MARYLAND STATE DEPARTMENT OF EDUCATION
EQUITY AND EXCELLENCE

Karen B. Salmon, Ph.D.
State Superintendent of Schools

TO: Members of the State Board of Education

FROM: Karen B. Salmon, Ph.D.

DATE: January 28, 2020

SUBJECT: Update on Student Support Initiatives and Research on Achievement Gaps

PURPOSE:

To provide an update to the State Board on the 2007 *Report of the Task Force on the Education of Maryland's African American Males,* the 2019 *Task Force on Student Discipline Regulations*, and other student support initiatives.

BACKGROUND/HISTORICAL PERSPECTIVE:

Convened by the Maryland K-16 Leadership Council (University System of Maryland, Maryland Higher Education Commission, and the Maryland State Department of Education (MSDE)), the Task Force on the Education of Maryland African American Males was established with the report released in 2007. The purpose of the Task Force was to "evaluate Maryland's progress in addressing persistent academic achievement problems imperiling African-American boys and men." The Task Force was co-chaired by Dunbar Brooks, Vice-President of the Maryland State Board of Education, and Orlan Johnson, Treasurer of the University System of the Maryland Board of Regents.

In January 2019, the State Board established the Task Force on Student Discipline Regulations, chaired by Dr. Vermelle Greene, Member of the State Board of Education, to make recommendations to the State Board on any regulatory, policy, or guidance changes that should be adopted to improve the disciplinary environment in Maryland schools in order to provide every student with a safe school and a world class education.

EXECUTIVE SUMMARY:

The MSDE has implemented multiple initiatives, conducted professional development, assisted local school systems, and researched best practices. The presentation will include an update on the history of MSDE's efforts around recommendations, highlight selected initiatives and accomplishments, and indicate practices that are ongoing and some that have been discontinued. Additionally, we will present a review of the literature on factors associated with academic achievement gaps.

ACTION:

No action is necessary, for discussion only.

Update on Student Support Initiatives

State Board of Education

January 28, 2020

Highlights

- 2007 *Report of the Task Force on the Education of Maryland's African American Males*
- 2019 *Task Force on Student Discipline Regulations*
- Other student support initiatives
- Factors associated with academic achievement gaps

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Report of the Task Force on the Education of Maryland's African American Males (2007)

- Skilled, culturally competent teachers
- High standards and academic opportunity
- In-school support
- Family and community support
- Prevention and intervention services
- College preparation and financial assistance

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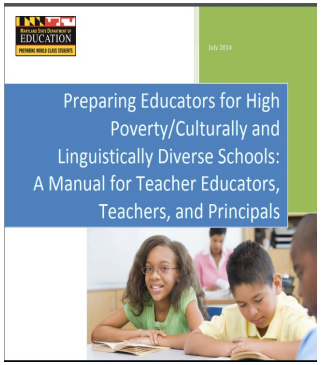
Maryland Teaching Consortium

- The Maryland Teaching Consortium(MTC) hosted six meetings a year from 2010 to 2014 and a summer institute to discuss topics such as cultural and classroom context and issues surrounding poverty.
- The MTC partnered with ten Institutions of Higher Education (IHEs) and with Local School System (LSS) Professional Development Schools under the MSDE Division of Educator Effectiveness and Program Approval.
- By 2014, the MTC initiative produced 254 preservice teachers.
- The work of the MTC contributed to the development of the manual: *Preparing Educators for High Poverty/Culturally and Linguistically Diverse Schools: A Manual for Teacher Educators, Teachers, and Principals.*



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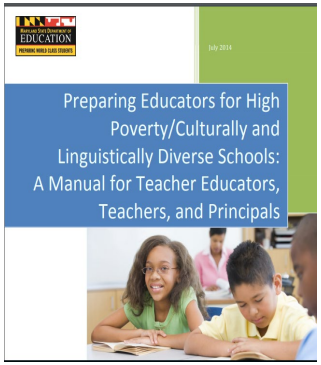
Recommendation: Skilled, culturally competent teachers

Preparing Educators for High Poverty/Culturally and Linguistically Diverse Schools

Designed a manual to provide technical assistance for high poverty/culturally and linguistically diverse schools across Maryland.



The guide contained three components:

- Knowing Students;
- Understanding Oneself in the Context of Poverty/Cultural and Linguistic Diversity; and
- Teaching in the Context of Poverty/Cultural and Linguistic Diversity.

As part of the Maryland Teaching Consortium, these initiatives were designed to address the need to increase teacher awareness of their own biases and are now being incorporated into the Maryland

Competencies for Educator Preparation Programs.

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Maryland Approved Alternative Preparation Programs

- Tailored to meet the staffing needs of Maryland school systems
- Alternative preparation programs attract career changers and allow an individual to begin teaching and receiving a salary much earlier in their program, and they usually cost much less than traditional routes.
- Resident Teacher Certificate staff can be issued the Standard Professional Certificate; candidates need a successful residency with coaching/mentoring, additional coursework, and completion of all program requirements.

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A 26 year partnership with schools across Baltimore, with more than 1,100 alumni and corps members across the city.

The goal of TFA/Baltimore is to provide programming that sustains a lifelong career in fighting for educational equity.

