of curriculum planning and delivery, highest level ratings (2.6) at the elementary level were in science where six teachers employed the items effectively in this category. In materials utilization and strategies, the highest rating was in math at 2.5. In respect to accommodation for individual differences, both math and science classrooms were rated the highest at 2.4 in this category. In the category of critical thinking, science ratings for six teachers was 2.5. The highest effectiveness rating for creative thinking was equally 2.2 for language arts and math. Analysis and inquiry strategies were highest rated for math and science at 2.4.

Middle school ratings favored mathematics as a content area that employed strategies across categories most effectively. For example, it was the highest rated content area for five out of the six categories in respect to effectiveness (2.4-2.7), although the number of teachers using the strategies was generally low, between 3 and 8. In materials utilization and strategies, three social studies classrooms were rated at 2.7, the highest effectiveness rating for that category. In accommodations for individual differences, language arts had the highest mean score of 2.3 in 12 teachers' classrooms.

In the high school effectiveness ratings, both math and science were rated the highest in four out of six categories each. Eight math teachers were rated 2.7 in curriculum planning and delivery, and five were rated 2.8 in creative thinking strategies. Four science teachers were rated 2.8 for critical thinking and 2.7 for accommodation to individual differences. Eight math and four science teachers received a rating of 2.7 for materials and strategy utilization and analysis and inquiry strategies.

Overall commentary on content area differences

Overall, the subject areas that had the highest effectiveness ratings were consistently math and science even though frequency rates were low at middle and high school levels. At the elementary level, frequency ratings in math were higher, with close to 50% of teachers using the highest rated strategies. Also of note was the fact that the highest effectiveness ratings across all levels were at the high school level in math and science classrooms.

Item analysis by content area

Each item within categories was analyzed for the most effective strategies used by Arlington teachers by content area. Highest rated items within each subject area are reported below.

English/Language Arts

Language arts classrooms at the elementary level used the following strategies effectively:

- encouraged students to express their thoughts (2.6),
- used appropriate grouping strategies (2.9),
- provided opportunities for independent and small group learning(2.6),
- encouraged student synthesis (3.0), and
- asked students to draw inferences (2.9).

These strategies, for the most part, were used by fewer than 20% of language arts teachers observed.

High effectiveness ratings for items at the middle school level in English/language arts were the following:

- providing opportunities for students to elaborate on ideas (2.7),
- employing activities to build argument (3.0),
- demonstrating open-mindedness (3.0), and
- employing models of thinking (3.0).

However, these strategies were used by 1-4 teachers only.

No items at the high school level exceeded 2.5 in the English/language arts content area.

Math

Math classrooms at the elementary level displayed the following effective behaviors:

- had students reflect on what they had learned (2.7),
- used appropriate grouping approaches (2.7),
- encouraged multiple interpretations of data (2.8),
- encouraged students to evaluate situations (2.6), and
- employed activities to build argument (2.7).

At the middle school level, the highest rated behaviors seen in math classrooms were the following:

- encouraging the use of activities to enhance thinking (2.6),
- encouraging the expression of ideas (2.6),
- providing opportunities to develop ideas (2.7),
- using appropriate grouping (2.8),
- encouraging multiple interpretations (3.0),
- encouraging evaluation (2.7), and
- one to three teachers were rated 3.0 for using synthesis, asking high level questions, and soliciting diverse thoughts and ideas.

The highest rated items at the high school level in math were the following:

- setting high expectations for learning (2.9),
- employing evidence-based strategies (2.9),
- opportunities for independent and group learning (2.8),
- using evaluation (2.8),
- using analysis (3.0),
- employing diverse ideas (3.0),

– encouraging diverse points of view (3.0),
– promoting open-mindedness (3.0),
– encouraging the development and elaboration of ideas (2.8), and
– using inquiry (2.8).

Most of these strategies, however, were observed in fewer than 10 classrooms.

Science

Science classrooms were less frequently observed than either English/language arts or math. Consequently, the frequencies noted are smaller for each item.

In science classrooms at the elementary level, the highest effectiveness ratings were for the following teacher behaviors:

– incorporating activities to promote learning (2.8) in six classrooms,
– using grouping appropriately in one classroom (3.0),
– independent and small group opportunities in six classrooms (2.8),
– evaluation activities in four classrooms (3.0), and
– drawing inferences in two classrooms (3.0).

At the middle school level, the highest rated item in science classrooms for effectiveness was the following:

– using program-relevant materials in one classroom.

No other items were rated higher than 2.5.

In high school science classrooms, the highest rated effectiveness items were the following:

– setting high expectations (2.8),
– incorporating activities to promote learning in four classrooms (2.8),
– using program-relevant materials in two classrooms (3.0),
– employing evidence-based strategies in four classrooms (2.8),
– providing independent and small group learning (2.8) in four classrooms,
– encouraging multiple interpretations in four classrooms (3.0),
– allowing students to discover ideas in four classrooms (2.8),
– evaluation and deductive reasoning in four classrooms, each rated 2.8,
– analysis in two classrooms (3.0),
– use of the inquiry process in three classrooms (2.7), and
– drawing inferences in three classrooms (2.7).

Social Studies

With one exception, social studies classrooms were not observed at the elementary level. The subject was usually not being taught during scheduled observation times.

At the middle school level, fewer social studies classes were observed than the other three core subjects, yielding fewer high ratings. The items that did rise to the level of being effective were the following:

– planning, monitoring, and assessing learning in one classroom (3.0), and
– using program-relevant materials in two classrooms (3.0).

At the high school level, items that reached the effectiveness level were the following:
– incorporating activities to promote learning in three classrooms (2.7),
– using relevant materials in one classroom (3.0),
– evaluation in three classrooms (2.7),
– encouraging diverse points of view in one classroom (3.0), and
– using inquiry and higher level questions, each in one classroom (3.0).

Overall commentary on items by subject area

Overall, math and science classrooms were the highest rated subjects for the use of differentiated behaviors within categories at all levels. They also had the highest number of behaviors at the highest level of effectiveness, especially at the high school level. In high school math classrooms, for example, all four items in creative thinking were rated at the effectiveness level. Math was the most consistently effective subject as analyzed by item, regardless of level. Too few social studies classrooms were observed to make inferences about their differentiation practices. English/language arts classrooms were unremarkable in respect to effectiveness ratings, having the lowest number of effectiveness ratings by item across categories.

Overall commentary on observational data by frequency and effectiveness across grade levels

The data collected across 107 classrooms at eight elementary, two middle, and two high schools suggest the following findings. Table I illustrates the mean ratings by category while Tables II-IV illustrate those ratings by school level. (See Appendix B for the tabular results.)

– Teachers of gifted students are under-utilizing higher level strategies that differentiate learning for these students at all levels, but most notably at the middle school level. While

slightly over half of the teachers are engaging in curriculum planning and delivery strategies and accommodations for individual differences, less than half are engaging in the other categories of behavior. This is especially troubling in the critical, creative, and inquiry strategies categories on the form.

- Teachers of gifted students are only "somewhat effective" in the higher level strategies they are implementing. Exceptions to this generalization are noted for each level in the item analysis section above. Lower mean scores were recorded for middle school teachers in all categories except creative thinking. Elementary and high school mean scores were comparable across all of the categories. The highest mean ratings were recorded for Curriculum Planning and Delivery at 2.5 for elementary teachers and Materials and Strategy Utilization for high school teachers at 2.5.

- Math and science teachers used more differentiated strategies and used them more effectively at all levels than did English/language arts or social studies teachers. This was especially true at the high school level when effectiveness mean scores ranged from 2.7-3.0 in science and from 2.8-3.0 in math.
- Instructional practice appears to be dominated by subject specialist decisions, especially evident in math, or program-based decisions in programs such as AP, IB and IB Middle Years Programme (IBMYP). These decisions on materials and instructional focus often do not consider what works with a subgroup of learners, in this case the gifted. Observers noted the materials used in each classroom and discussions with teachers in order to make this inference.

- The absence of appropriate attention to clustering or grouping gifted learners together within a classroom hampers the ability of teachers to differentiate instruction in several ways. In many classrooms whole group instruction dominated, with the use of one lesson plan for all learners, regardless of their designation as gifted. In cases where the lesson plan was derived from materials selected by content specialists, often the lessons were not high level enough for gifted learners. Math classrooms were an exception to this at all levels, with advanced opportunities in evidence in most of the math classrooms, regardless of level. Also some of the most inspired teaching was seen in both math and science classrooms.

Implications

Findings suggest that the pattern of instruction in classrooms where gifted students are served is not sufficiently broad in respect to the use of differentiation strategies nor deep in respect to effective utilization of them. It suggests the need to increase the frequency of use of many more of the strategies on the COS-R form with more teachers and to enhance the effectiveness of use of selected strategies. Results also suggest the need to consider the content areas in which strategies should be embedded and provide appropriate models of use.

Approaches to enhancing the use of differentiation strategies lies in the application, in equal measure, of 1) mandated and updated training of teachers that is focused on the strategies that are under-utilized, embedded in content applications of existing and newer materials, and 2) follow-up monitoring of strategy use at the school level by the person responsible for teacher evaluation. Moreover, it is suggested that the teacher evaluation form in cluster classrooms, intensives and AP and IB classrooms be cross-referenced to the COS-R so that appropriate behaviors for gifted learners are being assessed specifically. Clearly, these implications also call for the appropriate training of building administrators in the supervision of personnel who work with the gifted.

Section IV. Findings from focus groups of resource teachers of the gifted

The evaluator and one consultant met with two focus groups of Resource Teachers for the Gifted (RTG), one at the elementary level and one at the secondary level. The elementary group numbered 13; the secondary group was six, including two middle school representatives, one middle/high school representative, and three high school representatives. The sessions lasted for one and a half hours. A focus group protocol was employed for each meeting, consisting of seven questions, asked first for individual response on cards, followed by discussion of the questions in the group. Chart paper was used to track the discussion. Appendix C includes the focus group questions and RTG responses.

A content analysis of each question response was conducted of both individual and group responses. Major themes were derived from the data with quotations included for elucidation of the ideas. The findings from these focus groups follow.

Elementary focus group

The elementary group responded to the question of their role as resource teacher for the gifted in both qualitative and quantitative terms. In general, the majority of the RTGs spend more than half their time, some up to 90%, working directly with students in doing whole class instruction, pull-out and some push-in work with small cluster groups. Around 20% of RTG time was spent with teachers, engaging in co-teaching, planning differentiated lessons, and providing professional development. Several teachers described it as a lonely role because they are the only person in the building working on gifted education. All of the gifted specialists noted that 10-20% of their time was associated with administrative aspects of the job, including identification and attending meetings.

In regard to the question related to the perception of the identification process, the elementary RTGs noted that it was seen as an improvement over the prior system in that it was intended to find more underrepresented students. Many felt, however, that it had not produced the numbers expected. Many felt that it should be streamlined, simplified, and used consistently across schools. Since the system is still quite reliant on teacher recommendations, there was a perception that teachers needed more training in the process. The use of both the CogAT and the Naglieri tests was perceived as helpful to the process.

In respect to the use of differentiated materials and strategies, the RTGs felt that usage varied considerably by individual classroom teacher. Some teachers did use them consistently while others did not. Some classroom teachers feel they are too difficult for their students and thus do not try them. Others will use them when the RTG applies them in lessons but not follow-through when the RTG is not in the room. Independent use appears to be limited and somewhat

unknown by the RTG as "teachers close their doors and do what they want." A few RTGs seemed clear about what was being used, seeing language arts materials in use, M^3 gaining traction in math, and use of inquiry and concept-based instruction in social studies. Very limited use of whole units was apparent, however, especially in science. A few RTGs noted that current county models such as the Teachers' College Writing Program inhibit the use of gifted models. They also commented that there is no accountability for the use of differentiation for the gifted in classrooms nor administrative support for it.

In regard to the question on the use of cluster grouping, the RTGs seemed split in their perception of its use. About half of the group felt it was in use to some extent, especially in reading. Math grouping within a class was less evident at the elementary level; however, some cross-class grouping was in place and regarded as effective. The other half of the RTG group voiced concerns that cluster grouping was not in practice in their schools, although both teachers and administrators were aware of it as an intervention. All felt that cluster grouping could be a catalyst for positive change in the learning of all students, and some shared their positive experiences with its use in their schools.

In respect to the preparation of cluster teachers to work with the gifted, the RTGs again were split in their perceptions. Some felt that some of their teachers were prepared but not all. Others felt that none of the cluster teachers were prepared for the task. Concerns about cluster teacher selection, attitude, and willingness to engage in differentiation practices were also raised. Even where the teachers have learned the higher level thinking skills, they are not applying them in classroom practice, according to some of the RTGs. Variation appears to be great in both preparation and use of the needed differentiation skills by cluster teachers.

