

---

# **Program Review: Advanced Learning/ Spectrum**

October 2017

Eric M. Anderson, PhD  
Research & Evaluation Department

---

# Outline

## 1. Phase I: Descriptive Analysis

- Background
- Student data
- Key issues raised by stakeholders

## 2. Phase II: Design Study

- Research design
- Service delivery models
- Instructional strategies (pedagogy)

## 3. Conclusions

- Literature Review
  - SPS current state
  - Recommendations
-

---

Background

Student data

Key issues raised by stakeholders

# **DESCRIPTIVE ANALYSIS**

---

# Background

## Highly Capable Cohort (HCC)

- Seattle Public Schools offers Highly Capable Services for students who have been evaluated for and designated as Highly Capable. The Highly Capable Cohort (HCC) is a self-contained service option available to HC students in grades 1-8.

## Advanced Learning: Spectrum

- The Spectrum program was launched by SPS as a second tier program for advanced students who did not meet the eligibility criteria for Highly Capable.<sup>1</sup> Originally designed to mimic the format of HC services, Spectrum students were offered self-contained services at regional Spectrum sites and all middle schools.
- Since the 2016-17 school year, the regional Spectrum elementary and K-8 sites no longer offer full time self-contained classrooms for identified students.

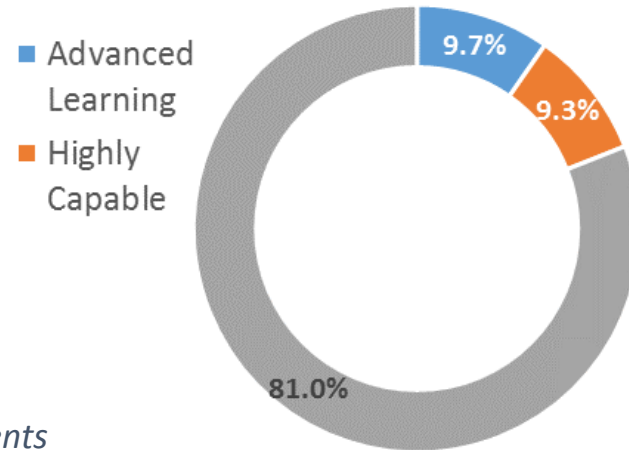
<sup>1</sup> Eligibility criteria are set by each District. For HC, SPS requires cognitive scores at or above the 98th percentile and achievement scores (math and reading) at or above the 95th percentile. For Spectrum/Advanced Learners, the criteria are 87th percentile in both cognitive and achievement.

---

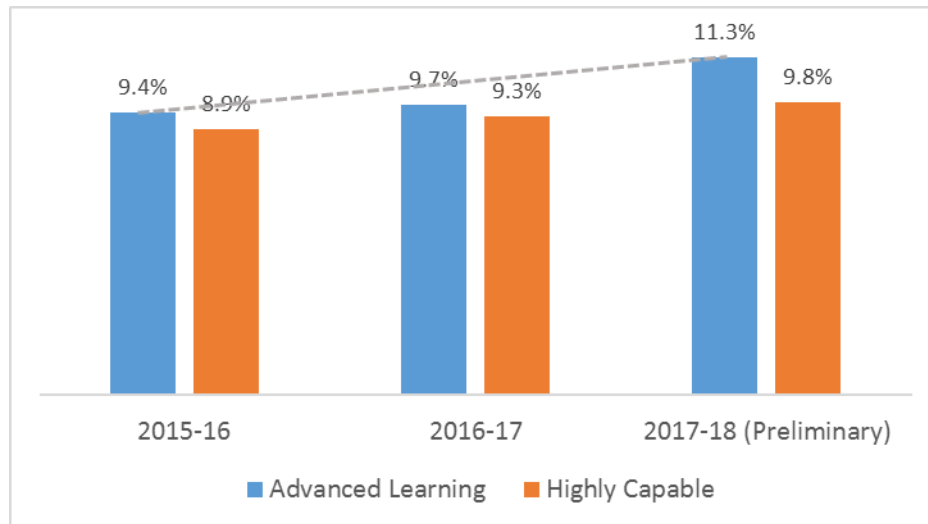
# Student Data: Enrollment

One in five SPS students (20%) identified as eligible for Advanced Learning (2016-17)