Teacher Academy of Maryland

- Prepares high school students for further education and careers in the education profession.
- Offered in 22 of Maryland's 24 local school systems.
- TAM students have the potential to earn three college credits while still in high school provided they attend a higher education institution that awards such credits.
- TAM students can enroll directly in 13 community colleges statewide that offer articulated AA degrees

The Teacher Academy of Maryland (TAM) is a Career and Technology Education (CTE) program of study that seeks to address the persistent teacher shortage challenge by creating a pipeline of teacher candidates.

Teacher Academy of Maryland

Students Enrolled in Teacher of Maryland (TAM) Courses
(2018-2019 School Year)

Male	Female	Total	Hispanic	American Indian and Pacific Islander	Asian	African American/ Black	White	CTE Course Title
704	3494	4198	1095	905	489	1701	2088	Human Growth and Development through Adolescence
84	596	680	40	18	30	217	459	Teaching as a Profession
92	806	898	56	22	15	345	555	Foundations of Curriculum and Instruction
63	421	484	20	9	18	221	250	Education Academy Internship

Teach In Maryland Rising Toward Excellence

Conference hosted by MSDE October 17, 2019

- Focused on inspiring a diverse population of Maryland public high school students to pursue a career in teaching throughout the State.
- Recruited outstanding students from various ethnic, racial, and gender groups, who are currently underrepresented in the teaching profession in Maryland.
- Attended by more than 250 students from 17 local school systems
- Session Topics included:

  Let's Have a Serious Conversation about Recruiting Black Males into the Teaching Profession
  Bowie State University, Loyola University Maryland, and
  University of Maryland, Baltimore County

  Creating an Equitable and JUST classroom
  Richard Warren-Maryland Teacher of the Year

  Teaching- The Profession That Makes All Others Possible
  MSDE, Calvert, Frederick, Harford, and Worcester County Public Schools

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Lead Higher Initiative

The Lead Higher Initiative is designed to close equity gaps for lower income students and students of color in its high schools' most rigorous courses.

- Ten Maryland school systems are participating in the Lead Higher program to increase the participation of underrepresented, academically prepared students in Advanced Placement (AP) classes
- One cohort of schools in each: Baltimore City, and Calvert, Cecil, Dorchester, Prince George's, Queen Anne's, Talbot, Washington, and Wicomico Counties.
- Two cohorts of schools: Montgomery County
- Over three years, approximately 1,714 qualified students in 51 participating schools have been identified and enrolled in AP classes.
- The Lead Higher initiative for states was created in April 2015 by a consortium that includes Equal Opportunity Schools (EOS), College Board, International Baccalaureate, and lead philanthropic partner, the Jack Kent Cooke Foundation.

GEAR UP Maryland

The MSDE was awarded a $13.2 million GEAR UP grant in September 2014. The Maryland GEAR UP grant is a six-year grant, 2014 through 2020.

Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP)

Maryland's GEAR UP objectives are:

Improve GEAR UP students' performance in mathematics and English Language Arts to facilitate high school graduation and college matriculation.

GEAR UP cohort students will indicate a greater awareness of college admissions requirements and opportunities.

GEAR UP parents/guardians will be able to demonstrate knowledge of requirements for high school graduation, postsecondary options, and acquiring financial aid for their student(s)

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The GEAR UP program in Maryland has 2,213 students .

Next One Up Local Initiative

- Next One Up is a sub-grant of Next Generation Scholars and was founded in 2009. Next Generation Scholars offers a college preparatory curriculum, psychological services, leadership training and supportive social services. All elements of the programs are approached through the lens of ethnic studies and social justice.
- Next One Up targets African American males in Baltimore City. It serves ages 13-24 which means the program will continue to support NGS students after they graduate from high school.
- The program currently has 34 African American Males. These young men receive long-term mentoring and other services required by the grant and beyond.
- Next One Up has a track record of a 100% graduation rate for its students. Further, all graduates have been accepted in two- and four-year schools.

2009 - 2019 NEXT ONE UP TEN YEARS

Advancement Via Individual Determination (AVID)

AVID has been impacting Maryland schools for over 22 years. There are currently eight school systems with AVID and 139 AVID sites in Anne Arundel, Baltimore, Cecil, Charles, Harford, Montgomery, Prince George's and Washington Counties.

AVID is an elective class that provides extra support for students as they prepare for college. AVID lessons are designed around teaching tenacity, grit, perseverance, and persistence.

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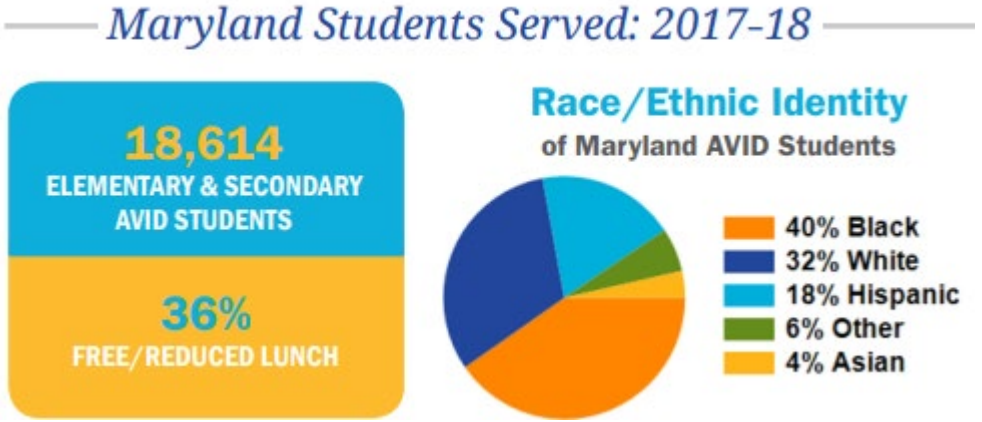

Reginald F. Lewis Museum of Maryland

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REGINALD F. LEWIS MUSEUM
of Maryland African American History & Culture

The Maryland State Department of Education Partnership with the Reginald F. Lewis Museum of Maryland African American History and Culture

The objective of this unique partnership was to create a climate of understanding and appreciation supportive of Maryland African American history, culture and art. Through both museum-based and school-based interactive programs and in outreach activities, the partnership curriculum was designed to reach every Maryland student, in every classroom, in every school. The museum opened in 2005.