On the question of program improvement, the RTGs noted several areas of concern in the program. Leading the list were concerns about identification, especially as it impacted underrepresented groups, especially LEP learners. Close behind, however, was the problem with cluster grouping-both in regard to teacher preparation and support for the practice as well as accountability for implementation. Many RTGs also yearned for greater administrative support and accountability for gifted services in the building. Increased staffing was also seen as a concern, ensuring that larger schools receive commensurate staffing. A few RTG's noted the need for greater guidance in the overall curriculum process, suggesting a separate curriculum map for gifted services. A few also noted the need for consistency in implementation and the need to introduce a Young Scholars Model at all Title I schools in the near future to spur efforts with underrepresented groups. The Young Scholars Model is currently beginning to be implemented in APS as of the 2015-16 school year.

Finally, on the perception of benefits of the program for gifted students, the RTGs noted the importance of peer support, that these students had a critical mass of students to whom they

could relate and with whom they could learn. Close behind was the opportunity to learn through differentiated instruction appropriate to their needs. A few of the RTGs listed the role of advocacy of the RTG as a major benefit, noting that it provided students emotional support. Lastly, a few teachers mentioned the importance of access to research-based materials as an asset for students in the program.

Secondary focus group

The secondary focus group responded to the question about their role as resource teachers in distinctive ways from the elementary group. None of the secondary group worked directly with gifted students even half of their time. One RTG spent more than 50% of her time in a direct advisory role with students. In most other instances, the role was perceived to be collaborative, facilitating student opportunities 40% of the time in a variety of ways and being an instructional coach, spending up to 30% of time on tasks that involved teacher support, professional development, and work on differentiated lesson planning. Admittedly, the role was perceived to be unevenly divided between departments and teachers who were interested versus those who were not. Many felt the role was undervalued in the school, and that competing program priorities took precedence over gifted education.

In respect to identification, all agreed that there was a lack of clarity in respect to how placement decisions were made, once students were identified. None of the RTGs had a strong enough working relationship with the counseling department in their school to articulate what the process used was from year to year. The RTG's were not united in their perceptions about the impact of the new identification process, some seeing it as a better process and others concerned about its unintended effects. Most of the specialists found the new identification process cumbersome but noble in its attempt to identify more underrepresented students. Most felt it could be streamlined in ways that would produce more positive results. Presently, some argued it was having the opposite effect in who was being identified. The new process was also seen by some as a step up in the use of technology and as a tool for working more effectively with groups such as minority achievement, special education, and other interest-based groups.

In respect to the use of differentiated strategies and materials, most of the specialists noted that it varied by department and teacher, with few actually employing differentiated techniques. The AP program and the IB program were controlled by a tight syllabus and assessment system that prohibited the use of materials or strategies that did not promote the skills needed in particular courses. In intensive courses, there was a use of differentiated content-based materials in some of these courses, especially mathematics and chemistry. Other intensives lacked clarity in this regard. Some, like biology, did not differentiate the course syllabus through materials or strategies. Special materials were used as dictated by the school division, not by the gifted

program. The technology plan implementation seemed to have more primacy than other aspects of lesson planning.

In respect to cluster grouping, the middle school specialists responded by noting the extent to which the grouping model ran counter philosophically to the middle school model of heterogeneous grouping which was still seen as the model of choice in APS. Consequently, many gifted students were spread out across available sections of classes. Others were clustered to some extent within subject-based classes. Differentiation within those classes, however, was limited.

High school grouping tended to follow the program designation rather than the student identification one. Thus AP students made up various sections of AP classes rather than forming special classes for them. The same was true of the IB class structure. Within each of these programs, the nature of differentiation was controlled by the designated syllabus, not by the nature of the learner to be served.

In respect to issues of professional preparation of teachers, there was a sense that many teachers at the high school level were either not trained in gifted strategies or not employing them in the operationalization of their teaching. Often, teachers were trained in the AP and IB programs but not gifted education, allowing the 40 points required in gifted to be transferred from training for these programs. The RTGs worried that there was no control exerted to ensure that mandated teacher preparation for working with the gifted was in effect. Within class differentiation in these programs was non-existent except in mathematics where level of competency controlled subgrouping strategies employed. Teachers all had access to within school professional development opportunities; however, they were poorly subscribed.

On the question of program improvement, secondary specialists provided responses in the following order: teacher needs for differentiation use, identification, the number of RTGs assigned to the school, and communication to and among stakeholders. Several of them expressed concern about the lack of control they had over any aspect of program operation, having to insert themselves into an existing structure that took precedence in respect to the school's governance structure and shut down gifted innovations. Scheduling difficulties were cited as a concrete example of this problem.

Finally, in respect to program benefits for students, the secondary specialists all saw challenging curriculum both inside the school and outside the school and peer interaction as the strongest benefits. They also felt their role as student advocate was important, especially for the social, emotional, and advising aspects of student development.

Overall commentary across focus groups

The analysis of focus group data suggests that elementary and secondary Resource Teachers of the Gifted (RTG) perceive their roles somewhat differently, based on the unique organization of the gifted program at each school level and in some cases at each school. While elementary RTGs work to orchestrate all aspects of the gifted program in their buildings, including extensive time directly teaching students, secondary RTGs report more use of facilitation of groups of students and teachers and collaborative work with other program personnel as the nature of their role. These different perceptions of role also influence how each group tends to view the program elements of the gifted enterprise. However, they share common perceptions around certain aspects of the program. They all feel the need for greater resources, both human and material, in order to carry out their role effectively. All RTGs focused on the need for cluster teachers to have updated and continuous training in gifted education that is mandated to ensure some degree of standardization in the basic program operation. Moreover, all agree that cluster grouping or some alternate form of grouping is essential to their functioning as effective teachers of the gifted for instructional delivery and as the pathway for students to receive differentiated instruction daily. The RTGs also concur that the new identification system needs to be refined, standardized, and data collected on its effectiveness across the system in identifying underrepresented groups and providing a balanced system of equitable practices. Most of the RTGs across both levels voiced concerns about support for the gifted program in their buildings. Principals, other personnel not affiliated with the program, and even cluster teachers themselves were not totally supportive of all of the components of the gifted program model, especially cluster grouping. While training and better communication may be an antidote to some of these concerns, there also appears to be a philosophical battle being waged in relation to the use of systematic ability-based grouping practices and differentiation for one group of learners only. The RTGs appear to be calling for greater support centrally for their efforts as well as for clear policies and procedures to use at each building that will be accepted and implemented by the principals.

Implications

The implications of the RTG viewpoints expressed in focus group sessions correspond to the results seen in the observation data on some key points. Namely, both data sources suggest that professional development is needed for both cluster teachers and building administrators on the effective use of differentiated teaching behaviors. Both the data on classroom observations and the perspectives of RTGs also concur on the importance of enforcing the policy on grouping and developing a policy on differentiation practices deemed essential to program implementation. Finally, both data sources converge on the areas that need attention in instructional practice, especially in the use of differentiated materials, the use of strategies learned in professional development sessions, and the consistent use of cluster grouping. The focus group data, however, also suggest 1) the need for hiring additional RTGs in buildings with large populations

of identified gifted learners and 2) the need for retooling the identification system. These two areas were not addressed directly in the observations but emerged through the observation process.

Section V. Findings from an analysis of AP and IB results for 2015

One of the indicators of the long-term student benefits of a gifted program is the participation and performance of gifted students in the hallmark high school programs of Advanced Placement (AP) and the International Baccalaureate Diploma Programme (IB). Each program offers coursework that is calibrated to an advanced course of study, comparable to the first year of college study. Each program offers a rigorous syllabus and a standardized exam that allows students to receive placement or credit for their work in high school.

Participation in AP and IB courses

The following data on Advanced Placement and International Baccalaureate demographics are reported for only the two high schools visited as a part of this study. County-wide results will be analyzed in another part of the report.

Data in two high schools in Arlington show that 1110 gifted students took an AP class in 2015 whereas 95 students were enrolled in IB coursework at Washington and Lee, the one school site that offers the program. At the two high schools visited (ie. Yorktown and Washington and Lee), the average number of AP and IB courses taken by 11th and 12th grade gifted students enrolled ranged fr 3.3-4.6, suggesting that gifted students are taking a high number of advanced courses at these grade levels. These data also suggest that participation of gifted students in these advanced programs is high as expected at grades 11 and 12. Participation rates for 11th grade gifted students was 93-98% and for 12th grade gifted students, 95-99%. Moreover, 86% of gifted students at each of these schools took an AP course at grade 10.

Five-year analysis

In examining participation rates in AP over the past five years for gifted students, data indicate comparably high rates of participation each year for Grades 11 and 12, ranging from 92-98%. Grade 10 participation rates were also high at 86 and 85% respectively at the two school sites. Grade 9 rates appeared to be around 20% for each school per year.

Performance outcomes for AP and IB coursework

By the same token, the performance of gifted students in these programs is outstanding as noted by the pass rate for gifted students in the division. Within the highest subscribed AP courses for 2015, gifted students exceeded national standards for percentage of pass rate, sometimes by as much as 20 percentage points, in all courses. (See Chart B for the 13 courses selected for comparison.)

Five-year analysis

In examining performance in AP courses selected for comparison across five years, again the stability of performance is strong, with several of the courses staying within a few percentage points such as English Language where gifted students' pass rate was 83-84% across all five years. In some courses, scores have increased significantly such as Biology, up from 76% in 2013 to 93% the last two years and US History up from 58.7% to 81%. Other courses have shown a slight dip in scores over the past two years such as Calculus AB from 90% to 87%.

Chart B
College Board Advanced Placement Results
Report to the Nation - 2015 Results

Subject	National Results		W&L Results Gifted Students		Yorktown Results Gifted Students	
	# Scoring 3,4,5	% Scoring 3,4,5	# Scoring 3,4,5	% Scoring 3,4,5	# Scoring 3,4,5	% Scoring 3,4,5
Biology	143,771	64.3%	14	86%	13	100%
Calculus AB	173,711	57.4%	54	61%	49	67%
Calculus BC	94,605	79.0%	36	93%	36	97%
Chemistry	81,611	53.4%	16	94%	20	75%
English Language	292,745	55.5%	71	87%	67	76%
English Literature	225,368	56.2%	70	76%	102	82%
Physics 1	67,136	39.2%	32	59%	16	69%
Psychology	183,410	66.2%	63	86%	45	96%
Spanish Language	130,182	90.1%	18	100%	26	100%
Statistics	112,962	57.8%	30	80%	18	78%
US Government and Politics	135,016	48.0%	163	67%	84	75%
United States History	240,408	51.2%	107	74%	50	82%
World History	138,316	52.1%	40	100%	60	95%

In the IB diploma program, more than 90% of the identified gifted students passed all but six of the IB courses at a level of 4 or more, providing advanced placement or credit to accrue for college. Significant differences prevailed in student performance, favoring students who were identified as gifted in all courses.

Overall commentary on gifted student results on AP and IB

Participation and performance data on both Advanced Placement exams and International Baccalaureate exams suggest that Arlington gifted students are experiencing great success in

both programs. The data also suggest that other students are performing well in the programs too, despite lower numbers of students reaching the pass rates needed to receive credit or placement at a higher education institution.

In light of the portrait of instruction from Grades 3-12 painted through the observation data, it is difficult to reconcile this positive picture of student outcomes. However, it is true that the best instruction we saw at the high school level was in AP and IB classes. Moreover, high school teaching, in general, was superior to teaching at the other levels. The data also match up on the use and effectiveness of differentiation skills addressed in high school classrooms being those that are most useful in negotiating AP and IB exam material. These skills were: 1) incorporating activities that promote learning, 2) engaging students in planning, monitoring and assessing their learning, 3) employing evidence-based instructional strategies to enhance higher order thinking, 4) encouraging students to judge situations, problems, and ideas, 5) encouraging student open-mindedness, and 6) providing opportunities to develop and elaborate ideas. It would be interesting to map these skills on those used to train AP and IB teachers in the specific content areas for consonance.

In any event, the culmination of the secondary school experience for gifted students in Arlington appears to be very positive in respect to assessment of outcomes on multiple measures including coursework, SAT exams, and national ratings.

Implications

The implications of these results would suggest continuing the effort to build strong opportunities for diverse learners through advanced coursework at all levels of the learning enterprise. It especially speaks to the importance of making the middle school experience more rigorous so that more students might participate in high school intensives that prepare them for AP and IB. This situation is especially acute for diverse learners who are neither engaging in participation nor performance success with these hallmark programs to the extent desired at the high school level. The push at each high school to have every student take at least one AP class is a worthy goal and appears to be close to realization. Now the bar should be raised to enhancing performance through earlier rigorous coursework that mirrors the expectation of AP and IB classes.

The issue for gifted learners lies in having more opportunities earlier that might provide greater scheduling flexibility in course-taking by high school, more challenging courses of study at elementary and middle school levels, and more academic counseling that is responsive to individual needs.

