BRIDGES COLLABORATIVE

FRANK BATTEN SCHOOL of LEADERSHIP and PUBLIC POLICY

Maryland's Teacher Diversity Disparity:

Examining Strategies to Improve Completion of Educator Preparation Programs

Prepared by Jayla Hart

April 7, 2023

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Applied Policy Project Technical Report

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Disclaimer

The author conducted this study as part of the program of professional education at the Frank Batten School of Leadership and Public Policy, University of Virginia. This paper is submitted in partial fulfillment of the course requirements for the Master of Public Policy degree. The judgments and conclusions are solely those of the author, and are not necessarily endorsed by the Batten School, by the University of Virginia, or by any other agency.

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Lastly, the biggest thanks to my mother, Yolanda Lowry-Hart – a Black woman who has educated countless students and taught me to value the intimate knowledge possessed by educators of color.

Honor Pledge

On my honor, as a student at the University of Virginia, I have neither given nor received unauthorized aid on this assignment.

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Executive Summary

In Maryland, too few Black and Hispanic candidate teachers complete their educator preparation program (EPPs). Lack of program completion prevents candidates from earning certification and licensure, contributing to the persistent underrepresentation of teachers of color in Maryland's K-12 public schools. Over the last decade, enrollment in the state's EPPs has decreased by a third, while completion rates have declined by almost the same amount.

The state's recent legislation, The Blueprint for Maryland's Future, seeks to transform the diversity and quality of teachers entering the workforce. To this end, in June 2022, Maryland awarded almost $48 million to its local education agencies to implement Grow Your Own Staff initiatives. These initiatives include a variety of activities but few focus specifically on deepening relationships with EPP providers to advance candidate program completion amongst candidates of color. It will take another decade before the Blueprint is fully implemented. In the meantime, students currently attending Maryland schools will continue to have predominately white teachers. Urgent action is needed to increase the presence of qualified, diverse teachers. This can only occur if teachers complete their preparation programs.

This report assesses three alternatives on their ability to increase EPP completion rates amongst Black and Hispanic teacher candidates. The three alternatives evaluated are:

1. Standardizing Articulation Agreements with Minority Serving Institutions
2. Establishing an Intensive In-Person Mentoring Pact
3. Establishing a Virtual Guided Mentorship Program

EPP completion is the primary outcome of interest while greater teacher-student parity is a secondary outcome. Teacher-student parity compares the proportion of teachers and students of a given race/ethnic group. In theory, having more candidates of color complete their EPP translates to a larger pool of diverse teachers eligible for hire, generating greater teacher representation relative to a district's student demographics.

Alternatives are evaluated at the district-level, using Montgomery County Public Schools (MCPS) as a case study. Each alternative is assessed with respect to the following criteria: efficacy, equity, cost effectiveness, and administrative feasibility. Efficacy estimates are calculated using existing literature on the effects of financial aid, college credits, and (intensive) mentorship on college persistence and retention. Projections are constrained within a 10 year period, looking towards completion gains which can be made by 2034 – the year The Blueprint will be fully implemented.

This analysis recommends Maryland districts, and specifically MCPS, pursue an intensive mentorship model that pairs its Black and Hispanic candidate teachers with experienced teachers of color currently working in the district. This alternative provides candidates with robust support, financial assistance, and a co-taught internship experience that is likely to increase candidate's perception of self-efficacy and career readiness.

Although a single recommendation is made in the context of MCPS, the analysis demonstrates all proposed alternatives have the potential to increase completion rates and align with workforce diversification goals outlined by the state. I urge readers to consider the value in multipronged policy solutions that account for variation in the needs of Black and Hispanic candidate teachers, and teacher candidates of color more broadly.

Client Orientation

The Bridges Collaborative ('Bridges') is an initiative of The Century Foundation working to advance meaningful school and neighborhood integration. Through nationwide collaboration with public school districts, charter schools, and housing organizations, Bridges seeks to dramatically increase the number of students attending diverse schools. The work of Bridges centers on developing successful strategies for integration, providing learning space for practitioners, building grassroots support, and conducting policy research that influences the national dialogue on school integration.