Youth Mental Health First Aid in Maryland

	# Trained
2014-2015	437
2015-16	787
2016-17	931
2017-18	2371
2018-19	2367
Total	6,893

- There have been **6,893** persons trained as "First-Aiders" over the duration of the Maryland Project Aware (Advancing Wellness and Resiliency Education).
- There have been **381** Instructors trained over the duration of the grant.
- The training provides participants an awareness as to when a young adult may be at risk for harming themselves or others.

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School-Based Health Centers

School-based health centers provide comprehensive health care and mental health services to students whose access to quality healthcare may be limited.

- One might think of an SBHC as "doctor's office in a school".
- Currently there are 84 programs in 12 of Maryland's 24 school systems.
- The SBHC programs employ a primary care provider (a pediatrician, nurse practitioner, or physician assistant) who works cooperatively with the school nurse to screen, diagnose, treat, and refer children for medical conditions.
- The link between children's physical, emotional, and mental health is directly related to academic success in the school setting. Students of various ethnicities may need additional supports in terms of student health, well-being, and academic success.

Local County	Number of SBHCs
Baltimore City	17
Baltimore County	13
Caroline County	9
Dorchester County	4
Frederick County	1
Harford County	5
Howard County	10
Montgomery County	13
Prince George's County	4
Talbot County	3
Washington County	3
Wicomico County	2
Total SBHC Programs (FY20)	84

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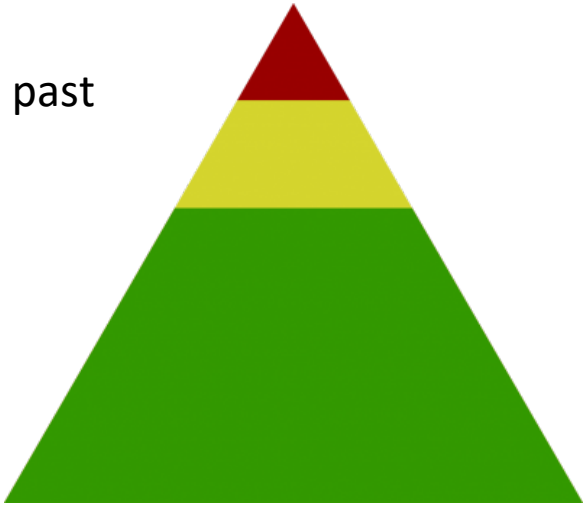
Recommendation: In-school support

Integrated Tiered System of Supports(ITSS)

A Multi-Tiered framework to assist local school systems in adopting a continuum of evidence based supports that support ALL students and every level of need

Programs addressing student's social, emotional, and behavioral well being has been used in Maryland for the past 20 years.

- Positive Behavioral Interventions and Supports
- Trauma Informed Practices
- Restorative Practices
- Peer and Community Mediation
- Mental Health and Wraparound Services



Family, Community, and Stakeholder Engagement

- Conduct biannual meetings with the Superintendent's Family Engagement Council (2006)
- Family and Community Engagement Team (FACE Team) is an internal cross divisional team representing programs that support family engagement, birth through grade 12.
- Through the support of the Council of Chief State School Officers, the Department has worked on aligning the Early Childhood and PreK – 12 Family Engagement Frameworks to create a Birth to 21 Family Engagement Framework for early care providers and preK-12 educators across all settings.
- The Maryland Family Engagement Coalition, which focuses on Early Childhood initiatives, published Maryland's Early Childhood Family Engagement Framework, which set forth seven goals for family engagement and shared best practices with early care and education providers.
- For the past three years, the Division of Early Childhood has coordinated a Maryland Family Engagement Summit for families, providers, and educators which is being expanded to include a birth to 21 focus.

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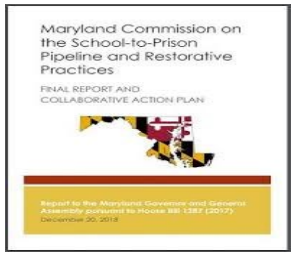
The Commission on the School to Prison Pipeline

The Commission on the School-to-Prison Pipeline and Restorative Practices was established in July 2017 to study and analyze current disciplinary practices in Maryland's public schools.

The purpose of the Commission was to bridge MSDE's work on student discipline and disproportionality with current best practices that centered around a restorative and rehabilitative approach to student discipline that would be delineated through MSDE to the local school systems.

The Commission made recommendations for establishing a statewide framework for school disciplinary practices, and define what legislative and policy initiatives could be used to enact such a plan.

In December 2018, the Commission submitted its report to the Governor and General Assembly.