Given that the majority of options that gifted students are participating in by sophomore year are all accelerated by one year in a content domain, it would follow that more acceleration of content

might be used earlier in subjects other than mathematics, beginning with the elementary programs. While the differentiated materials that Arlington is using have an accelerative component, unless they are used more completely, the benefits of such advanced learning are lost. There is also a great need to consider offering intensive (honors) classes in the three core subject areas not already offering intensive classes (ie. language arts, science, and social studies) at middle school level to prepare students more rigorously for participation in both AP and IB.

Section VI. Meetings held

Planning Meeting

In December 2015, the evaluator met with Cheryl McCullough and. Regina Van Horne to plan the evaluation proposal and discuss relevant issues regarding the sample, the instrumentation, and the timeline for the study. In January, the proposal was developed and initial aspects of the evaluation conducted. In February, the contract was finalized.

Advisory Meeting

A meeting was held with the Gifted Services Advisory Committee (GSAC) at 6:30 on March 16, 2016, the last day of observations in the school division. In attendance were two of the three evaluation consultants, Regina Van Horne from the Office of Planning and Evaluation, and five of the 15 advisory council members. The purpose of the meeting was to inform the parent advisory group about the evaluation. The agenda for the meeting was to provide an overview of the APS Evaluation Project, including the credentials of the evaluators, the scope of the study, the nature of instrumentation employed, the criteria for the schools visited, and the overall research questions and timeline for completion. The lead evaluator shared this information in a PowerPoint presentation and then asked for questions. The group had few questions but did want to know: 1) When they would have access to the report? 2) What types of recommendations would be made? and 3) What outcomes could be expected from the evaluation? The group held an interesting discussion of how to assess gifted student learning. Ms. Van Horne assured the group that they would have access to the evaluation report when it was made available to the school division at the end of May 2017.

Section VII. Findings from the analysis of APS practices and NAGC best practices

The National Association for Gifted Children (NAGC) established a set of program standards for use by local school districts in upgrading their programs in 1998. These standards were revised in 2010 to align with new teacher education standards for gifted education. They are divided into six categories related to planning, implementation, and maintenance of program development indicators. The six categories are the following: learning and development, curriculum planning, assessment, learning environments, programming, and professional development. A simple yes/no framework was used to determine the status of key indicators within each area assessed.

If the indicator was seen in only one aspect of the program or only at one level, the evaluator did not check the item as a "yes", rather judging the indicator to be "uneven". Some items were under development in the division and thus marked as "developing". Some items appeared to be inapplicable to the program so those items were noted as "not observed". A meeting was held on Tuesday, May 18 to assess APS gifted services on the NAGC Standards for administering a local program for gifted students. The meeting included Joyce VanTassel-Baska, the lead evaluator, Cheryl McCullough, administrator of the program, Regina Van Horne assistant director of Evaluation, and Robyn Ristau, also from the Office of Planning and Evaluation. Each indicator for each standard was discussed and rated, based on the supervisor's knowledge of the program and the evaluator's knowledge of it through access to the data sources of materials, observations, and focus group discussions with RTG's.

Findings on National Standards in Gifted Education

In the area of learning and development (Standard 1), the division received 5 yeses and 2 nos. The areas of deficiency centered around the lack of a counseling program that addressed psycho-social needs, academic planning needs, and career education needs. Moreover, items relating to underachievers and the use of individual data to design programs and work with families on recommendations for their child did not appear to be regularly at work in the school programs. Two items were marked uneven and 3 developing. Identity development and grouping practices were seen as uneven by grade level, with limited support noted at middle school level for either practice. Work with underachieving gifted students (2 items) is developing.

In the area of assessment (Standard 2), the processes used in local identification do not meet all of the national standards due to the lack of focus on providing for individual differences of gifted students through the careful analysis of profile data. In the aspect of the standard that deals with student assessment of learning, there is a lack of collecting pre-assessment data systematically and using them for curriculum and program planning and an absence of learning outcome data being collected and reported. The SOL test results are only gross indicators of these students'

performance and should be used cautiously in rendering judgments about individual learner capabilities or program efficacy. A focus on annual evaluation (3 items) is being currently addressed and will become part of the local plan in revision. In the past, evaluations have been routinely conducted by APS on a 7-year cycle. There is unevenness by grade level in parent communication, with the middle school least involved while some discrepancies also exist at other levels. Ratings for this indicator yielded 8 yeses and 7 nos, with 5 rated as developing and 2 as uneven.

In the area of curriculum planning (Standard 3), the division received 4 yeses and 5 nos while 9 areas were noted as uneven and 2 developing. Positive responses were given for the use of diverse learning experiences, the use of some research-based materials (dependent on level and teacher) and some differentiated strategies. Many of the bedrock strategies for use with the gifted, such as critical thinking, creative thinking, problem-solving, inquiry, and culturally responsive approaches (2 items), however, were uneven in application, depending on the teacher. This same situation applied to materials use as well, with uneven practices evident. There was also a preference for implementing parts of units or programs rather than the whole unit or program. The lack of a systematized guidance component makes the uniform application of addressing social and emotional needs and career guidance somewhat haphazard at all levels. By the same token, an emphasis on comprehensive talent trajectories for students K-12 is missing. In development for use as prototypes are elementary differentiation reports for parents, sent home four times a year as documentation of student performance in appropriate curriculum.

In the area of learning environments (Standard 4), the division received 4 yeses and 0 nos, with 2 items rated as uneven, 5 developing and 6 as not observed. The program is strong in setting high expectations for learning, but less effective in teaching specific affective strategies that would help students with psycho-social growth. The lack of clustering at the middle school, in particular, resulted in less interaction with intellectual peers than is desirable for the gifted. An emphasis on leadership skills was mostly absent except for the high school IB and Mentorship PRIME. Lack of counseling and guidance services led to negative responses on a few items in this category. As with many programs, the use of appropriate technology is developing well and continuously. The program is linked to the APS cultural competence initiative and is working on implementation of several of its strategies.

In the area of programming (Standard 5), APS received 2 yeses and 2 nos with 3 items rated as uneven, 5 as developing, and 1 not observed. The division received credit for offering policies and programming to qualified gifted students and for serving students as part of the regular school day. Grouping practices were uneven or nonexistent at the middle school level and some elementary schools, depending on the school and the level of the learner. Use of technology and communication skill development also received an affirmative response. There is some evidence that resources and materials are being provided to teachers upon formal request. The areas of

deficiency in this standard appear to be in the lack of a formalized and consistently implemented program structure K-12 that acknowledges the needs of these students at each stage of development, the lack of a counseling system, and the lack of individualized options. Moreover, it is questionable whether sufficient resources are available to implement the program effectively, given the case load in each building for RTGs that exceeds the special education allocation by a factor of 10. On the positive side, some parental involvement is noted through a parent night, held annually at the elementary level, and other forms of communication provided by some RTGs. The RTGs also collaborate regularly with building-based representatives of the Arlington Tiered System of Support (ATSS) and Title I as does the program supervisor at the division level. Most academic planning and counseling on college and careers is handled through the division's counselors. Policies and procedures related to program operation may be found on Google docs, available to all within the APS system.

In the area of professional development (Standard 6), the division received 6 yeses and 2 nos. Two items were marked as uneven and two were marked as developing. The area of greatest deficiency rests with the lack of qualification of some of the personnel (ie. cluster teachers and middle school staff) in regard to formal preparation in gifted education and prior experience in working with gifted students. Some of the teachers assigned to work with the gifted fail to have coursework or deep experience in working with these learners, hampering their effectiveness to differentiate and to relate appropriately to these learners. Moreover, there was no evidence that teachers had designed their own professional development plans, based on assessments of their performance, or engaged in ongoing professional development activities that systematically upgraded their skills, especially in the area of social emotional needs of gifted learners. The 40-hour requirement for professional development is insufficient to sustain high quality instruction across years. High school teachers have been allowed to substitute the program-specific training in AP or IB for those credits, rendering them less knowledgeable about the nature and needs of gifted students in their classrooms who often constitute the majority of their students.

Overall, the Arlington School Division received a total of 29 yeses. 22 developing, and 21 uneven responses out of a total of 97 indicators in respect to the standards. (See Chart C below) This is a comparatively above average score; areas in need of attention are diverse, appearing in all six standards: identification, assessment of student learning, the need for a systematic approach to guidance and counseling, more individual opportunities for learning based on need, professional development, and better alignment and articulation of advanced curriculum at all levels of the learning enterprise.

Chart C
Total Numbers by Standard and Indicator
Standards Met (Yes), Uneven, Not Met (No), Developing, Not Observed

Standard	Yes	Uneven	No	Developing	Not Observed
Standard 1	**5**	**3**	**2**	**3**	**0**
Standard 2	**8**	**2**	**7**	**5**	**0**
Standard 3	**4**	**9**	**5**	**2**	**0**
Standard 4	**4**	**2**	**0**	**5**	**6**
Standard 5	**2**	**3**	**2**	**5**	**1**
Standard 6	**6**	**2**	**2**	**2**	**0**
TOTAL	**29**	**21**	**18**	**22**	**7**

The complete list of NAGC Standards with the standard indicators marked by category for APS may be found in Appendix D.

Implications

The findings from the exercise to analyze and rate the program against national best practice standards for gifted education suggest that the program has major areas of strength as well as areas for improvement. The major aspects of program development found deficient require a more discrete focus and supervision to effect positive change.

The new identification system meets the national standard for working on finding underrepresented groups. Many new facets of identification in fact have improved the equitability of the program, yet data from the identification of cultural groups across the two years of its implementation suggest that it has been less effective in finding underrepresented groups than it was before. Without going deeper into the data, it is not possible to attribute that result directly to the new instruments or to the procedures employed in selection. However, it is important to evaluate the identification process next year for its effectiveness and the predictive validity of the new instrumentation.

Assessment of learning outcomes of gifted students needs attention earlier than high school results from AP and IB. These learners and their parents have a right to know the genuine progress these students are making in both areas of strength and relative weakness. Differentiated plans, begun to be used two years ago at the elementary level, provide an excellent way to report on such progress. However, the documentation disseminated through these reports needs to be standardized as well through product assessments and/or portfolios of work that document growth. This process cannot work where RTGs do not have access to working with advanced learners directly or in co-teaching contexts. Reporting of advanced performance

should routinely be reported at both middle and high school levels, perhaps using the elementary model as an exemplum.

In the areas of both curriculum and professional development, there is a lack of standardized practice as the NAGC best practices analysis suggests. Classroom observations also note the lack of consistent and effective use of best practice strategies. The need for mandated professional development that targets program materials and strategies is clear. If the desire is to improve instruction, then more attention to the importance of professional development and monitoring of curriculum implementation must occur. This also carries implications for the greater involvement of building principals with the program and the efficacy of cluster teachers whose performance is their responsibility.

In the area of programming, a clear delineation of the role of the counselor in gifted education is necessary. Very little evidence exists that gifted students are receiving differentiated counseling services in academic planning, college, or career planning at any level of schooling in Arlington. These services at middle school and beyond are important supplements to their academic program of study, providing important insights into affective, conative, and cognitive strengths and needs.

Finally, the analysis of best practices reveals a picture of uneven gifted services, based to some extent on grade level and on subject area. The elementary program worked best in those buildings where the RTG was working effectively with gifted students directly and impacting the level of instruction for all learners by modeling techniques and materials. At the middle school level, little evidence of effectiveness was found, based on the lack of differentiated services provided in areas other than mathematics. Even within clustered classrooms, little instruction was differentiated since subgrouping of gifted students for activities rarely occurred. At the high school level, more differentiation was evident but predominantly in whole class settings. Within subject areas, mathematics clearly was the most effective in grouping practices, consistency across grade levels, and delivery of differentiated content. Little differentiated activity was present in either social studies or science except at the high school level. The language arts program was uneven at each level of schooling. Even within some of the high school intensives, there was a lack of connection to the expectations of AP and IB program rigor.

Section VIII. Discussion, Commendations and Recommendations

The following discussion and recommendations are organized into categories, based on the findings reported in Sections III-VII. There is also an attempt in the discussion section to respond to the evaluation questions of interest. The commentary is based on triangulating data from division materials, classroom observations, focus groups, and national standards analysis.

Core elements of gifted program implementation

In regard to the extent to which best practice in gifted education dominates the instructional landscape in APS, the discussion which follows on grouping, on the use of differentiated materials, and on instruction provides a picture of instructional practices in classrooms where gifted students are being educated. These three elements influence the extent to which a gifted program is functional within a school system and therefore is benefiting the students for whom it has been designed.

Grouping

The curriculum and instructional goals for gifted learners still take a backseat to preferences in describing gifted programs by their grouping model designation rather than by their curricular focus. The program would benefit by not prescribing the grouping model but rather prescribing desired learning outcomes for gifted students, modeled on the national standards, allowing schools and RTGs to determine what combination of grouping and instruction would work best in their setting.