2016-17 Advanced Learning Eligibility, Grades 1-12



Percent of Advanced Learning and HC Eligible Students

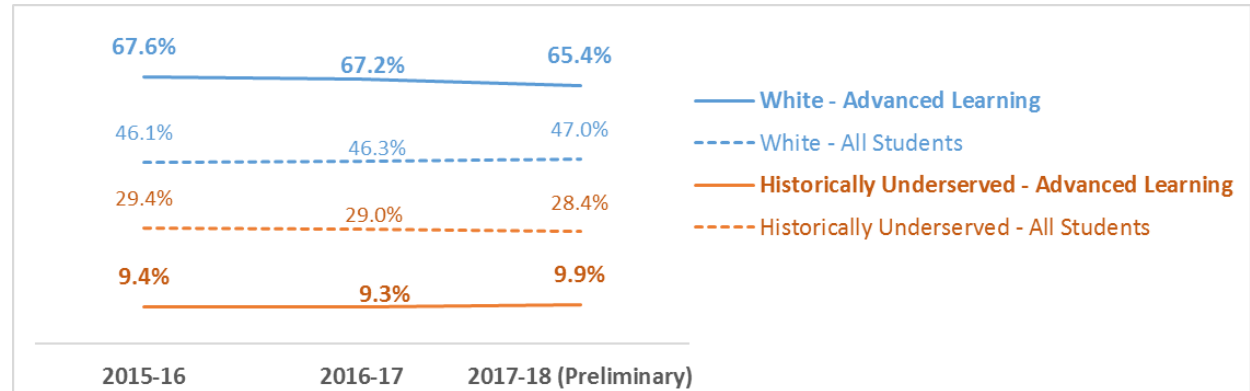


Percentage of AL/HC eligible students is increasing (based on projections for 2017-18)

# Student Data: Enrollment

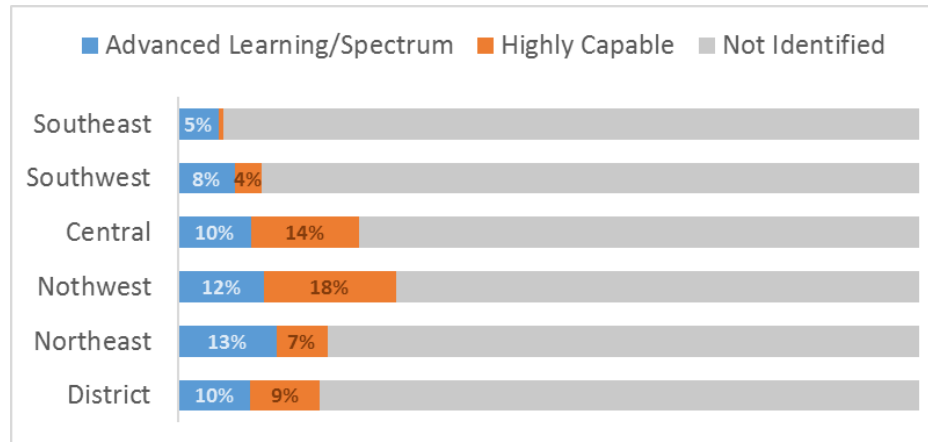
Disproportionality between white students and historically underserved students has not decreased.

*Proportion of White and Historically Underserved\* Students (3-Year Trend)*



*\*Historically Underserved: Black/African American, Hispanic/Latino, Native American, Pacific Islander*