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Development of Restorative Approach in Maryland's Schools

As a direct result of the "School to Prison Pipeline Commission, "RESTORATIVE APPROACHES" Maryland HB-725 was passed in 2019 requiring all public school in Maryland to use a restorative approach to student discipline, and to develop school policies, regulations, and codes of conduct reflecting a relationship–focused student discipline model that:

- Is primarily preventive and proactive;
- Emphasizes building strong relationships and setting clear behavioral expectations that contribute to the well–being of the school community;
- In response to behavior that violates the clear behavioral expectations that contribute to the well–being of the school community, focuses on accountability for any harm done by the problem behavior; and
- Addresses ways to repair the relationships affected by the problem behavior with the voluntary participation of an individual who was harmed.

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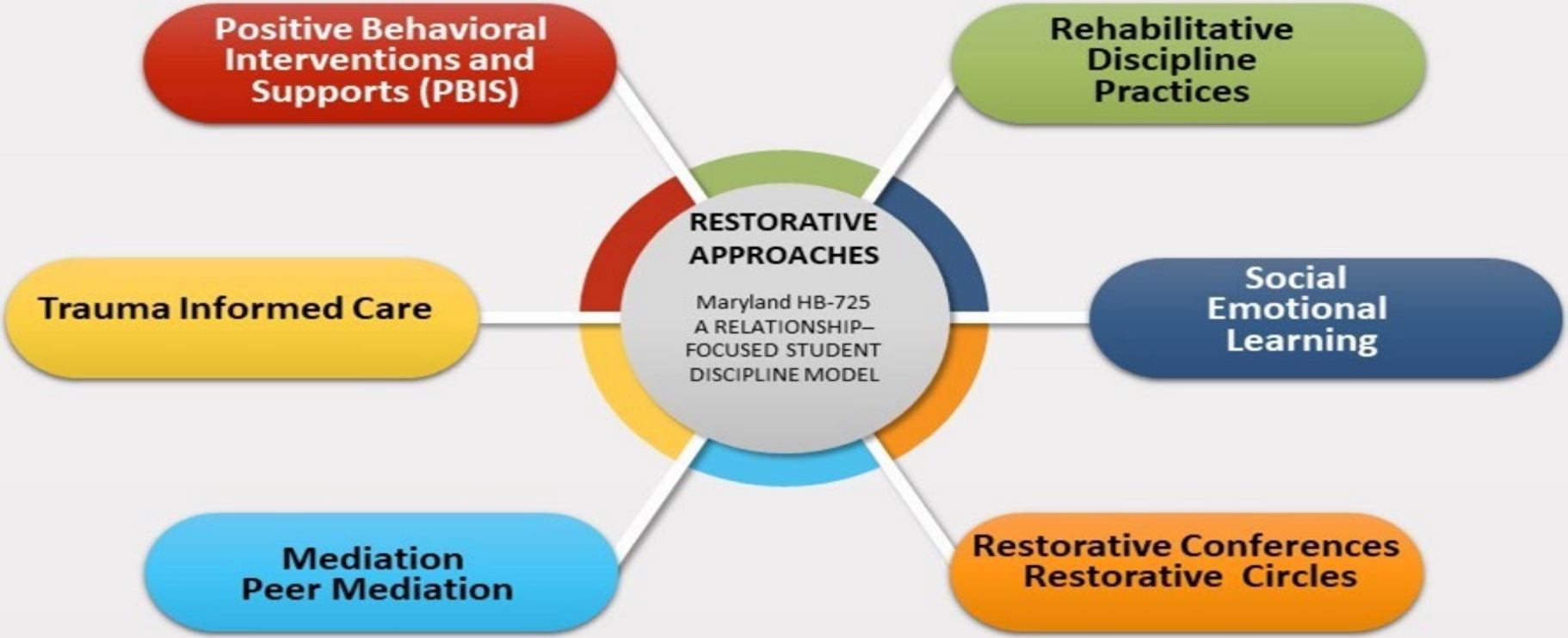
Restorative Approaches in Maryland's Schools

Maryland HB-725



Maryland College Application Campaign

- Focuses on first-generation college students, low-income students, and others underrepresented in higher education.
- Removes barriers that often prevent students from pursuing postsecondary opportunities;
- MCAC supports the reduction of inequalities.

	# LSS's	#Schools	#Senior Applications	#Total Applications
2014-15	7	21	1907	2551
2018-19	21	166	31,091	83,364
2019-20	23	189	TBD	TBD

Task Force on Student Discipline Regulations - Update

- The student discipline guidelines are in the process of being updated to include clarifying language and consistent use of the guidelines for LSSs.
- Technical assistance will be provided to a network of meetings which include the spring meeting of the Director's of Student Services, and meetings with School Counselors, Psychologists, and Principals.
- Implementing the *Bureau of Justice (BJA) STOP the Violence* grant which provides professional development on suicide prevention, violence prevention, and training in trauma informed practices.
- Expanding *Youth Mental Health First Aid* training through the Maryland Emergency Management Grant (MEMA) grant and through *BJA Stop the Violence* grant.

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Task Force on Student Discipline Regulations – Update (continued)

- Conducted two regional Adverse Childhood Experiences(ACE's) train the trainer programs to build local capacity. There is a third one in the planning stage for the spring.
- Provide updated guidance for LSSs in the area of mental health and how to access resources.
- Collected and shared alternative discipline practices that are used in public schools as alternatives to suspensions. The report was published October 1, 2019.
- Met with LSS teams to discuss disproportionality in student discipline practices and develop plans.
- Reviewed the in- and out- of school suspension and expulsion data.
- State Board adopted new school counseling and school psychologist regulations aligned with national models.
- Implicit bias training provided for Director's of Student Services in spring 2019. School systems are following up with their own training.