With this mission in mind, my analysis investigated integration in Maryland - one of the most diverse states in the nation, serving nearly a million pre-K-12 students. Maryland's public schools remain segregated both within and across its 24 districts. Attention on integrating an increasingly diverse student population is incredibly necessary; nonetheless, attention on the pressing need to diversify and integrate the teaching workforce is overdue. The disproportionate exposure to licensure and credentialing barriers aspiring teachers of color face is a longstanding product of massive resistance to school integration in the post-*Brown v. Board of Education* era. In the aftermath of massive resistance, generations of potential Black and Hispanic educators were ultimately dissuaded (or blatantly denied) from entering the teaching profession.

Every child deserves a teacher who carries compassion for their identities and is well-equipped to meet their educational needs. Even more, every teacher deserves to feel respected and valued within their profession. Neither of these realities will come to fruition across Maryland - let alone our nation - without intentional efforts to transform and diversify the educator workforce.

Historic Precedent for Teacher Segregation

Over a century ago, educators like Emma L. Grason Miller taught with passionate vigor and an intense understanding of education's value, particularly for Black students. Raised in Baltimore before moving to Chestertown, Miller established a school to educate Kent County's Black youth.[i] In 1911, the Hampton Institute graduate would go on to become the County's first supervisor of 'Colored' schools while motivating her community to see the need for improved education beyond the sixth grade standard. Her efforts were crucial to the construction of the first 'Colored' high school, Henry Highland Garnet School, in 1915. Countless Black educators like Miller prioritized the growth of their communities during segregation and, despite immense challenges, persevered to bring transformative education to many.

Decades before the Supreme Court declared state-sanctioned segregation unconstitutional in 1954, Maryland and 9 other dual-system states offered tuition scholarships for Black students to attend out-of-state universities. In 1937, the Maryland Commission on Scholarships for Negroes was created. The state allotted $220,000 (equivalent to $3.7 million today) over the course of more than two decades "for the purpose of securing for such negros, without additional cost, educational facilities equal to those afforded White students."[ii]

Black graduate students, who could not find desired coursework at Morgan State or Prince Anne (now, University of Maryland Eastern Shore) - despite said coursework being offered at the University of Maryland - used their scholarships to earn professional degrees at top-ranked universities such as Columbia University, the University of Chicago, and Harvard University.[iii] Many earned their credentials and returned home to be principals and teachers at all-Black schools. Well-respected and highly qualified, generations of Black educators empowered their students and communities through fierce leadership and a devout commitment to education excellence.

After the *Brown* decision, however, the Black educator workforce was decimated by the closure of all-Black schools as well as racially discriminatory firings and demotions. Had Emma L. Grason Miller, who passed in 1951, lived to see *Brown's* ruling implemented, she likely would have been forced out of the profession she dedicated her life to.

Black educator displacement continued even after the Civil Rights of Act 1964 as southern school boards failed to renew contracts, established race-based National Teacher Examination (NTE) score thresholds, and reclassified teaching positions under "specific federally supported categories" such as Title IV of the Elementary and Secondary Education Act of 1965.[iv] Although some educators migrated to continue teaching, an estimated 38,000 Black teachers lost their jobs in the South and bordering states. Meanwhile, manufactured teaching shortages led to the creation of alternative certification pathways to fill displaced positions with less experienced, white teachers.[v]

The educator diversity disparity requires us to seriously reckon with the unredressed consequences of resistance to desegregation. To say desegregation failed is to dismiss how integration was intentionally undermined through racist policy and violence towards Black communities. Massive resistance from white Americans stayed in the minds of generations of potential Black and Hispanic educators, many of whom were ultimately dissuaded from entering the profession after witnessing the treatment of their family and friends. The legacy of this lost potential and educator expertise has pressing present-day implications.

As of 2022, most teachers in Maryland, and nationally, are white (71.6 percent and 79 percent, respectively). Slightly less than 40 percent of Maryland's student population is white. Comparatively, 18.8 percent of teachers are Black (compared to 33.2 percent of students) and only 4.3 percent are Hispanic/Latino (compared to 21 percent of students). The four figures below map teacher-student parity for White and Black groups. Teacher-student parity compares the proportion of teachers and students of a given racial identity. Parity indices provide an accurate representation of each locale's level of teacher diversity relative to student diversity.[vi] A parity score of 1 is our goal as this means there is an equal proportion of teachers and students of a given racial/ethnic background.