*Advanced Learning Eligibility by Region, 2016-17*

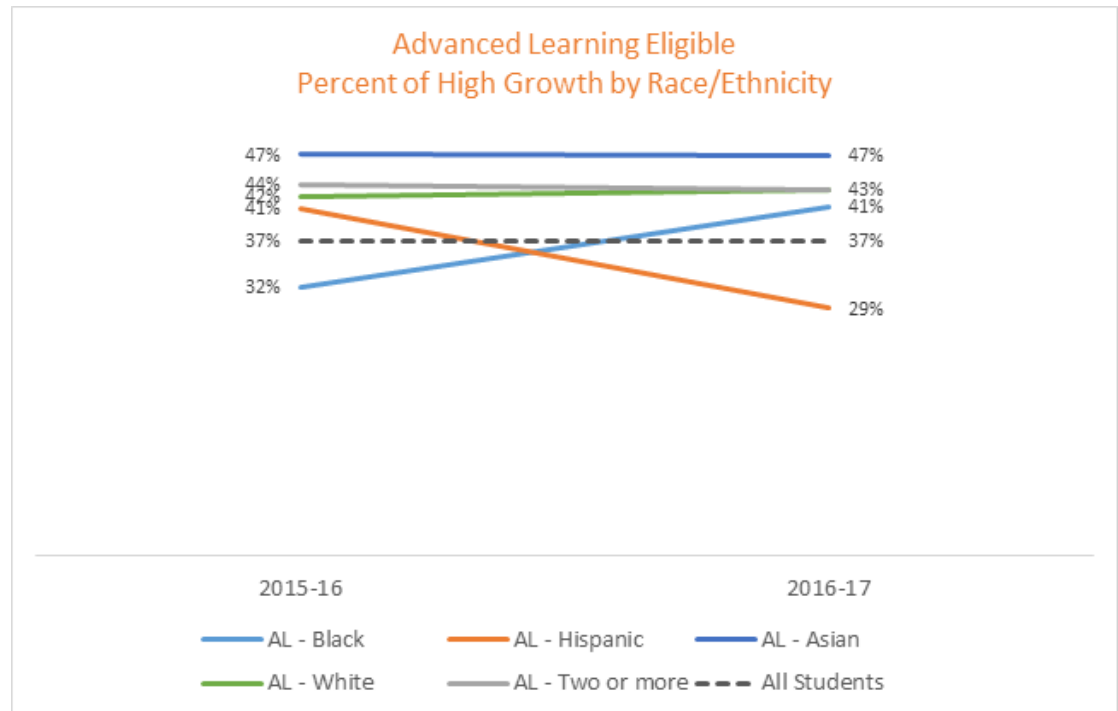


Northwest region has the highest concentration of AL/HC students (30%), while the Southeast region has the lowest (6%).

# Student Data: Achievement

- Proficiency rates for AL/HC identified students are over 90%. Historically Underserved AL eligible students perform equally as White and Asian peers.
- Lower percentages of AL-eligible Black and Hispanic students achieve high growth on SBAs. In 2015-16 only 32% of Black AL students were “high growth (n=95), and in 2016-17 only 29% of Hispanic AL students were high growth (n=139). These results are lower than the district average for ALL students (37%)

*Advanced Learning Eligible Percent of High Growth by Race/Ethnicity*



---

# Key Issues Raised by Stakeholders

## Stakeholders want...

1. High quality, rigorous instruction for students not in self-contained environments
2. Solutions to ensure racial equity within Advanced Learning
3. A cohesive plan to guide the future of Advanced Learning programs and supports

## District actions...

1. Program Review focused on improving instruction and programmatic design
  2. Array of approaches implemented by Advanced Learning to improve equity
  3. Board approved Action Plan for Advanced Learning
-



# Key Issue: Ensuring Equity

*Strategies employed in 2016-17 to increase access to Advanced Learning programs*

Identification Strategies	Professional Development and Outreach Strategies
<ul style="list-style-type: none"><li>• Each and every student was able to test for eligibility; there are no pre-qualifications</li><li>• Scrutinized referrals from ELL students for characteristics such as rapid language acquisition</li><li>• Expanded referral window</li><li>• 2<sup>nd</sup> grade targeted universal testing at 32 Title I elementary schools; invitations for continued screening extended to 67 parents</li><li>• Follow up testing completed at Title I students' school sites during the school day</li><li>• "Special consideration" in the eligibility process as noted in our Superintendent Procedures and practiced by the MSC (Multidisciplinary Selection Committee)</li><li>• Current teachers may recommend students for testing, triggering an invitation to parents to refer. Email and phone follow-up if no response to invitation.</li></ul>	<ul style="list-style-type: none"><li>• Differentiation workshops at the central office and satellite sites</li><li>• Collaboration with the Rainier Scholars Program (contacted applicants to generate referrals for previously unidentified high potential students of color)</li><li>• Site visits and presentations to Title I schools regarding identification and referral of students for AL services</li><li>• Website information and videos and disseminated to local and social media outlets</li><li>• Eligibility forms and first day packet announcement (translations in nine languages)</li><li>• AL representation on the Equity and Race Advisory Committee (ERAC)</li><li>• AL representation on the Southeast Seattle Education Consortium (SESEC)</li></ul>