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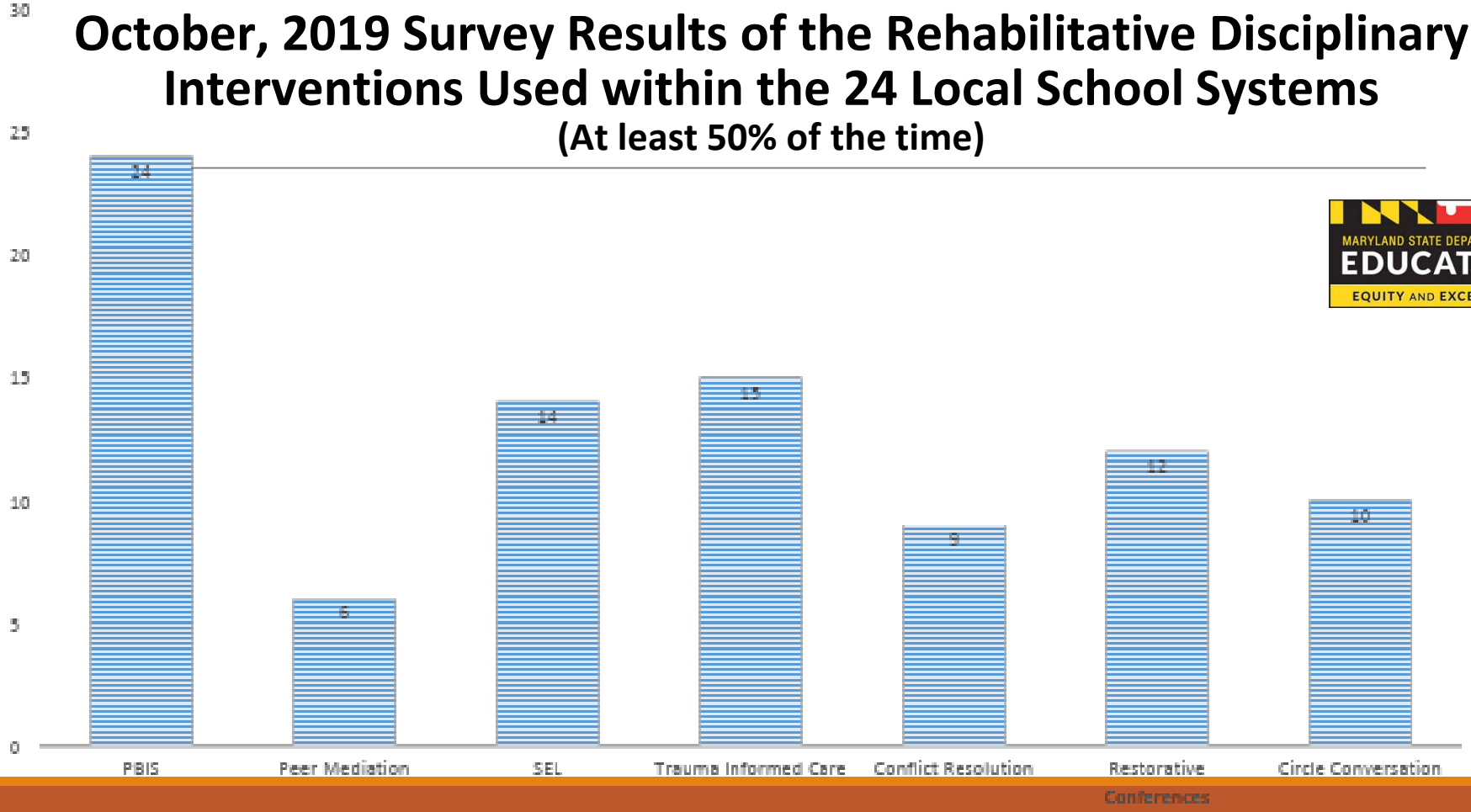
October, 2019 Survey Results of the Rehabilitative Disciplinary Interventions Used within the 24 Local School Systems

(At least 50% of the time)



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Division of Student Support, Academic Enrichment, and Educational Policy Initiatives

- Revising and updating Model Policy on Bullying Harassment and Intimidation.
- Continued partnership with Sheppard Pratt Health systems to train over 450 school based *Positive Behavioral Interventions and Supports (PBIS)* coaches over the past three years to include strands on bullying, harassment, and intimidation and cultural responsiveness.
- Provided training in *Adverse Childhood Experiences (ACES)* in order to help schools identify students who have experienced trauma that may be affecting their behavior (trainer of training model).
- Training thousands in *Youth Mental Health First Aid* in order to identify students with mental health concerns that affect behavior at school and identify resources to assist.
- Addressing disproportionality through root cause analysis in the local school systems.
- Provided professional development to all 24 local school systems in cultural proficiency and cultural responsiveness in student discipline and identifying vulnerable decision points for school administrators.
- Updating student discipline guidelines to create a more progressive discipline model with the goal of reducing out of school suspensions and keeping students in school.