Cluster grouping has been rendered ineffective in many elementary schools through two processes that are counterproductive to differentiated learning for the gifted. Placing gifted learners with all teachers in a grade level just because there are at least five identified students defeats the instructional purpose of cluster grouping. Secondly, providing whole class instruction, regardless of the presence of the cluster group, and grouping students within the class in a random way to ensure that gifted students are "spread out" ensures that advanced instruction will not be provided for gifted learners. Thus there is no context for small group gifted instruction, only for whole class. The result of these practices, especially when they are combined, is that no differentiated learning for the gifted is occurring, even though the school purports to be cluster grouping. These data suggest adding procedures to ensure that 1) only trained cluster teachers can work with these students (1-2 per grade level) and 2) require using the cluster group intact for instructional episodes.

Grouping appears to be successful in elementary schools that implement it flexibly which may include small groups of gifted students in a special class in a core subject at the elementary level,

grouping gifted learners together for part of a lesson and not another, and routinely forming reading and math subgroups of gifted learners in the classroom for core lessons. There is great enthusiasm for cluster grouping throughout the schools where it is being implemented appropriately.

Differentiated materials

Use of differentiated materials is in evidence to some extent. However, many of the materials are being used in bits and pieces—a lesson here and there without consideration for what the whole unit or program is intending. In other cases, teachers prefer to use the easiest aspect of a material, such as the *SEM-R Bookmarks*, and then even modify that material for their own purposes. In the case of *Jacob's Ladder*, it was observed being taught to the whole class by a general classroom teacher who has received no training in the use of the materials, leading to a lackluster lesson. The use of gifted materials is more likely to be appropriately employed by teachers of the gifted, especially the M^3 material in math. Some RTGs report that cluster teachers do not use the materials, even after they have seen them modeled and have received training in them.

In general, however, there is a preponderance of the use of the basic text in a given subject area, with little use of supplementary resources that would make the class more differentiated for the gifted. More common in math is the use of extension activities from the basic text; in language arts, the use of off-level reading materials is encouraged but mediated by student interest and choice of text; in science and social studies, no plan for differentiation appeared to be emergent. The lack of options for gifted learners in science and social studies at the elementary and middle school level appears to be pronounced. This presents an issue for those students who are gifted in these subject areas not receiving services. Moreover, it precludes their preparation for advanced work at the high school level.

Materials need to be ordered for school sites that need them for use by teachers. Several schools indicated that they have sample sets available but not for use by multiple teachers. If the message is for cluster teachers to use materials in cluster classes, then the materials must be available in requisite numbers.

Differentiated instruction for the gifted

There is little evidence that models of thinking are being employed in the schools observed. In the absence of using materials that promote higher level thinking systematically nor in teaching a model for it, gifted students may not be advancing appropriately in their learning. While the inquiry process is being employed to some extent in classrooms through the use of open-ended questions or scenario-based problem-solving, more evidence exists for the use of basic level

comprehension questions, confined to a given task. Students are not systematically learning how to inquire except through the required AP research project in both language and literature at senior high school level. Both AP and IB programs appear to be effective for gifted students because there is a set syllabus and standardized assessment, both of which are high level and require critical thinking and problem solving. Other levels of classes are less successful with the gifted in the absence of advanced strategies and materials that guarantee they are working at advanced levels. Moreover, the use of less rigorous assessment protocols also hampers advanced learning.

The role of AP and IB at the high school has impacted the teaching and learning in the intensive English classes at Grades 9 and 10 in respect to the use of AP and IB terminology and practice writing samples. Little evidence of other types of differentiation was noted in those classrooms, however. In intensive math classes, there was strong use of problem-solving techniques that stressed the "how to approach" the problem rather than just the solution to it. In science, little differentiation was observed in biology but strong use of it was seen in chemistry. In world history, although the instruction did not tie directly to preparation for AP/IB courses, the use of inquiry and higher level processing was observed.

In some schools, the lack of service to third graders is noticeable. In many schools, the limited identification and service delivery to K-2 is also problematic but beyond the scope of this evaluation.

Service to underrepresented students

The division appears to be doing a reasonable job of tracking the identification of underrepresented populations including Hispanics, African Americans, and students from poverty who are noticeably underrepresented in the gifted program. The new identification system is using instrumentation recommended for use in finding these populations. However, results across three years of using the NNAT at Grade 2 do not show consistent promising results with all of these populations of interest. In the last school year, however, more Hispanics were found on the NNAT than in prior years. Currently, the division is refining the administration and reporting related to the use of those instruments. A set of PowerPoint modules has been developed to clarify the use of nomination tools and product samples. There do not appear to be mechanisms in place, however, that modify services for these students once they are identified. Nor is there a long-term monitoring system that tracks their progress across years in the program. The division also does not employ such a system of monitoring for other programs of interest either.

Support services

In order for gifted programs to function effectively within a school system, they must be organized to provide professional development and follow-up monitoring in classrooms. The evaluation seven years ago cited the division for its lack of linkage in the chain from teacher practices to professional development to monitoring in classrooms to see if the strategies and materials used in professional development sessions were being implemented. The comments that follow address the realities of these support mechanisms in the APS gifted program.

Professional development

Many classroom teachers appear to need professional development in how to use gifted materials in a differentiated way as well as how to plan for cluster groups of gifted learners in the classroom. This professional development may or may not best be modelled by the RTG in the classroom. The in situ professional development courses in advanced differentiation provide an easy service to classroom teachers; however, few teachers are taking advantage of the service. Moreover, the course offered should be more closely linked to the expectations for use of materials and strategies in the classroom. All RTGs, for example, should use a tool like the COS-R as a basis for identifying skills necessary to work effectively with the gifted.

The 40-point requirement is not sufficient to qualify teachers to work with specific materials nor with gifted learners in many cases. Moreover, the use of the AP or IB training to fulfill the 40-points is not appropriate, as the training does not address the needs of the gifted per se. In addition, the division lacks a system of renewal, based on a 3-5-year model consistent with the teacher license renewal cycle.

Providing targeted professional development is a complex issue with many needs apparent through the observations. The content specialists need to be involved in ensuring that higher level thinking is occurring in their discipline; thus part of professional development should be focused on the importance of content-embedded skills in each subject area that align with the requirements and standards of both AP and IB. A few of the RTGs appear to need further training as well in the materials and in models of higher level processing. They often cannot co-teach or offer assistance in the absence of appropriate resources and skill sets within various subject areas.

Monitoring

There appears to be very little evidence of oversight for the gifted programs in schools. The RTG is evaluated by the principal in the same way as other teachers are evaluated. The supervisor visits schools on a periodic basis to monitor the progress of the gifted program at each site. In

each school, the program is defined by what the RTG is able to generate or create, given both resource and philosophical limitations. In schools where the RTG and the principal are working closely together, the program is visible and viable. In schools where there are major philosophical differences regarding what the program should be, the program does not flourish nor do the students or the RTGs.

Program monitoring, based on both the COS-R and recent professional development experiences of cluster teachers, should be conducted annually by the principal or her assistant. Results of the observation should be shared with the supervisor of the program to ensure that the professional development and school-based monitoring of the program is connected. Moreover, the supervisor should be visiting each school at least once during the year to monitor the RTG in that building. Where monitoring produces negative results, a plan of action should be developed for that teacher and discussed with both the principal and the supervisor.

Personnel

In considering the APS gifted program, it is necessary to examine the personnel support that the program enjoys. Both at the school level and at central office level, the program seems to be understaffed.

Role of the supervisor

Currently, one supervisor has responsibility for the program K-12 with no teacher specialist with a background in gifted education. This is not in line with other subject or program areas in the system, causing overload and backup in the operation of the program. The supervisor works to hold monthly meetings with the RTGs as a way of keeping abreast of what is happening in the schools. She also does periodic visits to schools. She maintains a parent advisory group with whom she meets regularly. Her major work lies in implementing the policies and procedures of the gifted program across the system, including identification, implementation of program initiatives, collaboration with existing APS initiatives, monitoring, and evaluation.

Role of the resource teacher of the gifted (RTG)

Some elementary resource teachers of the gifted put more energy into trying to convert the whole school teaching staff to doing gifted education than they do to working with gifted students *directly* on targeted topics of study. Consequently, in those schools gifted students are not served well. Resource teachers who are most successful are those who are working directly with students for at least 70% of their time, co-teaching and collaborating with teachers for at least

20% of their time, and using the remaining 10% for administrative tasks like identification, meetings, and student recommendations. In these schools, the gifted program has a large footprint because the skill set of the RTG is put to good use on behalf of students.

Middle school resource teacher roles also need redefinition, as the absence of advanced work in core classes other than mathematics appears to be the norm. Thus what should a resource teacher be spending time on? There appears to be little incentive in the division for change at this level in respect to the gifted. Offering special classes for the gifted in an elective area might be helpful along with differentiated program planning, college and career planning. Again, there is little evidence to suggest that the RTGs are working directly with students in significant ways.

High school resource teacher roles need to be redefined to fit the nature of the program at that level, to define what students need at that level that is not provided through intensives, AP and IB, to provide college and career planning aimed at the gifted, and to organize seminars and other activities that unify program students across grade levels and departments. The dual role of AP or IB coordinator may be an effective use of part of the time that puts the RTG in direct contact with gifted students. The new job description crafted for the high school RTGs moves in the right direction but does not suggest the percentages of time that should be spent in some endeavors rather than others. Providing such information in their job description may be useful guidance for some.

Personnel comparisons

There is a noticeable lack of human resources supporting the program for the gifted in each school visited. According to APS special education factor guidelines, there is one FTE teacher for 13-24 special education students with an IEP in a resource setting and 1 FTE for 1-8 students on an IEP in a self-contained setting. In each school visited to review the gifted program, one resource gifted specialist was responsible for all identified gifted students at the school site, ranging from 40-100 at the elementary level, a range of 284-300 at middle school, and 404-721 at the high school level. The numbers were typically twice to four times as high as special education teachers at the elementary level and more than 12 times as high at middle school, and 18 times as high at high school.

The lack of parity in the resources makes it difficult for programs to run at all levels of schooling because the RTG cannot teach directly at all levels and do the rest of the job required. Moreover, serving and coordinating activities for 100 students K-5 is quite different from serving 1-24 students overall, another example of the lopsided case load of RTGs vs. their special education colleagues. Principal support and leadership related to the gifted program is also lacking in many buildings except for the presence of the RTG as a singular advocate. The program must glean support from other stakeholders in order to be viable in several of the buildings visited.

Communication

There is a need to upgrade the communication aspects of the program in respect to both human and material components of it. Websites, both the central and school-based ones, need to feature the presence of the program more prominently. It is important to increase the amount and scope of information provided regarding the ongoing nature of the gifted program, its accomplishments, and its goals and direction.

Communication on program changes and connections to new initiatives also need to be shared in a timely manner. RTGs report the lack of communication often on program changes until they have already been enacted. On the other side, however, data on program and monthly meetings is routinely available on Google docs, suggesting that the existing modes of communication, albeit appropriate, may be insufficient for some of the RTG's to process the data forthcoming.

Commendations

1. The division is to be commended for its use of integrated technology in classrooms. Smartboards, laptops, Ipads, and the internet all figure prominently in the daily learning of students in the gifted program.

2. The division is to be commended for its efforts to find more diverse learners for inclusion in gifted services. The presence of non-traditional tests, the use of profiles for discussion, and the continuous process for identification at Grades 2, 4, 6, and 9 provide evidence for such efforts being employed.

3. The division is to be commended for the use of research-based materials in language arts and mathematics from Grades 3-8. The math options for advanced study provided from Grades 6-8 is notable, with an accelerated option as an excellent opportunity for gifted students. At the elementary level, M2 and M3 provide depth and complexity with alignment to the new math standards in Virginia. The William and Mary language arts materials also provide advanced learning in literacy development, aligned with the new state standards.

4. The division is to be commended for having high schools that offer many advanced course options for gifted learners. The observed high schools, for example, offer a panoply of AP courses, with one offering the IB program option as well, with many students performing well on selected examinations. Results place these schools in the top tier of schools in the Washington area and in the US for course opportunities. College Board results also place the AP program performance pass rates beyond national standards. Both participation and performance rates for gifted learners in these programs are over 90% across a five-year period.

5. The division is to be commended for the innovative approaches to program delivery for gifted learners in Title I schools where opportunities include the extensive use of online resources, cross-grade grouping, and flexible collaboration between classroom and resource teachers of the gifted. The RTGs working in these schools are among the most dedicated professionals this evaluator has seen working on behalf of gifted learners anywhere. These schools have also begun to implement the Young Scholars Program, judged nationally as one of the top models for serving underrepresented groups of gifted learners (Olszewski & Clarenbach, 2014)

6. The supervisor of the program is to be commended for her emphasis on improving key aspects of the gifted program such as identification and differentiation and for how she has linked program efforts to APS initiatives. She has worked hard to provide connections to multiple initiatives including those in special education, Title I, and other programs.