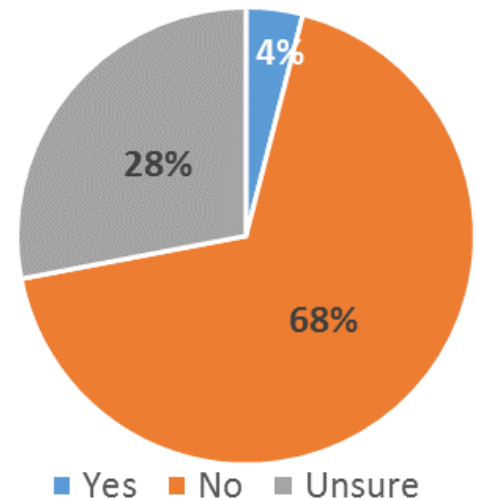
# Principal Perspectives

*Should the district should continue to designate schools as Spectrum sites?*

**Only 4% of principals said the District should continue designating certain schools as “Spectrum schools.”**

Principals cited two main concerns:

- Maintaining the Spectrum site designation perpetuates inequities, benefiting families privileged in terms of race and income.
- All schools should be able to accommodate advanced learners within a Multi-Tiered systems of Supports (MTSS) framework.



---

Research Design

Service Delivery Models (Programs/Grouping)

Instructional Strategies (Pedagogy)

## **DESIGN STUDY:**

# **Findings from Literature Review and School Site Visits**

---

# Design Study: Focus/Purpose

- **Focus**: how best to meet the learning needs of academically advanced learners?
  - What does the academic research say?
  - How do SPS school leaders and educators approach this?
  - What are the challenges – and are we currently successful?
- **Purpose**: provide a research-basis for improving instruction and programs for advanced learners
  - How can we better support school leaders, educators, and students?
  - What investments (curriculum, training, etc.) may be necessary?
  - What are the implications for implementing MTSS in every school?

---

# Research Design

## Literature Review

- Partnership with UW College of Education – Dr. Nancy Hertzog, Dr. Sakhavat Mammadov
- *Key Question:* What are identified research-based instructional best practices to ensure advanced learners are challenged, engaged in learning, and achieving strong academic growth?

## School Site Visits

- Seven (7) schools selected based on high growth for Level 4 Students (SBA)
- *Data Collection:* Interviews with principals and teachers; focus groups with students
- *Key Question:* How do our schools meet the needs of students above or well above standard? To what extent are they successful?

---

# Service Delivery Models

---

# Administrative Structures

State of Washington provides four different administrative structures for creating specialized services for identified highly capable students:

- **General Education Classroom-Based Services/Programs**
  - e.g., Ability grouping (clustering), Differentiation strategies
- **Acceleration Services/Programs**
  - e.g., Accelerated course sequences, “Walk-to-Math”
- **Unique Highly Capable Program (HCP) Services**
  - e.g., self-contained classrooms, HCP schools
- **Non-Traditional Services/Programs**
  - e.g., mentorships, partnerships (e.g., higher education)

---

# Acceleration

## LITERATURE

Two general categories of academic acceleration:

- (a) **Subject-based acceleration**, which exposes students to advanced content and skills before their expected grade level, and
- (b) **Grade-based acceleration**, which comprises options for students to skip the grades in the K-12 school system (Rogers, 2015).

- Research has shown that academic acceleration is educationally appropriate and necessary (Colangelo & Davis, 2003; Lubinski, 2004).
- Although the research on acceleration is overwhelmingly positive, decisions about individual students must be made with caution (Rogers, 2015).
- Assessment practices are critical for informing instructional decisions, including acceleration



---

# Ability Grouping

## LITERATURE

Neihart (2007) defined **ability grouping** as “any arrangement that attempts to place students with similar levels of ability in instructional groups”

- Academic benefits for advanced learners are well-documented, but ability grouping is controversial and practitioners should be cautious.
  - *Methodologically flawed studies*
  - *May ignore detrimental psychosocial outcomes* – e.g., student self-perceptions may decrease with a highly capable social reference group
  - *Link-minded fallacy*: It is a misnomer to think that gifted students have to be with other gifted students to feel connected.
- **It is the quality of instruction and instructional resources** that impacts students’ academic growth the most (Neihart & Yeo, 2018).

# Ability Grouping

## SITE VISITS

Many SPS schools use a **Walk-to-Math** model for AL students.