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Network for Equity & Excellence in Education

- The Network for Equity and Excellence in Education is comprised of representatives of the MSDE and each of Maryland's 24 local school systems.
- Since 1997, the group has met monthly at MSDE to develop materials and strategies to assure equity and excellence in education. Network members also share information about effective practices related to equity and accelerating achievement.
- The network was instrumental in the development of the adopted equity regulation. (COMAR 13A.01.06)

COMAR 13A.01.06 *Educational Equity*

The new educational equity regulation, COMAR 13A.01.06 *Educational Equity* establishes equity as a priority for the MSDE and all local school systems. The regulation ensures that "…for any program, practice, decision, or action, the impact on all students is addressed, with strategic focus on marginalized student groups."

Adopted 10/22/19

Factors Associated with Academic Achievement Gaps

Factor	Demographic group	Factor has narrowed gaps or is associated with smaller gaps	Factor has widened gaps or is associated with larger gaps
School integration/diversity	SES, Race/ethnicity	✓	
Preschool	SES	✓	
Wrap-around services	SES	✓	
Teacher inexperience/ineffectiveness	SES, Race/ethnicity		×
Teacher race/ethnicity match	Race/ethnicity	✓	
Teacher expectations	Gender, SES, Race/ethnicity	✓	
Teacher bias	Gender, Race/ethnicity		×
Exclusionary discipline	SES, Race/ethnicity		×
Greater exposure to rigorous curriculum	SES, Race/ethnicity	✓	
Advanced procedural instruction	SES, Race/ethnicity	✓	
Culturally relevant curriculum/pedagogy	Race/ethnicity	✓	
Small class size	SES	✓	
Multiple choice test format	Gender		×
High school exit exams	SES, Race/ethnicity		×

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Maryland State Department of Education
January 2020

Literature Review:
Factors Associated with Academic Achievement Gaps

Executive Summary

This review identified 14 factors which research has found are directly or indirectly associated with widening achievement gaps, or have narrowed academic achievement gaps, by student demographic groups (race/ethnicity, socioeconomic status (SES), and/or gender). Table 1 summarizes these factors.

Table 1
Factors related to academic achievement gaps

Factor	Demographic group	Factor has narrowed gaps or is associated with smaller gaps	Factor has widened gaps or is associated with larger gaps
School integration/diversity	**SES, Race/ethnicity**	✓	
Preschool	**SES**	✓	
Wrap-around services	**SES**	✓	
Teacher inexperience/ineffectiveness	**SES, Race/ethnicity**		✗
Teacher race/ethnicity match	**Race/ethnicity**	✓	
Teacher expectations	**Gender, SES, Race/ethnicity**	✓	
Teacher bias	**Gender, Race/ethnicity**		✗
Exclusionary discipline	**SES, Race/ethnicity**		✗
Greater exposure to rigorous curriculum	**SES, Race/ethnicity**	✓	
Advanced procedural instruction	**SES, Race/ethnicity**	✓	
Culturally relevant curriculum/pedagogy	**Race/ethnicity**	✓	
Small class size	**SES**	✓	
Multiple choice test format	**Gender**		✗
High school exit exams	**SES, Race/ethnicity**		✗

Note: Research on the impact of heterogeneous student grouping and of psychological interventions on achievement gaps has been inconclusive (see full text for more information).

Introduction

Academic achievement gaps are defined as differences in achievement outcomes by race/ethnicity, socioeconomic status (SES), English language proficiency, and gender. This literature review summarizes the research on policies and practices that have narrowed academic achievement gaps, or have demonstrated potential in doing so. Aspects of schooling that have been found to impact student achievement and for which there are also gaps by student demographic characteristics are also included.

The Nature of Achievement Gaps

Academic achievement gaps by race/ethnicity, income, and gender (in reading) are present when students enter school (Fryer & Levitt, 2004, 2006; Husain & Millimet, 2009; Robinson & Lubienski, 2011) and largely do not increase while students are in school, with the exception of the summer months (Downey, von Hippel, & Broh, 2004; Reardon, 2011). However, within this overall trend, there is substantial variation. SES achievement gaps vary dramatically at the school level within districts (Figlio & Karbownik, 2017). Further, about half of black-white achievement gaps are attributable to within-school factors (Bohrnstedt, Kitmitto, Ogut, Sherman, & Chan, 2015) and studies suggest that student experiences within schools vary by race (Lewis & Diamond, 2015).

School Integration

A longitudinal state-level study found that increases in black–white segregation contribute to black-white achievement gaps, while increased exposure to one another among black and white students reduces achievement gaps (Condron, Tope, Steidl, & Freeman, 2016).

In Montgomery County, Maryland, an inclusionary zoning program allows the local housing authority to purchase a third of homes as federally-funded public housing, permitting low-income families to live in higher-income neighborhoods and their children to attend schools in which a majority of students do not live in poverty. Research on the effects of this housing policy found that elementary school students that lived in public housing and attended their district's most advantaged schools outperformed similar students that attended the least advantaged schools. The gap between students who lived in public housing and non-poor students in the district was reduced by half in math and by a third in reading (Schwartz, 2011).

Following years of a race-based student assignment plan, Wake County Public Schools (WCPS) in North Carolina started to base school assignment on family income and school achievement in 2000. One study found that math and reading scores in WCPS increased slightly and the

achievement gap between black and white students narrowed after this policy change, while scores among black students fell in four other districts in the state that similarly had a race-based assignment plan in the past but did not adopt a new assignment plan to address integration (McMillan, Fuller, Hill & Duch, 2018).