Recommendations

1. Continue to implement the policy on cluster grouping with some flexibility in respect to the use of cross-class grouping and extensions where appropriate and necessary; facilitate cluster grouping at the middle school level by the use of within class grouping and other differentiation practices. Develop a related policy on differentiation that ensures that the grouping of gifted students coupled with differentiated instructional practices is expected.

2. Develop more policy options for acceleration beyond grade-skipping. Opportunities for content acceleration should be available in all subjects at elementary and middle school levels before the accelerated AP and IB offerings at the high school level. Compacting two years of study into one may be an appropriate option at both upper elementary and middle school levels in science and English. Early entrance to kindergarten and early exit from high school policies should also be developed. The new *Nation Empowered* report shows the different aspects of acceleration that require policy support at the district level (Assouline et al., 2015).

3. Establish intensive classes in all the core subjects in each middle school. Given the success of both AP and IB for gifted learners, it is essential that all learners have access to advanced work earlier that can prepare them effectively for these hallmark secondary experiences. The use of intensives can serve that purpose, with students identified as gifted constituting the majority of the classes while others who excel within that subject area making up the rest of the class.

4. Develop social studies and science programs systematically for gifted students at Grades 3-5. Given the scarcity of time for teaching these two subjects at the elementary level, it is essential that strong differentiation practices prevail when they are taught. The most efficient way to approach that is through the use of differentiated materials.

5. Make differentiated materials and commensurate training available and mandatory for all cluster teachers and their building administrators. Align the underlying strategies in the materials to the COS-R so that educators can see the corresponding connections. Provide a model of implementation with these workshops to illustrate expectations for use of the materials.

6. Ensure that RTGs spend at least 50% of their time working directly with identified gifted students. This is especially important in buildings where cluster grouping has not been effected or has not resulted in the adoption of differentiation best practices. RTGs also need to ensure that off-level learning assessments for gifted students are collected, analyzed, and communicated to document appropriate progress of identified students at elementary and middle school levels.
7. Use the AP and IB coursework as models for the rigorous preparation of gifted learners through vertical planning of intensives at Grades 6 through 10. In other words, employ the higher level content-based skills necessary for success in these courses throughout the secondary continuum. Vertical planning should also be done to create K-12 talent trajectories for gifted students in each core subject area in order to create a comprehensive set of opportunities for gifted learners.

8. Continue to monitor the identification and service delivery mechanisms to students from underrepresented populations. Since the populations of students in poverty, students from different ethnic backgrounds, especially Hispanics and African Americans, and twice-exceptional students remain underrepresented in the gifted program, it is essential that positive adjustments continue to be made to both identification protocols and program opportunities. The adoption of the Young Scholars program is a promising development in this area.

9. Monitor the performance of cluster teachers, using the COS-R or comparable instrument to judge differentiation best practice; monitor the RTGs annually, based on performance criteria to be collaboratively developed from their existing job descriptions. Design an annual evaluation plan to provide a snapshot of progress on the gifted services provided.

10. Create updated and more extensive tools for communication about the program to various publics. Ensure that all school and division-wide websites have current

information on the program and its activities. Ensure that materials are available in both tangible and electronic forms.

11. Provide additional resources to the program at both central office and building levels, commensurate with other special programs in the division. A specialist is clearly needed at central office to assist with the overall operation of the program, components of identification and service options, professional development, and monitoring and evaluation. Additionally, building size and the numbers of identified gifted students should dictate the assignment of additional RTG personnel. In several buildings, the need for a second halftime RTG is warranted.

The following chart may be helpful in understanding the sources of the recommendations. Each recommendation was derived from triangulating data across different sources of information, collected during the course of the study. No recommendation was forthcoming if it did not emanate from at least two sources in the data collection and analysis components of the study.

Chart D
Sources of Information for Recommendations

Recommendation	Sources			
	Division Materials and Data	Observation	Focus Group	NAGC Standards
1. Grouping		X	X	X
2. Acceleration	X	X		X
3. Intensive Classes	X	X		X
4. Science and Social Studies Classes	X	X	X	X
5. Mandatory training on materials and strategies	X	X	X	X
6. RTG Time Allocation		X	X	
7. Vertical Planning		X	X	X
8. Identification of underserved populations	X		X	X
9. Monitoring and evaluation	X			X
10. Communication	X		X	X
11. Additional program resources	X		X	X

The following areas for consideration go beyond the scope of this evaluation per se. However, they are areas that need further investigation and discussion among program leaders.

– Consider focusing additional resources on the K-2 program in each building. Students exhibiting advanced development in core academic areas should be receiving regular services within the classroom and across classrooms.

– Consider adding world languages to the core of gifted services by middle school level. The opportunities for advanced study are currently in place but not systematically linked to the gifted services menu. Given the likelihood that gifted students would gravitate to course-taking in at least one language, this would expand gifted opportunities in an appropriate way.

– Consider bringing the arts programs under the umbrella of gifted services in a more direct way as well. The need to identify and offer services to students with aptitudes and abilities in music, the visual arts, dance, and theater is an important aspect of gifted services and should be represented as a part of the total service picture.

Three Year Plan of Action

The above listed recommendations should be perceived as ones that require work over multiple years. Several of them require development work in respect to curriculum and program. Others require monitoring of current efforts and continuing implementation. The priority recommendations are listed in the plan for Year I implementation. These are in the areas of identification, curriculum development in elementary social studies and science, professional development, program monitoring, student assessment, and annual evaluation planning. Vertical planning is recommended as a tool to assist in articulating programs and services across levels of learning also in Year I. Resources needed to implement all facets of the program should be acquired in Year I.

In Year II, there is a need to address the recommendations for target emphases in professional development for counselors who would have responsibility for providing differentiated affective development and academic planning sessions for advanced learners at all levels. A communications plan also needs to be developed that would delineate the audiences to be reached and the types of messages to be created. A focus on collecting learning assessment data on gifted students needs to be initiated by RTGs. Of particular concern is the reworking of the identification system to ensure inclusion of underrepresented groups, based on evaluation data from Year I.

In Year III, new initiatives in identification and service delivery to underrepresented groups may occur. Also of importance in Year III is the refinement of initiatives implemented in Year II, and the implementation of those developed in Year II. Chart E portrays the plan of action by recommendation and year.

Chart E
Three-Year Plan for the Implementation of Recommendations

Year One	Year Two	Year Three
Monitor revised local identification process; evaluate its predictive validity for finding underrepresented groups.	Revise the identification process, based on evaluation results.	Monitor progress on the goal of diverse student representation in services.
Institute regular opportunities for professional collaboration in the form of vertical planning for K-5 and 6-12.	Continue regular opportunities for vertical planning.	Continue regular opportunities for vertical planning.
Design intensive coursework for English, science, and social studies in grades 6-10, modeled on AP and IB.	Implement intensive curriculum for science, English, and social studies in grades 6-10.	Refine intensive curriculum for science and social studies in grades 6-10.
Develop a professional development plan that identifies stakeholders and their needs, with a timeline.	Provide on-going professional development sessions for teachers on relevant topics within differentiated materials	Provide on-going professional development sessions for cluster teachers on relevant materials.
Provide mandatory professional development sessions for cluster teachers and their administrators on materials implementation and strategy applications.	Provide professional development for division counselors and principals.	Continue professional development for district counselors; hold problem-solving sessions with principals.
Collect accessible learning assessment data on gifted learners in Grades 3-8.	Track and report on gifted student progress annually on pre-post and/or off grade level assessments.	Track and report student progress annually on pre-post and/or off grade level assessments; assess the effectiveness of the process.
Design and implement an annual evaluation plan for the program that includes progress monitoring of personnel.	Develop a communications plan.	Implement the communication plan to provide additional information for all stakeholders, including parents.
	Develop a scope and sequence for the program, designing down from AP and IB to elementary grade offerings.	Pilot the comprehensive scope and sequence model in science K-12, with feedback for revision as needed

Conclusion

This evaluation report on Arlington Gifted Services in Arlington, Virginia has provided major findings and recommendations across multiple data sources—division materials, classroom observations, focus groups, and national standards in gifted education—to improve the services for advanced and gifted learners in the division. It has provided answers to the basic questions of the evaluation that focused on the extent to which the goals were being addressed, the perception of stakeholders about the program, the extent to which the program meets national standards of best practice, and the extent to which students are benefiting from being in the program. The report also has included a three-year plan for implementation of the recommendations.

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Appendices

Appendix A
Observation Instrument

The William and Mary Classroom Observation Scales, Revised (COS-R)
Teacher Observation

Joyce VanTassel-Baska, Ed.D. Linda Avery, Ph.D. Jeanne Stuck, Ph.D. Annie Feng, Ed.D.
Bruce Bracken, Ph.D. Dianne Drummond, M.Ed. Tamra Stambaugh, M.Ed.

School _____ Subject _____ Level _____ Number of Students _____

Directions: Please employ the following scale as you rate each of the checklist items. Rate each item according to how well the teacher characteristic or behavior was demonstrated during the observed instructional activity. Each item is judged on an individual, self-contained basis, regardless of its relationship to an overall set of behaviors relevant to the cluster heading.

3 = Effective	2 = Somewhat Effective	1 = Ineffective	N/O = Not Observed
The teacher evidenced careful planning and classroom flexibility in implementation of the behavior, eliciting many appropriate student responses. The teacher was clear and sustained focus on the purposes of learning.	The teacher evidenced some planning and/or classroom flexibility in implementation of the behavior, eliciting some appropriate students responses. The teacher was sometimes clear and focused on the purposes of learning.	The teacher evidenced little or no planning and/or classroom flexibility in implementation of the behavior, eliciting minimal appropriate student responses. The teacher was unclear and unfocused regarding the purpose of learning.	The listed behavior was not demonstrated during the time of the observation. (NOTE There must be an obvious attempt made for the certain behavior to be rated "ineffective" instead of "not observed".)

General Teaching Behaviors

Curriculum Planning and Delivery	**3**	**2**	**1**	**N/O**
The teacher…				
1. set high expectations for student performance.				
2. incorporated activities for students to apply new knowledge.				
3. engaged students in planning, monitoring, or assessing their learning.				
4. encouraged students to express their thoughts.				
5. had students reflect on what they had learned.				

Comments:

Differentiated Teaching Behaviors

Materials and Strategy Utilization	**3**	**2**	**1**	**N/O**
The teacher…				
6. showed evidence of using program-relevant differentiated materials for the gifted in math, science, social studies, or **language arts**. (circle which subject applied).				
7. used **cluster**, pull-out, self-contained, or advanced class grouping to target gifted learners for instruction. (circle one or more)				
8. used models of thinking to promote deeper conceptual understanding and advanced content learning.				
9. employed evidence-based instructional strategies, such as graphic organizers, to enhance student higher level thinking.				

Comments:

Accommodations for Individual Differences	**3**	**2**	**1**	**N/O**
The teacher…				
10. provided opportunities for independent or group learning to promote depth in understanding content.				
11. accommodated individual or subgroup differences (e.g., through individual conferencing, student or teacher choice in material selection and task assignments.)				
12. encouraged multiple interpretations of events and situations.				
13. allowed students to discover key ideas individually through structured activities and/or questions.				
Comments:				

Critical Thinking Strategies	**3**	**2**	**1**	**N/O**
The teacher…				
14. encouraged students to judge or evaluate situations, problems, or issues.				
15. engaged students in comparing and contrasting ideas (e.g., analyze generated ideas).				
16. provided opportunities for students to generalize from concrete data or information to the abstract.				
17. encouraged student synthesis or summary of information within or across disciplines.				
Comments:				

Creative Thinking Strategies	**3**	**2**	**1**	**N/O**
The teacher…				
18. solicited many diverse thoughts about issues or ideas.				
19. engaged students in the exploration of diverse points of view to reframe ideas.				
20. encouraged students to demonstrate open-mindedness and tolerance of imaginative, sometimes playful solutions to problems.				
21. provided opportunities for students to develop and elaborate on their ideas.				
Comments:				

Analysis and Inquiry Strategies	**3**	**2**	**1**	**N/O**
The teacher…				
22. employed the inquiry process to stimulate high level learning.				
23. asked high level questions that encouraged students to think and ask their own questions.				
24. employed activities that required analysis of text, use of models, or other symbolic sources.				
25. employed activities that required students to build argument orally, visually, in written form, or by using models and symbols.				
26. asked students to collect and draw inferences from data and represent findings in a relevant form.				
Comments:				

Additional Comments:

Appendix B
Results of Observations by Use and Effectiveness

Table I
Categorical Mean Scores by Grade Level
Total Classrooms Observed – Elementary School Level (N=56)
Total Classrooms Observed – Middle School Level (N=27)
Total Classrooms Observed – High School Level (N=24)