- Parents advocate for it. Schools often view ability grouping as beneficial to advanced learners and easier for teachers.
- Some schools are trying to scale it back for various reasons...
  - *The principal) doesn't want to have as many walk to math ... The continuity of keeping your own kids (all day) is a lot more beneficial for many of the kids.*
  - *Walk-to-Math gives kids the impression that smartness is fixed ...*
  - *When kids experience a racially segregated school, then they start to question what does the school believe about me, because I don't see any kids like me in that class.*

Most teachers use some form of **ability grouping** in heterogeneous classrooms, particularly small group instruction and stations or centers

- *I often pull a small group that's ready for something more challenging ... and have them work on that instead of the daily assignment.*
- *In my math stations I have them grouped according to ability.... So that they automatically enter at a point that's challenging them ...*

---

# Instructional Strategies (Pedagogy)

---

# Deeper/Inquiry Based Learning

## LITERATURE

- A great deal of research supports **inquiry learning pedagogies** for all students (Hertzog, 2017).
- Different modes of inquiry elevate thinking and problem solving (VanTassel-Baska, 2012).
- **Higher level questioning strategies** are effective with all students, but crucial for advanced learners (VanTassel-Baska & Brown, 2007).
- **Authentic problem solving** helps students to understand real world applications is desirable for advanced learners (Tomlinson et al., 2002).
  - Authentic **mathematical problem-solving tasks** have the highest level of challenge for all students (Lesh & Zawojewski, 2007).
  - Research has shown that “**practicing as professionals**” is an important means of motivating students in a given subject area (Mammadov & Topcu, 2014).

# Deeper/Inquiry Based Learning

## SITE VISITS

- **Deeper Learning**: Some teachers emphasized the importance of going deeper within grade level rather than skipping too far ahead.
- Teachers described using **project based learning** to engage students.
  - *The project is to apply a system of equations... It ties a lot of the learning we've done mathematically into this project, so it's so relevant ... it's very structured.*
  - *Something we did school wide this year was engineering challenges, which we saw a lot of our more advanced learners really rise to the occasion and be really engaged*
- Students in every school expressed interest in more **hands-on projects**
  - *I really like to have a hands-on learning experience, like building and engineering.*
  - *Most of the time, we just use paper and a pencil... Last year, one of my favorite science units was models and designs because there was so much hands on stuff.*
  - *I like big projects ... where you get a lot of independence*

---

# Enhanced Student Autonomy

## LITERATURE

- Students have a **need for autonomy** to thrive in learning settings
  - Autonomy is an important precursor of academic motivation.
  - When a student is intrinsically motivated, creative outcomes are most likely to occur.
  - To be intrinsically motivated students should have choices in their learning.
- Students benefit when teachers support their autonomy (Reeve, Ryan, Deci, & Jang, 2008). Reeve et al. (2008) listed **empirically validated teacher behaviors to support student autonomy**. *For example:*
  - Spending time listening to students' voice during instruction
  - Asking what the students need
  - Allowing time for students to work independently and in their own way
  - Being responsive to student-generated questions, comments, suggestions, etc.

---

# Enhanced Student Autonomy

## SITE VISITS

- Some students expressed that they like **independent, self-directed learning** opportunities.
  - *I like independent work where you're not really following the teacher, you're kind of doing it on what you think.*
  - *It's not really a lecture or where you have to listen to the teacher talk for half of the time. ... You just given directions and you kind of go on your own in your own way and everyone has different outcomes to anything we do.*
- Several teachers emphasized **student self efficacy** and **growth mindset** in defining success for advanced learners
  - *They not only track their own growth, but they're setting the goals.*
  - *They realize that they are in control of their own learning, with my help.*
  - *Having them advocate for themselves... so that when they get to high school they can really be successful.*

# Differentiation

## LITERATURE

The National Association for Gifted Children defines differentiation as “modifying curriculum and instruction according to content, pacing, and/or product to meet unique student needs in the classroom”

- One of the primary factors affecting the lack of differentiation in classrooms is the **lack of teacher training**.
- Teachers **tend to focus on differentiating for struggling students**, not advanced students (Inman & Roberts, 2018).
- Teachers should consider **differences in student interests and motivation** when differentiating instruction (Tomlinson et al., 2003).
- **Student autonomy** to select their own project topics and share their ideas about makes them more engaged (Wolfe, 2001).