Preschool

Research shows that preschool increases achievement and readiness for kindergarten but also that these early gains dissipate over the next few years (Bassok, Gibbs, & Latham, 2015; Currie & Thomas, 1995; Lipsey, Farran, & Hofer, 2015). Furthermore, several studies have documented greater improvement in learning in preschool for economically disadvantaged children than for their non-disadvantaged peers (Barnett, 2011; Camilli, Vargas, Ryan, & Barnett, 2010; Duncan & Magnuson, 2013; Reynolds, Temple, & Ou, 2010).

Wrap-around Services

Programs that provide wrap-around services (e.g. before- and after-school, summer, and vacation academic programs, academic enrichment, mentoring, health and dental services, counseling services, and attendance support) in schools have been found to increase achievement in reading and math, lower chronic absenteeism in elementary and middle schools, and decrease the dropout rate of disadvantaged students (City Connects, 2014; Wash et al., 2014). One study found the effects of such investments in schools which included an extended school day and year to be large enough to close the white-black achievement gap in math and eliminate or cut in half the same gap in English Language Arts depending on the grade level (Dobbie & Fryer, 2009).

Teacher Quality

Students in high-poverty, high-minority schools are more likely to have more inexperienced and less effective teachers than students in other schools (Goldhaber, Lavery, & Theobald, 2014; Jepsen & Rivkin, 2002; NCES, 2000; Peske & Haycock, 2006; Sass, Hannaway, Xu, Figlio, & Feng, 2012) and more likely to have teachers with higher rates of absences (Clotfelter, Ladd, & Vigdor, 2007).

Within schools, disadvantaged students are more likely to be assigned to teachers with less experience and teachers who have demonstrated less contribution to student achievement scores (Bruno, Rabovsky, & Strunk, 2019; Duque, 2014; Feng, 2010; Kalogrides, Loeb, & Beteille, 2013; Loeb et al, 2012). Studies have found that these differences in teacher assignment explain significant portions of student achievement gaps (Duque, 2014; Goldhaber, Theobald, & Fumia, 2018).

Teacher Diversity

Research has found that black and, to a lesser extent, Latino students perform better on standardized tests and have better behavioral outcomes when assigned to a teacher of the same race (Dee, 2004; Eddy & Easton-Brooks, 2011; Egalite, Kisida, & Winters, 2015; Redding, 2019). Further, black students assigned to a black teacher in the early grades are more likely to graduate from high school and enroll in college than peers in the same school who were not assigned a black teacher (Gershenson, Hart, Hyman, Lindsay, & Papageorge, 2018). Student-teacher demographic matching also significantly decreases absenteeism and suspensions (Holt & Gershenson, 2017) and improves teacher perceptions of student behavior (Dee, 2005; Gilliam, Maupin, Reyes, Accavitti, & Shic, 2016).

Teacher Expectations

If teachers expect more of their students, their students will achieve more (Boser, Wilhelm, & Hanna, 2014; Rosenthal & Jacobson, 1968). Research has found racial and gender biases in teachers' expectations of students. Teacher expectations were higher for white and Asian students than black and Latino students with similar achievement and black teachers' expectations for black students are higher than non-black teachers' expectations (Beady & Hansell, 1981; Gershenson, Holt, & Papageorge, 2016; McKown & Weinstein, 2008; Papageorge, Gershenson, & Kang, 2019). Similarly, math and English teachers were more likely to think class was too hard for students of color than for White students, even after controlling for student background and achievement (Cherng, 2017). One study found that teacher expectations accounted for approximately one-third of the year-end achievement gap (McKown & Weinstein, 2008).

Teacher Bias

Differences in teachers' expectations may be based on implicit biases. A randomized controlled study of teachers' evaluations of students' ability revealed biases against black, Latino, and female students, with non-white teachers favoring white students over students of color (Copur-Gencturk, Cimpian, Lubienski, & Thacker, 2019). While there has been little research on the impact of teacher-centered empathy interventions, one study found a brief empathy-inducing intervention decreased the implicit bias of White female pre-service teachers toward black individuals (Whitford & Emerson, 2019).

With respect to gender, one study found teachers consistently rated females higher than males in both reading and math, even when males scored higher on cognitive assessments (Robinson & Lubienski, 2011). Another study found that teacher bias favoring boys had a positive effect on

boys' achievement, a negative effect on girls' achievement and impacted enrollment by gender in advanced level math courses in high school (Lavy & Sand, 2015). Assignment to a same-gender teacher significantly improved the achievement of both girls and boys as well as teacher perceptions of student performance and student engagement with the teacher's subject (Dee, 2007).

Discipline

There is a well-documented racial disparity in student discipline both nationally and in Maryland, with black students removed from schools at twice the rate of White students (Lacoe & Manley, 2019; Lipscomb et al., 2017). Student removals translate to a loss of opportunities to learn and poorer academic performance (Lacoe & Steinberg, 2019) and while no causal link has been established between gaps in student discipline and academic achievement gaps, school exclusion may contribute to the racial achievement gaps (Gregory, Skiba & Noguera, 2010). In fact, one study found that school suspensions account for approximately one-fifth of white-black achievement differences (Morris & Perry, 2016) and districts with larger racial discipline gaps have larger racial achievement gaps (Pearman, Curran, Fisher, & Gardella, 2019). Some studies, however, question the direction of the relationship between discipline and achievement with findings that poor achievement can lead to disciplinary problems in school (Anyon et al., 2016; Maguin & Loeber, 1996; Savolainen et al., 2012).