Categorical Mean Scores	Elementary			Middle School			High School		
	N	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*
Curriculum Planning and Delivery	56	2.5	0.5	27	2.3	0.5	24	2.4	0.4
Materials and Strategy Utilization	49	2.4	0.5	20	2.3	0.7	22	2.5	0.5
Accommodations for Individual Differences	56	2.4	0.5	27	2.2	0.6	24	2.4	0.5
Critical Thinking Strategies	49	2.4	0.6	24	2.2	0.7	23	2.4	0.5
Creative Thinking Strategies	52	2.2	0.5	15	2.3	0.5	19	2.3	0.5
Analysis and Inquiry Strategies	52	2.4	0.6	25	2.1	0.6	23	2.4	0.5

Table II
Observation Mean Scores
Elementary School Level
Total Classrooms Observed (N=56)

Curriculum Planning and Delivery			
The teacher….	*N*	*M*	*SD*
1. set high expectations for student performance.	55	2.5	0.6
2. incorporated activities.	51	2.5	0.6
3. engaged students in planning, monitoring, or assessing their learning.	11	2.4	0.7
4. encouraged students to express their thoughts.	51	2.5	0.5
5. had students reflect on what they had learned.	8	2.4	0.7

Materials and Strategy Utilization			
The teacher….	*N*	*M*	*SD*
6. showed evidence of using program-relevant differentiated materials for the gifted in math, science, social studies, or language arts.	30	2.5	0.6
7. used cluster, pull-out, self-contained, or advanced class grouping to target gifted learners	26	2.7	0.5
8. used models of thinking to promote deeper conceptual understanding and advanced content learning.	8	2.3	0.5
9. employed evidence-based instructional strategies, such as graphic organizers, to enhance student higher level thinking.	44	2.5	0.6

Accommodations for Individual Differences			
The teacher….	*N*	*M*	*SD*
10. provided opportunities for independent or group learning to promote depth in understanding	51	2.6	0.6
11. accommodated individual or subgroup differences	42	2.3	0.6
12. encouraged multiple interpretations of events and situations.	31	2.4	0.7
13. allowed students to discover key ideas individually through structured activities and/or questions.	49	2.5	0.6

Critical Thinking Strategies			
The teacher….	*N*	*M*	*SD*
14. encouraged students to judge or evaluate situations, problems, or issues	44	2.5	0.6
15. engaged students in comparing and contrasting ideas	20	2.4	0.7
16. provided opportunities for students to generalize from concrete data or information to the abstract	28	2.1	0.5
17. encouraged students synthesis or summary of information within or across disciplines	10	2.4	0.7

Creative Thinking Strategies			
The teacher….	*N*	*M*	*SD*
18. solicited many diverse thoughts about issues or ideas.	35	2.2	0.6
19. engaged students in the exploration of diverse points of view to reframe ideas.	10	2.3	0.7
20. encouraged students to demonstrate open-mindedness and tolerance of imaginative, sometimes playful solutions to problems	16	2.2	0.4
21. provided opportunities for students to develop and elaborate on their ideas	47	2.2	0.6

Analysis and Inquiry Strategies			
The teacher….	*N*	*M*	*SD*
22. employed the inquiry process to stimulate high level learning	33	2.3	0.7
23. asked high level questions that encouraged students to think and ask their own questions.	33	2.5	0.7
24. employed activities that required analysis of text, use of models, or other symbolic sources.	42	2.6	0.6
25. employed activities that required students to build argument orally, visually, in written form, or by using models and symbols	15	2.7	0.5
26. asked students to collect and draw inferences from data and represent findings in relevant form.	22	2.4	0.7

Table III
Observation Mean Scores
Middle School Level
Total Classrooms Observed (N=27)

Curriculum Planning and Delivery			
The teacher….	*N*	*M*	*SD*
1. set high expectations for student performance.	27	2.3	0.6
2. incorporated activities.	26	2.4	0.5
3. engaged students in planning, monitoring, or assessing their learning.	6	2.5	0.5
4. encouraged students to express their thoughts.	23	2.4	0.7
5. had students reflect on what they had learned.	3	1.7	1.2

Materials and Strategy Utilization			
The teacher….	*N*	*M*	*SD*
6. showed evidence of using program-relevant differentiated materials for the gifted in math, science, social studies, or language arts.	8	2.8	0.5
7. used cluster, pull-out, self-contained, or advanced class grouping to target gifted learners	15	2.3	0.8
8. used models of thinking to promote deeper conceptual understanding and advanced content learning.	2	2.5	0.7
9. employed evidence-based instructional strategies, such as graphic organizers, to enhance student higher level thinking.	14	2.4	0.5

Accommodations for Individual Differences			
The teacher….	*N*	*M*	*SD*
10. provided opportunities for independent or group learning to promote depth in understanding	24	2.3	0.6
11. accommodated individual or subgroup differences	18	2.1	0.7
12. encouraged multiple interpretations of events and situations.	10	2.3	0.8
13. allowed students to discover key ideas individually through structured activities and/or questions.	20	2.4	0.7

Critical Thinking Strategies			
The teacher….	*N*	*M*	*SD*
14. encouraged students to judge or evaluate situations, problems, or issues	17	2.2	0.7
15. engaged students in comparing and contrasting ideas	10	2.0	0.7
16. provided opportunities for students to generalize from concrete data or information to the abstract	14	2.2	0.7
17. encouraged students synthesis or summary of information within or across disciplines	7	2.3	1.0

Creative Thinking Strategies			
The teacher….	*N*	*M*	*SD*
18. solicited many diverse thoughts about issues or ideas.	8	2.3	0.7
19. engaged students in the exploration of diverse points of view to reframe ideas.	6	2.2	0.8
20. encouraged students to demonstrate open-mindedness and tolerance of imaginative, sometimes playful solutions to problems	2	3.0	0.0
21. provided opportunities for students to develop and elaborate on their ideas	12	2.6	0.5

Analysis and Inquiry Strategies			
The teacher….	*N*	*M*	*SD*
22. employed the inquiry process to stimulate high level learning	17	2.2	0.7
23. asked high level questions that encouraged students to think and ask their own questions.	11	2.2	0.9
24. employed activities that required analysis of text, use of models, or other symbolic sources.	19	2.3	0.7
25. employed activities that required students to build argument orally, visually, in written form, or by using models and symbols	9	2.4	0.7
26. asked students to collect and draw inferences from data and represent findings in relevant form.	10	2.1	0.7

Table IV
Observation Mean Scores
High School Level
Total Classrooms Observed (N-24)

Curriculum Planning and Delivery			
The teacher….	*N*	*M*	*SD*
1. set high expectations for student performance.	23	2.5	0.5
2. incorporated activities.	22	2.6	0.5
3. engaged students in planning, monitoring, or assessing their learning.	7	2.6	0.5
4. encouraged students to express their thoughts.	23	2.4	0.5
5. had students reflect on what they had learned.	5	2.4	0.5

Materials and Strategy Utilization			
The teacher….	*N*	*M*	*SD*
6. showed evidence of using program-relevant differentiated materials for the gifted in math, science, social studies, or language arts.	19	2.5	0.6
7. used cluster, pull-out, self-contained, or advanced class grouping to target gifted learners	17	2.5	0.5
8. used models of thinking to promote deeper conceptual understanding and advanced content learning.	3	2.3	0.6
9. employed evidence-based instructional strategies, such as graphic organizers, to enhance student higher level thinking.	16	2.6	0.6

Accommodations for Individual Differences			
The teacher….	*N*	*M*	*SD*
10. provided opportunities for independent or group learning to promote depth in understanding	20	2.5	0.7
11. accommodated individual or subgroup differences	10	2.2	0.4
12. encouraged multiple interpretations of events and situations.	12	2.4	0.5
13. allowed students to discover key ideas individually through structured activities and/or questions.	24	2.4	0.5

Critical Thinking Strategies			
The teacher….	*N*	*M*	*SD*
14. encouraged students to judge or evaluate situations, problems, or issues	22	2.6	0.5
15. engaged students in comparing and contrasting ideas	11	2.4	0.7
16. provided opportunities for students to generalize from concrete data or information to the abstract	16	2.4	0.5
17. encouraged students synthesis or summary of information within or across disciplines	11	2.3	0.5

Creative Thinking Strategies			
The teacher….	*N*	*M*	*SD*
18. solicited many diverse thoughts about issues or ideas.	11	2.5	0.5
19. engaged students in the exploration of diverse points of view to reframe ideas.	2	3.0	0.0
20. encouraged students to demonstrate open-mindedness and tolerance of imaginative, sometimes playful solutions to problems	6	2.5	0.5
21. provided opportunities for students to develop and elaborate on their ideas	15	2.4	0.5

Analysis and Inquiry Strategies			
The teacher….	*N*	*M*	*SD*
22. employed the inquiry process to stimulate high level learning	19	2.4	0.6
23. asked high level questions that encouraged students to think and ask their own questions.	14	2.4	0.6
24. employed activities that required analysis of text, use of models, or other symbolic sources.	21	2.4	0.6
25. employed activities that required students to build argument orally, visually, in written form, or by using models and symbols	14	2.4	0.5
26. asked students to collect and draw inferences from data and represent findings in relevant form.	17	2.5	0.5

Appendix C
Focus Group Protocol for Resource Teachers of the Gifted (RTG's)

Arlington Public Schools
Focus Group Questions

General Question: What is your overall perception of the gifted program in Arlington?

1. What is your role as a resource teacher of the gifted in the program? (What % of time do you spend directly working with students, working with teachers, and handling administrative tasks (ie. identification)?

2. What is your perception of the APS identification process? How does it impact underrepresented groups (eg. minority, low income, LEP, and twice exceptional)?

3. What is your perception of the use of differentiated materials in cluster/intensive/advanced classrooms (eg advanced texts, use of research-based curriculum? What about the use of differentiated strategies (eg. PBL, Socratic seminars)?

4. What is your perception of the effectiveness of the cluster grouping model in APS?

5. How prepared are cluster classroom teachers to work with gifted learners?

6. What do you perceive to be areas in which the program might improve?

7. What do you perceive to be the major benefits of the program for identified gifted students?

Appendix D
2010 NAGC Pre-K-Grade 12 Gifted Programming Standards

Report on Evaluation Study of Gifted Services in Arlington Public Schools - May 31, 2016

2010 *Pre-K-Grade 12 Gifted Programming Standards*

National Association for Gifted Children

1331 H Street, NW, Suite 1001 • Washington, DC 20005 • 202.785.4268 • www.nagc.org

Evaluation Checklist

Gifted Education Programming Standard 1: Learning and Development

Introduction

For teachers and other educators in PreK-12 settings to be effective in working with learners with gifts and talents, they must understand the characteristics and needs of the population for whom they are planning curriculum, instruction, assessment, programs, and services. These characteristics provide the rationale for differentiation in programs, grouping, and services for this population and are translated into appropriate differentiation choices made at curricular and program levels in schools and school districts. While cognitive growth is important in such programs, affective development is also necessary. Thus many of the characteristics addressed in this standard emphasize affective development linked to self-understanding and social awareness.

Standard 1: Learning and Development **Description:** Educators, recognizing the learning and developmental differences of students with gifts and talents, promote ongoing self-understanding, awareness of their needs, and cognitive and affective growth of these students in school, home, and community settings to ensure specific student outcomes.		**Indicators**				
		Y	**U**	**N**	**D**	**N/O**
Total Indicators for Standard 1		**5**	**3**	**2**	**3**	**0**
Student Outcomes	**Evidence-Based Practices**					
1.1. Self-Understanding. Students with gifts and talents demonstrate self-knowledge with respect to their interests, strengths, identities, and needs in socio-emotional development and in intellectual, academic, creative, leadership, and artistic domains	1.1.1. Educators engage students with gifts and talents in identifying interests, Strengths, and gifts.	X				
	1.1.2. Educators assist students with gifts and talents in developing identities supportive of achievement.		X			
1.2. *Self-Understanding*. Students with gifts and talents possess a developmentally appropriate understanding of how they learn and grow; they recognize the influences of their beliefs, traditions, and values on their learning and behavior.	1.2.1. Educators develop activities that match each student's developmental level and culture-based learning needs.				X	
1.3. Self-Understanding. Students with gifts and talents demonstrate understanding of and respect for similarities and differences between themselves and their peer group and others in the general population.	1.3.1. Educators provide a variety of research-based grouping practices for students with gifts and talents that allow them to interact with individuals of various gifts, talents, abilities, and strengths.		X			
	1.3.2. Educators model respect for individuals with diverse abilities, strengths, and goals.	X				

Key: Y indicates Yes; U indicates Uneven; N indicates No; D indicates Developing; N/O indicates Not Observed

Form completed by gifted education coordinator in collaboration with the evaluator.