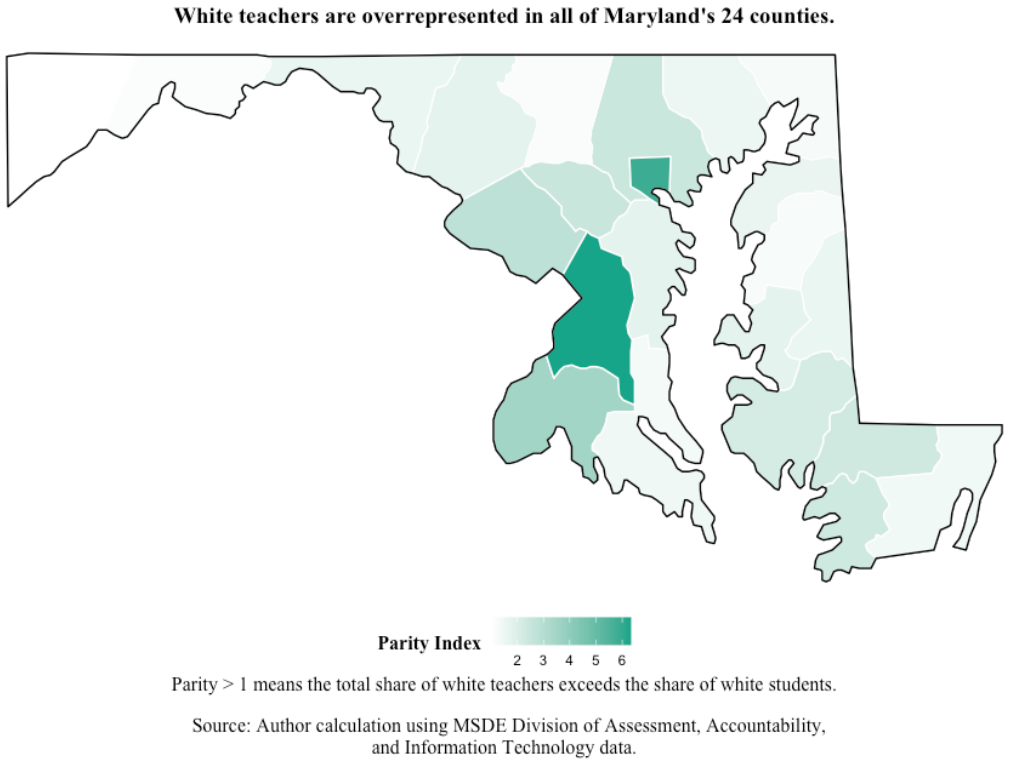


Figure 1. White Teacher-Student Parity

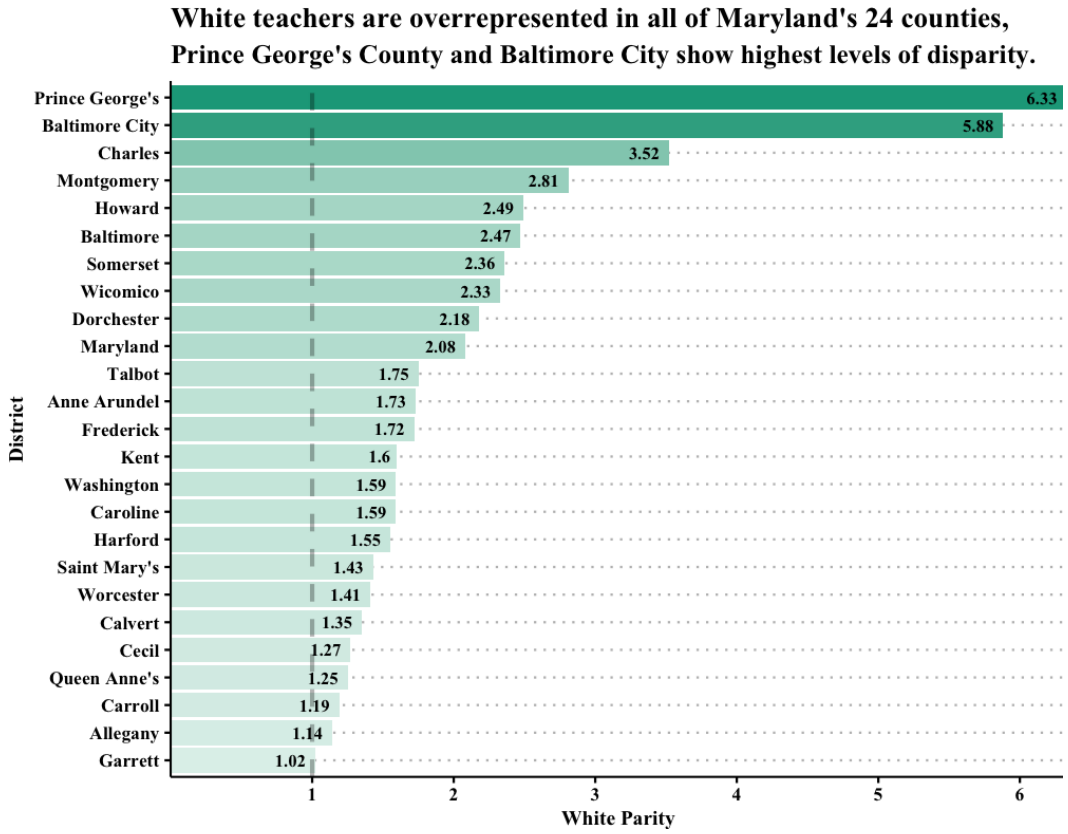