# Differentiation

## SITE VISITS

Teachers raised several challenges differentiating for advanced learners

- The **wide range of skills**, even among AL students, can create challenges
  - *It can be difficult to keep some kids challenged. There are some bright kids... some of are off the charts ... There's a lot of different learning styles.*
- Some focused on the **lack of clear strategies, resources, and training**
  - *I would like to see more trainings on differentiation that's by content area*
  - *Teachers want to make sure kids at all levels are challenged ... but it comes down to resources, ideas, strategies. If you don't have them, you won't teach them...*
- Others emphasized that **not all teachers are equally effective**
  - *I think that every teacher thinks differentiation is part of their job responsibilities... Some are better at it than others. Some it comes more naturally than others.*

---

# Personalized (Adaptive) Learning

## LITERATURE

According to the U.S. Department of Education (2016), personalized learning refers to “instruction in which the pace of learning and the instructional approach are optimized for the needs of each learner.”

- **Adaptive learning** provides personalized learning, assessment, and feedback through the use of technology (Moeller & Reitzes, 2011).
- Research suggests that students, regardless of age, are **motivated to learn new technology-based tasks** (Bruder, Blessing, & Wandke, 2014).
- Technology can support students who’ve mastered the content and need **opportunities to work on more advanced topics** and tackle more difficult problems.

# Personalized (Adaptive) Learning

## SITE VISITS

- About a third of teachers discussed the use of technology/software-based tools to support differentiation
  - *I think (technology) allows for a lot more differentiation. For example, everybody can be using one program or one app and it's the teacher is pre-selecting which level is right for each kid, so that it's automatically differentiated for the kids*
  - *They're so much more engaged (online). I can give them the same problem ... on (a computer), and all of a sudden this is the most exciting problem they've ever done ...*
- One principal explained that technology makes it easier for teachers – alleviating the need to create unique assignments for each student
  - *I don't want to see any more work packets. ...Kids can go for 20 minutes a night (using the software program) at their level. It's differentiated homework without even thinking about it. So, that's off the teacher's plate...*

---

# Social Emotional Learning

## LITERATURE

- Social emotional needs of advanced learners are important factors to their success (Olszewski-Kubilius, et al., 2015).
- Some researchers argue that advanced students may be particularly vulnerable to social and emotional problems (Peterson, 2009)
- However a recent comprehensive review suggested that serious social and emotional issues appear no more or less often among highly capable students (Neihart, Pfeiffer, & Cross, 2015).
- Social emotional difficulties that arise are likely to be due to a mismatch between a student and his/her learning environment (Rinn, 2018).

---

# Social Emotional Learning

## SITE VISITS

- Some principals and teachers emphasized the specific importance of **social emotional skills** and **empathy** for advanced learners
  - *A lot of advanced learners can really **struggle with relationships**, and the importance of being collaborative learners.*
  - *As much as we stress academics, it's also **the social piece** ... wanting to come to school... It's really making sure they have some **trusted companions***
  - *Socially, with some of my advanced learners, I'd like to see them become **more empathetic** for students that struggle with learning.*
  - *A few students... they don't really notice it, but **they behave in an arrogant way**. Because they are so proud of what they can do academically...*

---

# Conclusions

The notion that there is a distinct way of developing curriculum that only benefits identified gifted children has proven to be false. The improvements in educational programming and instruction that benefit advanced learners would also benefit all students

---

# Conclusions – Literature Review

- Serving the needs of advanced learners requires a **holistic approach**.
- A **variety of instructional strategies**, from inquiry-based learning to adaptive personalized learning, must be available to teachers.
- **Assessments** are critical to informing instructional decision-making
- **Appropriate levels of challenge and acceleration** are an important component of curricular/instructional solutions for advanced students.
- Advanced learners, like all students, need to **feel competent, connected to others, and have a sense of autonomy** in their learning.
- Advanced learners must be guided by the professional expertise of **highly trained teachers** to reach their highest capabilities
- Effective teachers of highly capable or advanced students must have both **strong subject area expertise** and an understanding of and appreciation for the **special needs of these students**.