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Standard 1: Learning and Development **Description:** Educators, recognizing the learning and developmental differences of students with gifts and talents, promote ongoing self-understanding, awareness of their needs, and cognitive and affective growth of these students in school, home, and community settings to ensure specific student outcomes.		**Indicators**				
		Y	**U**	**N**	**D**	**N/O**
Student Outcomes	**Evidence-Based Practices**					
1.4. Awareness of Needs. Students with gifts and talents access resources from the community to support cognitive and affective needs, including social interactions with others having similar interests and abilities or experiences, including same-age peers and mentors or experts.	1.4.1. Educators provide role models (e.g., through mentors, bibliotherapy) for students with gifts and talents that match their abilities and interests.	X				
	1.4.2. Educators identify out-of-school learning opportunities that match students' abilities and interests.	X				
1.5. Awareness of Needs. Students' families and communities understand similarities and differences with respect to the development and characteristics of advanced and typical learners and support students with gifts and talents' needs	1.5.1. Educators collaborate with families in accessing resources to develop their child's talents.*		X			
1.6. Cognitive and Affective Growth. Students with gifts and talents benefit from meaningful and challenging learning activities addressing their unique characteristics and needs.	1.6.1. Educators design interventions for students to develop cognitive and affective growth that is based on research of effective practices.	X				
	1.6.2. Educators develop specialized intervention services for students with gifts and talents who are underachieving and are now learning and developing their talents.				X	
1.7. Cognitive and Affective Growth. Students with gifts and talents recognize their preferred approaches to learning and expand their repertoire.	1.7.1. Teachers enable students to identify their preferred approaches to learning, accommodate these preferences, and expand them.				X	
1.8. Cognitive and Affective Growth. Students with gifts and talents identify future career goals that match their talents and abilities and resources needed to meet those goals (e.g., higher education opportunities, mentors, financial support).	1.8.1. Educators provide students with college and career guidance that is consistent with their strengths.			X		
	1.8.2. Teachers and counselors implement a curriculum scope and sequence that contains person/social awareness and adjustment, academic planning, and vocational and career awareness.			X		

Report on Evaluation Study of Gifted Services in Arlington Public Schools - May 31, 2016

2010 *Pre-K-Grade 12 Gifted Programming Standards*

Evaluation Checklist

Gifted Education Programming Standard 2: Assessment

Introduction

Knowledge about all forms of assessment is essential for educators of students with gifts and talents. It is integral to identification, assessing each student's learning progress, and evaluation of programming. Educators need to establish a challenging environment and collect multiple types of assessment information so that all students are able to demonstrate their gifts and talents. Educators' understanding of non-biased, technically adequate, and equitable approaches enables them to identify students who represent diverse backgrounds. They also differentiate their curriculum and instruction by using pre- and post-, performance-based, product-based, and out-of-level assessments. As a result of each educator's use of ongoing assessments, students with gifts and talents demonstrate advanced and complex learning. Using these student progress data, educators then evaluate services and make adjustments to one or more of the school's programming components so that student performance is improved.

Standard 2: Assessment **Description:** Assessments provide information about identification, learning progress and outcomes, and evaluation of programming for students with gifts and talents in all domains.		**Indicators**				
		Y	**U**	**N**	**D**	**N/O**
Total Indicators for Standard 2		**8**	**2**	**7**	**5**	**0**
Student Outcomes	**Evidence-Based Practices**					
2.1. *Identification*. All students in grades PK-12 have equal access to a comprehensive assessment system that allows them to demonstrate diverse characteristics and behaviors that are associated with giftedness.	2.1.1. Educators develop environments and instructional activities that encourage students to express diverse characteristics and behaviors that are associated with giftedness.				X	
	2.1.2. Educators provide parents/guardians with information regarding diverse characteristics and behaviors that are associated with giftedness.	X				
2.2. *Identification*. Each student reveals his or her exceptionalities or potential through assessment evidence so that appropriate instructional accommodations and modifications can be provided.	2.2.1. Educators establish comprehensive, cohesive, and ongoing procedures for identifying and serving students with gifts and talents. These provisions include informed consent, committee review, student retention, student reassessment, student exiting, and appeals procedures for both entry and exit from gifted program services.	X				
	2.2.2. Educators select and use multiple assessments that measure diverse abilities, talents, and strengths that are based on current theories, models, and research.	X				
	2.2.3 Assessments provide qualitative and quantitative information from a variety of sources, including off-level testing, are nonbiased and equitable, and are technically adequate for the purpose.	X				
	2.2.4. Educators have knowledge of student exceptionalities and collect assessment data while adjusting curriculum and instruction to learn about each student's developmental level and aptitude for learning.			X		
	2.2.5. Educators interpret multiple assessments in different domains and understand the uses and limitations of the assessments in identifying the needs of students with gifts and talents.			X		
	2.2.6. Educators inform all parents/guardians about the identification process. Teachers obtain parental/guardian permission for assessments, use culturally sensitive checklists, and elicit evidence regarding the child's interests and potential outside of the classroom setting.	X				

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Standard 2: Assessment **Description:** Assessments provide information about identification, learning progress and outcomes, and evaluation of programming for students with gifts and talents in all domains.		**Indicators**				
		Y	**U**	**N**	**D**	**N/O**
Student Outcomes	**Evidence-Based Practices**					
2.3. *Identification*. Students with identified needs represent diverse backgrounds and reflect the total student population of the district.	2.3.1. Educators select and use non-biased and equitable approaches for identifying students with gifts and talents, which may include using locally developed norms or assessment tools in the child's native language or in nonverbal formats.				X	
	2.3.2. Educators understand and implement district and state policies designed to foster equity in gifted programming and services.	X				
	2.3.3. Educators provide parents/guardians with information in their native language regarding diverse behaviors and characteristics that are associated with giftedness and with information that explains the nature and purpose of gifted programming options.	X				
2.4. *Learning Progress and Outcomes*. Students with gifts and talents demonstrate advanced and complex learning as a result of using multiple, appropriate, and ongoing assessments.	2.4.1. Educators use differentiated pre- and post- performance-based assessments to measure the progress of students with gifts and talents.			X		
	2.4.2. Educators use differentiated product-based assessments to measure the progress of students with gifts and talents.			X		
	2.4.3. Educators use off-level standardized assessments to measure the progress of students with gifts and talents.			X		
	2.4.4. Educators use and interpret qualitative and quantitative assessment information to develop a profile of the strengths and weaknesses of each student with gifts and talents to plan appropriate intervention.			X		
	2.4.5. Educators communicate and interpret assessment information to students with gifts and talents and their parents/guardians.		X			
2.5. *Evaluation of Programming*. Students identified with gifts and talents demonstrate important learning progress as a result of programming and services.	2.5.1. Educators ensure that the assessments used in the identification and evaluation processes are reliable and valid for each instrument's purpose, allow for above-grade-level performance, and allow for diverse perspectives.	X				
	2.5.2. Educators ensure that the assessment of the progress of students with gifts and talents uses multiple indicators that measure mastery of content, higher level thinking skills, achievement in specific program areas, and affective growth.			X		
	2.5.3. Educators assess the quantity, quality, and appropriateness of the programming and services provided for students with gifts and talents by disaggregating assessment data and yearly progress data and making the results public.*		X			
2.6. *Evaluation of Programming*. Students identified with gifts and talents have increased access and they show significant learning progress as a result of improving components of gifted education programming.	2.6.1. Administrators provide the necessary time and resources to implement an annual evaluation plan developed by persons with expertise in program evaluation and gifted education.**				X	
	2.6.2. The evaluation plan is purposeful and evaluates how student-level outcomes are influenced by one or more of the following components of gifted education programming: (a) identification, (b) curriculum, (c) instructional programming and services, (d) ongoing assessment of student learning, (e) counseling and guidance programs, (f) teacher qualifications and professional development, (g) parent/guardian and community involvement, (h) programming resources, and (i) programming design, management, and delivery.**				X	
	2.6.3. Educators disseminate the results of the evaluation, orally and in written form, and explain how they will use the results.**				X	

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Gifted Education Programming Standard 3: Curriculum Planning and Instruction

Introduction

Assessment is an integral component of the curriculum planning process. The information obtained from multiple types of assessments informs decisions about curriculum content, instructional strategies, and resources that will support the growth of students with gifts and talents. Educators develop and use a comprehensive and sequenced core curriculum that is aligned with local, state, and national standards, then differentiate and expand it. In order to meet the unique needs of students with gifts and talents, this curriculum must emphasize advanced, conceptually challenging, in-depth, distinctive, and complex content within cognitive, affective, aesthetic, social, and leadership domains. Educators must possess a repertoire of evidence-based instructional strategies in delivering the curriculum (a) to develop talent, enhance learning, and provide students with the knowledge and skills to become independent selfaware learners, and (b) to give students the tools to contribute to a multicultural, diverse society. The curriculum, instructional strategies, and materials and resources must engage a variety of learners using culturally responsive practices.

Standard 3: Curriculum Planning and Instruction **Description:** Educators apply the theory and research-based models of curriculum and instruction related to students with gifts and talents and respond to their needs by planning, selecting, adapting, and creating culturally relevant curriculum and by using a repertoire of evidence-based instructional strategies to ensure specific student outcomes.		**Indicators**				
		Y	**U**	**N**	**D**	**N/O**
Total Indicators for Standard 3		**4**	**9**	**5**	**2**	**0**
Student Outcomes	**Evidence-Based Practices**					
3.1. *Curriculum Planning*. Students with gifts and talents demonstrate growth commensurate with aptitude during the school year.	3.1.1. Educators use local, state, and national standards to align and expand curriculum and instructional plans.	X				
	3.1.2. Educators design and use a comprehensive and continuous scope and sequence to develop differentiated plans for PK-12 students with gifts and talents.			X		
	3.1.3. Educators adapt, modify, or replace the core or standard curriculum to meet the needs of students with gifts and talents and those with special needs such as twice-exceptional, highly gifted, and English language learners.		X			
	3.1.4. Educators design differentiated curricula that incorporate advanced, conceptually challenging, in-depth, distinctive, and complex content for students with gifts and talents.		X			
	3.1.5. Educators use a balanced assessment system, including preassessment and formative assessment, to identify students' needs, develop differentiated education plans, and adjust plans based on continual progressmonitoring.*			X		
	3.1.6. Educators use pre-assessments and pace instruction based on the learning rates of students with gifts and talents and accelerate and compact learning as appropriate				X	
	3.1.7. Educators use information and technologies, including assistive technologies, to individualize for students with gifts and talents, including those who are twice-exceptional.			X		
3.2. *Talent Development*. Students with gifts and talents become more competent in multiple talent areas and across dimensions of learning.	3.2.1. Educators design curricula in cognitive, affective, aesthetic, social, and leadership domains that are challenging and effective for students with gifts and talents.	X				
	3.2.2. Educators use metacognitive models to meet the needs of students with gifts and talents.			X		

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Standard 3: Curriculum Planning and Instruction **Description:** Educators apply the theory and research-based models of curriculum and instruction related to students with gifts and talents and respond to their needs by planning, selecting, adapting, and creating culturally relevant curriculum and by using a repertoire of evidence-based instructional strategies to ensure specific student outcomes.		**Indictors**				
		Y	**U**	**N**	**D**	**N/O**
Student Outcomes	**Evidence-Based Practices**					
3.3. *Talent Development*. Students with gifts and talents develop their abilities in their domain of talent and/or area of interest.	3.3.1. Educators select, adapt, and use a repertoire of instructional strategies and materials that differentiate for students with gifts and talents and that respond to diversity.				X	
	3.3.2. Educators use school and community resources that support differentiation.	X				
	3.3.3. Educators provide opportunities for students with gifts and talents to explore, develop, or research their areas of interest and/or talent.		X			
3.4. *Instructional Strategies*. Students with gifts and talents become independent investigators. .	3.4.1. Educators use critical-thinking strategies to meet the needs of students with gifts and talents.		X			
	3.4.2. Educators use creative-thinking strategies to meet the needs of students with gifts and talents.		X			
	3.4.3. Educators use problem-solving model strategies to meet the needs of students with gifts and talents.		X			
	3.4.4. Educators use inquiry models to meet the needs of students with gifts and talents.		X			
3.5. *Culturally Relevant Curriculum*. Students with gifts and talents develop knowledge and skills for living and being productive in a multicultural, diverse, and global society.	3.5.1. Educators develop and use challenging, culturally responsive curriculum to engage all students with gifts and talents.		X			
	3.5.2. Educators integrate career exploration experiences into learning opportunities for students with gifts and talents, e.g. biography study or speakers.			X		
	3.5.3. Educators use curriculum for deep explorations of cultures, languages, and social issues related to diversity.		X			
3.6. *Resources*. Students with gifts and talents benefit from gifted education programming that provides a variety of high quality resources and materials.	3.6.1. Teachers and administrators demonstrate familiarity with sources for high quality resources and materials that are appropriate for learners with gifts and talents.*	X				

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Gifted Education Programming Standard 4: Learning Environments

Introduction

Effective educators of students with gifts and talents create safe learning environments that foster emotional well-being, positive social interaction, leadership for social change, and cultural understanding for success in a diverse society. Knowledge of the impact of giftedness and diversity on social-emotional development enables educators of students with gifts and talents to design environments that encourage independence, motivation, and self-efficacy of individuals from all backgrounds. They understand the role of language and communication in talent development and the ways in which culture affects communication and behavior. They use relevant strategies and technologies to enhance oral, written, and artistic communication of learners whose needs vary based on exceptionality, language proficiency, and cultural and linguistic differences. They recognize the value of multilingualism in today's global community.