Rigor of Curriculum

White students are more likely to take advanced courses and exams than black and Latino students (Conger, Long, & Iatarola, 2009; Ford, 2010; Klopfenstein, 2004; Klugman, 2013). Efforts to increase access to advanced courses over the last two decades have succeeded in raising the proportion of black and Latino students enrolled in these classes but, due to increases in enrollment of non-minority students, the gaps in coursetaking remain (Conger, Long, & Iatarola, 2009; Klugman, 2013).

There are also large gaps by race and SES in the identification of gifted and talented students (Card & Guiliano, 2015). A universal screening program in one school district led to large increases in the fractions of economically disadvantaged and minority students placed in gifted programs (Card & Guiliano, 2015). Black and Latino students who were not identified as gifted and talented experienced achievement gains when granted access to gifted classes students (Card & Guiliano, 2014, 2016). Additionally, access to grade 8 Algebra disproportionately raised the achievement and likelihood of taking advanced math courses in high school for women, students of color, and English-Language Learners (Mceachin, Domina, & Penner, 2019).

Advanced Procedural Instruction

The use of advanced procedural instruction (as opposed to conceptual and basic procedural instruction) and time spent on math were related to achievement growth for black students and low-SES students in kindergarten and first grade while other traditional teacher quality measures, e.g. degree, experience, certification, and professional development were found to not be related to achievement growth (Desimone & Long, 2010).

Culturally-Relevant Curriculum/Pedagogy

The African American Male Achievement (AAMA) program includes regularly scheduled classes exclusively for black, male students and taught by black, male teachers who focus on social-emotional training, African-American history, culturally relevant pedagogy, and academic supports. One study found that AAMA availability led to a significant reduction in the number of black males who dropped out as well as smaller reductions among black females, particularly in ninth grade. (Dee & Penner, 2019)

Ethnic studies courses provide an example of "culturally relevant pedagogy" (CRP). Empirical evidence on the effectiveness of these courses is limited but one study found that assignment to this course increased ninth-grade attendance by 21 percentage points, GPA by 1.4 grade points, and credits earned by 23 (Dee & Penner, 2017).

Psychological Interventions

Stereotype threat is a predicament in which people feel at risk of conforming to a stereotype of a group with which they identify. In schools, stereotype threat may increase the anxiety of students of color. Achievement gaps by gender, for example, has been found to be largely statistically explained by math self-efficacy and math anxiety (Cheema & Galluzzo, 2013). While there is some evidence that student-facing interventions to reduce unconscious bias, i.e. stereotype threat, are effective in raising student achievement (Blackwell, et al, 2007; Good et al, 2003; Oysterman et al, 2016; Paunesku et al, 2015; Yeager et al, 2014;), most of these studies are of small samples, one-off, and conducted in favorable classroom settings. Effects are smaller in studies with larger numbers of students and non-existent in the largest studies. It is also unclear if the reported gains are sustained over time. One large, rigorous study of a self-directed self-affirmation exercise aimed at reducing stereotype threat found no significant overall improvements in minority students' performance, except in classrooms with effective teachers (Dee, 2015).

Student Grouping

Students' achievement is affected by the achievement level of their peers (Burke & Sass, 2013; Hoxby, 2000; Hanushek, Kain, Markman, & Rivkin, 2003). International evidence has shown that tracking of students into homogeneous classes by achievement in the early grades increases educational inequality at the national level (Hanushek & Woessmann, 2005). At the student level, some studies find that higher achieving students benefit from tracking and lower achieving students are disadvantaged (Brewer, Rees, & Argys, 1995; Lefgren, 2004), while other studies have found no tracking penalty for low achieving students (Betts & Shkolnik, 2000) or a benefit for low achieving students (Figlio & Page, 2002), although the effects of tracking may be moderated by the equitable allocation of school resources, e.g. class size, teacher experience, and teacher education, across classes (Betts & Shkolnik, 2000).

Class Size

Schools with large numbers of black and/or limited English students are more likely to have larger classes (Barton, 2003). States with higher teacher/student staffing ratios in higher poverty districts tend to have lower than expected achievement gaps in Grade 4 and Grade 8 on the NAEP (Baker, Farrie, & Sciarra, 2016). Smaller classes are associated with increased student achievement, narrowing the achievement gap, and improvements in non-cognitive skills such as student engagement, persistence, and self-esteem (Babcock & Betts, 2009; Dee & West, 2011; Konstantopoulos & Chun, 2009; Zyngier, 2014). Further, although student-teacher racial mismatch has been found to negatively affect student achievement in regular size classes, this mismatch has no significant effect in small classes (Dee, 2004).

Test Format

Several studies have found that the format of a test, i.e. the proportion of multiple-choice or constructed-response questions is related to male and female students' performance (Beller & Gafni, 2000; BenShakhar & Sinai, 1991; Gamer & Engelhard, 1999; Lindberg et al., 2010; Reardon, Fahle, Kalogrides, Podolsky, & Zarate, 2016), although one study found no relationship between item format and gender achievement in Michigan high school students (DeMars, 1998). Specifically, the studies found that boys do better on multiple-choice tests than girls of the same academic achievement level.

High School Exit Exams

Research shows that high stakes exit exams disproportionately and negatively impact minority and economically disadvantaged students, reducing their likelihood of graduation from high

school (Dee & Jacob, 2006; Papay, Marnane, & Willet, 2010). For example, one seminal study found that exit exams significantly reduced the probability of completing high school, particularly for African American students and students in urban and high-poverty districts, while lowering the dropout rate in low-poverty and suburban districts (Dee & Jacob, 2006).

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