# SPS Current State – Site Visits

## Student Perspectives

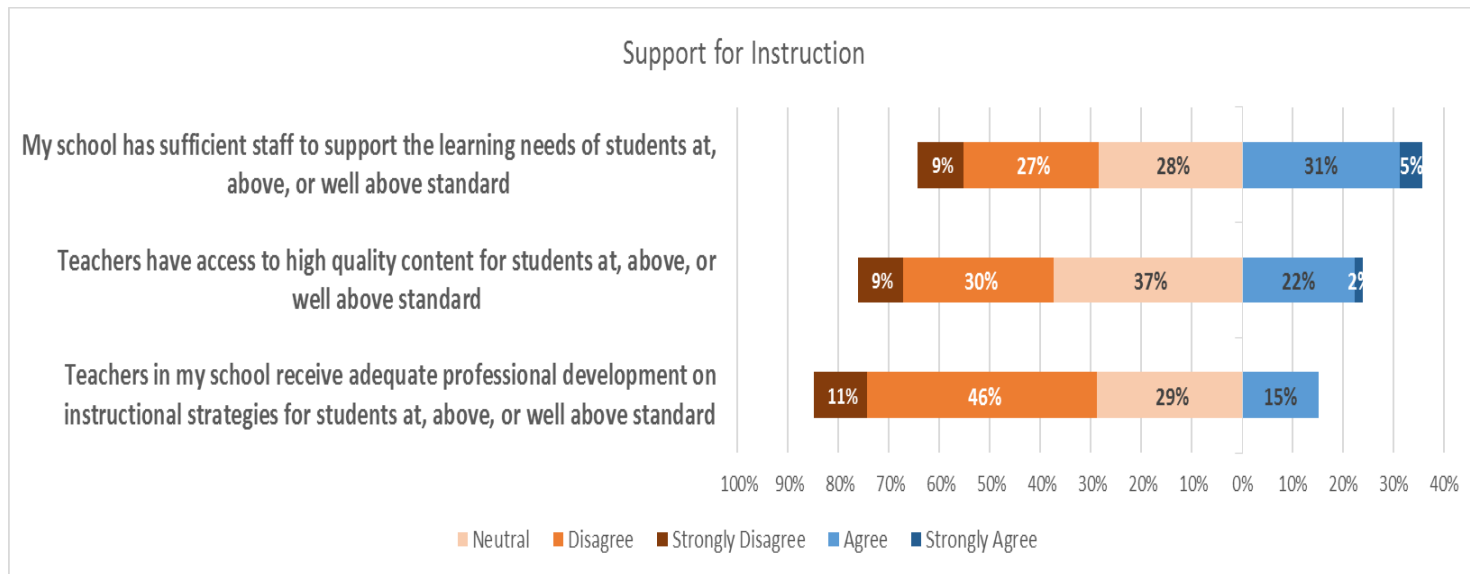
- It was clear that students frequently do NOT feel challenged or engaged, but this was more pronounced in some schools.
- A primary concern expressed was **spending too much time on a topic they already mastered**
  - *We're moving kind of slowly, and ... it's just review, it's not like anything new*
  - *So far, we've been focusing on surface area, but we're going to be doing that for like the next week... and we'll figure it out in like a day.*
- The other major concern was **frequent use of worksheets and non-interactive lessons**
  - *I don't like it when the teacher just tells you something and expects you to learn from that, like I want to do something and actually learn it.*
  - *We do a lot of worksheets... I don't think we learn as much as we could.*
  - *Everyone has to do the same worksheet... Some do it the wrong way, and since we have so many worksheets, they keep practicing the wrong way. ...*



# Current State – Site Visits

- A significant challenge is the **lack of curricular resources and training** for project-based, deeper inquiry and differentiations strategies
  - *If your teaching fractions how do you dig deeper and challenge those kids? That becomes a challenge because you have to create something more project based.*
  - *The really good lessons that truly differentiate, which are hand-on, project-based inquiry, take so much time and effort. ... We need trainings to do it effectively.*
  - *I would like to see more trainings on differentiation that's by content area*

## Principal perspectives on support for teachers



---

# Preliminary Recommendations

To fully support **advanced learners and all students across the learning spectrum**, SPS should research and gradually implement a more systemic approach to support each the each of following in all schools:

- **Deeper learning** (e.g., project-based) that is standards-based, rigorous
- **Differentiation techniques** for mixed ability classrooms
- Use of common **assessments** to support instructional decision-making
- Use of **technology** to support personalized, adaptive learning
- Creating a **blended, inclusive school culture** and social climate
- **MTSS** system that supports all students, **including advanced learners**

- *We need to shift (our culture) to think that students who are struggling can be advanced learners, and their struggle would be staying engaged or being challenged... We're able to do it, but I think we need the resources. – SPS Principal*