Standard 4: Learning Environments **Description:** Learning environments foster personal and social responsibility, multicultural competence, and interpersonal and technical communication skills for leadership in the 21st century to ensure specific student outcomes.		Indicators				
		Y	U	N	D	N/O
Total Indicators for Standard 4		**4**	**2**	**0**	**5**	**6**
Student Outcomes	**Evidence-Based Practices**					
4.1. *Personal Competence*. Students with gifts and talents demonstrate growth in personal competence and dispositions for exceptional academic and creative productivity. These include self-awareness, self-advocacy, self-efficacy, confidence, motivation, resilience, independence, curiosity, and risk taking.	4.1.1. Educators maintain high expectations for all students with gifts and talents as evidenced in meaningful and challenging activities.				X	
	4.1.2. Educators provide opportunities for self-exploration, development and pursuit of interests, and development of identities supportive of achievement, e.g., through mentors and role models.				X	
	4.1.3. Educators create environments that support trust among diverse learners.					X
	4.1.4. Educators provide feedback that focuses on effort, on evidence of potential to meet high standards, and on mistakes as learning opportunities.				X	
	4.1.5. Educators provide examples of positive coping skills and opportunities to apply them.					X
4.2. *Social Competence*. Students with gifts and talents develop social competence manifested in positive peer relationships and social interactions.	4.2.1. Educators understand the needs of students with gifts and talents for both solitude and social interaction.					X
	4.2.2. Educators provide opportunities for interaction with intellectual and artistic/creative peers as well as with chronological-age peers.		X			
	4.2.3. Educators assess and provide instruction on social skills needed for school, community, and the world of work.					X
4.3. *Leadership*. Students with gifts and talents demonstrate personal and social responsibility and leadership skills.	4.3.1 Educators establish a safe and welcoming climate for addressing social issues and developing personal responsibility.					X
	4.3.2. Educators provide environments for developing many forms of leadership and leadership skills.					X
	4.3.3. Educators promote opportunities for leadership in community settings to effect positive change.		X			

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Standard 4: Learning Environments **Description:** Learning environments foster personal and social responsibility, multicultural competence, and interpersonal and technical communication skills for leadership in the 21st century to ensure specific student outcomes.		Indicators				
		Y	U	N	D	N/O
Student Outcomes	**Evidence-Based Practices**					
4.4. *Cultural Competence*. Students with gifts and talents value their own and others' language, heritage, and circumstance. They possess skills in communicating, teaming, and collaborating with diverse individuals and across diverse groups.[1] They use positive strategies to address social issues, including discrimination and stereotyping.	4.4.1. Educators model appreciation for and sensitivity to students' diverse backgrounds and languages.				X	
	4.4.2. Educators censure discriminatory language and behavior and model appropriate strategies.	X				
	4.4.3. Educators provide structured opportunities to collaborate with diverse peers on a common goal.	X				
4.5. *Communication Competence*. Students with gifts and talents develop competence in interpersonal and technical communication skills. They demonstrate advanced oral and written skills, balanced biliteracy or multiliteracy, and creative expression. They display fluency with technologies that support effective communication	4.5.1. Educators provide opportunities for advanced development and maintenance of first and second language(s).	X				
	4.5.2. Educators provide resources to enhance oral, written, and artistic forms of communication, recognizing students' cultural context.	X				
	4.5.3. Educators ensure access to advanced communication tools, including assistive technologies, and use of these tools for expressing higher-level thinking and creative productivity.				X	

1 Differences among groups of people and individuals based on ethnicity, race, socioeconomic status, gender, exceptionalities, language, religion, sexual orientation, and geographical area.

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Gifted Education Programming Standard 5: Programming

Introduction

The term programming refers to a continuum of services that address students with gifts and talents' needs in all settings. Educators develop policies and procedures to guide and sustain all components of comprehensive and aligned programming and services for PreK-12 students with gifts and talents. Educators use a variety of programming options such as acceleration and enrichment in varied grouping arrangements (cluster grouping, resource rooms, special classes, special schools) and within individualized learning options (independent study, mentorships, online courses, internships) to enhance students' performance in cognitive and affective areas and to assist them in identifying future career goals. They augment and integrate current technologies within these learning opportunities to increase access to high level programming such as distance learning courses and to increase connections to resources outside of the school walls. In implementing services, educators in gifted, general, special education programs, and related professional services collaborate with one another and parents/guardians and community members to ensure that students' diverse learning needs are met. Administrators demonstrate their support of these programming options by allocating sufficient resources so that all students within gifts and talents receive appropriate educational services

Standard 5: Programming **Description:** Educators are aware of empirical evidence regarding (a) the cognitive, creative, and affective development of learners with gifts and talents, and (b) programming that meets their concomitant needs. Educators use this expertise systematically and collaboratively to develop, implement, and effectively manage comprehensive services for students with a variety of gifts and talents to ensure specific student outcomes.		**Indicators**				
		Y	**U**	**N**	**D**	**N/O**
Total Indicators for Standard 5		**2**	**3**	**2**	**5**	**1**
Student Outcomes	**Evidence-Based Practices**					
5.1. *Variety of Programming*. Students with gifts and talents participate in a variety of evidence-based programming options that enhance performance in cognitive and affective areas.	5.1.1. Educators regularly use multiple alternative approaches to accelerate learning.				X	
	5.1.2. Educators regularly use enrichment options to extend and deepen learning opportunities within and outside of the school setting.	X				
	5.1.3. Educators regularly use multiple forms of grouping, including clusters, resource rooms, special classes, or special schools.		X			
	5.1.4. Educators regularly use individualized learning options such as mentorships, internships, online courses, and independent study.				X	
	5.1.5. Educators regularly use current technologies, including online learning options and assistive technologies to enhance access to high-level programming.				X	
	5.1.6. Administrators demonstrate support for gifted programs through equitable allocation of resources and demonstrated willingness to ensure that learners with gifts and talents receive appropriate educational services.		X			
5.2. *Coordinated Services*. Students with gifts and talents demonstrate progress as a result of the shared commitment and coordinated services of gifted education, general education, special education, and related professional services, such as school counselors, school psychologists, and social workers.	5.2.1. Educators in gifted, general, and special education programs, as well as those in specialized areas, collaboratively plan, develop, and implement services for learners with gifts and talents.				X	

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Standard 5: Programming **Description:** Educators are aware of empirical evidence regarding (a) the cognitive, creative, and affective development of learners with gifts and talents, and (b) programming that meets their concomitant needs. Educators use this expertise systematically and collaboratively to develop, implement, and effectively manage comprehensive services for students with a variety of gifts and talents to ensure specific student outcomes.		**Indicators**				
		Y	**U**	**N**	**D**	**N/O**
Student Outcomes	**Evidence-Based Practices**					
5.3. *Collaboration*. Students with gifts and talents' learning is enhanced by regular collaboration among families, community, and the school.	5.3.1. Educators regularly engage families and community members for planning, programming, evaluating, and advocating.				X	
5.4. *Resources*. Students with gifts and talents participate in gifted education programming that is adequately funded to meet student needs and program goals..	5.4.1. Administrators track expenditures at the school level to verify appropriate and sufficient funding for gifted programming and services.					X
5.5. *Comprehensiveness.* Students with gifts and talents develop their potential through comprehensive, aligned programming and services.	5.5.1. Educators develop thoughtful, multi-year program plans in relevant student talent areas, PK-12.			X		
5.6. *Policies and Procedures*. Students with gifts and talents participate in regular and gifted education programs that are guided by clear policies and procedures that provide for their advanced learning needs (e.g., early entrance, acceleration, credit in lieu of enrollment).	5.6.1. Educators create policies and procedures to guide and sustain all components of the program, including assessment, identification, acceleration practices, and grouping practices, that is built on an evidence-based foundation in gifted education.	X				
5.7. *Career Pathways*. Students with gifts and talents identify future career goals and the talent development pathways to reach those goals	5.7.1. Educators provide professional guidance and counseling for individual student strengths, interests, and values.			X		
	5.7.2. Educators facilitate mentorships, internships, and vocational programming experiences that match student interests and aptitudes.		X			

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Gifted Education Programming Standard 6: Professional Development

Introduction

Professional development is essential for all educators involved in the development and implementation of gifted programs and services. Professional development is the intentional development of professional expertise as outlined by the NAGC-CEC teacher preparation standards and is an ongoing part of gifted educators' professional and ethical practice. Professional development may take many forms ranging from district-sponsored workshops and courses, university courses, professional conferences, independent studies, and presentations by external consultants and should be based on systematic needs assessments and professional reflection. Students participating in gifted education programs and services are taught by teachers with developed expertise in gifted education.

Gifted education program services are developed and supported by administrators, coordinators, curriculum specialists, general education, special education, and gifted education teachers who have developed expertise in gifted education. Since students with gifts and talents spend much of their time within general education classrooms, general education teachers need to receive professional development in gifted education that enables them to recognize the characteristics of giftedness in diverse populations, understand the school or district referral and identification process, and possess an array of high quality, research-based differentiation strategies that challenge students. Services for students with gifts and talents are enhanced by guidance and counseling professionals with expertise in gifted education.

Standard 6: Professional Development **Description:** All educators (administrators, teachers, counselors, and other instructional support staff) build their knowledge and skills using the NAGC-CEC Teacher Standards for Gifted and Talented Education and the National Staff Development Standards. They formally assess professional development needs related to the standards, develop and monitor plans, systematically engage in training to meet the identified needs, and demonstrate mastery of standard. They access resources to provide for release time, funding for continuing education, and substitute support. These practices are judged through the assessment of relevant student outcomes.		Indicators				
		Y	**U**	**N**	**D**	**N/O**
Total Indicators for Standard 6		**6**	**2**	**2**	**2**	**0**
Student Outcomes	**Evidence-Based Practices**					
6.1. *Talent Development*. Students develop their talents and gifts as a result of interacting with educators who meet the national teacher preparation standards in gifted education.	6.1.1. Educators systematically participate in ongoing, research-supported professional development that addresses the foundations of gifted education, characteristics of students with gifts and talents, assessment, curriculum planning and instruction, learning environments, and programming.*	X				
	6.1.2. The school district provides professional development for teachers that models how to develop environments and instructional activities that encourage students to express diverse characteristics and behaviors that are associated with giftedness.	X				
	6.1.3. Educators participate in ongoing professional development addressing key issues such as anti-intellectualism and trends in gifted education such as equity and access.				X	
	6.1.4. Administrators provide human and material resources needed for professional development in gifted education (e.g. release time, funding for continuing education, substitute support, webinars, or mentors).		X			
	6.1.5. Educators use their awareness of organizations and publications relevant to gifted education to promote learning for students with gifts and talents.	X				

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Standard 6: Professional Development **Description:** All educators (administrators, teachers, counselors, and other instructional support staff) build their knowledge and skills using the NAGC-CEC Teacher Standards for Gifted and Talented Education and the National Staff Development Standards. They formally assess professional development needs related to the standards, develop and monitor plans, systematically engage in training to meet the identified needs, and demonstrate mastery of standard. They access resources to provide for release time, funding for continuing education, and substitute support. These practices are judged through the assessment of relevant student outcomes.		Indicators				
		Y	U	N	D	N/O
Student Outcomes	**Evidence-Based Practices**					
6.2. *Socio-emotional Development*. Students with gifts and talents develop socially and emotionally as a result of educators who have participated in professional development aligned with national standards in gifted education and National Staff Development Standards.	6.2.1. Educators participate in ongoing professional development to support the social and emotional needs of students with gifts and talents.			X		
6.3. *Lifelong Learners*. Students develop their gifts and talents as a result of educators who are life-long learners, participating in ongoing professional development and continuing education opportunities	6.3.1. Educators assess their instructional practices and continue their education in school district staff development, professional organizations, and higher education settings based on these assessments.				X	
	6.3.2. Educators participate in professional development that is sustained over time, that includes regular follow-up, and that seeks evidence of impact on teacher practice and on student learning.			X		
	6.3.3. Educators use multiple modes of professional development delivery including online courses, online and electronic communities, face-to-face workshops, professional learning communities, and book talks.	X				
	6.3.4. Educators identify and address areas for personal growth for teaching students with gifts and talents in their professional development plans.		X			
6.4. *Ethics*. Students develop their gifts and talents as a result of educators who are ethical in their practices.	6.4.1. Educators respond to cultural and personal frames of reference when teaching students with gifts and talents.	X				
	6.4.2. Educators comply with rules, policies, and standards of ethical practice.	X				