Figure 2. White Teacher-Student Parity Ranked by District

Figure 3. Black Teacher-Student Parity

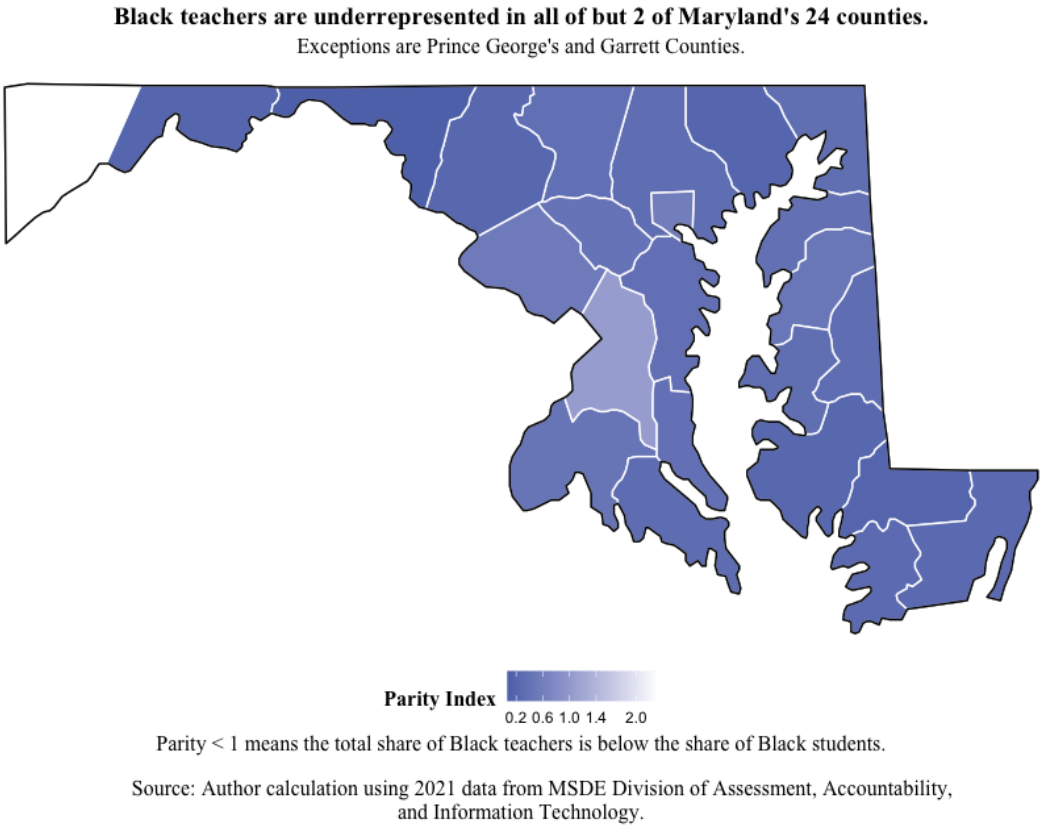
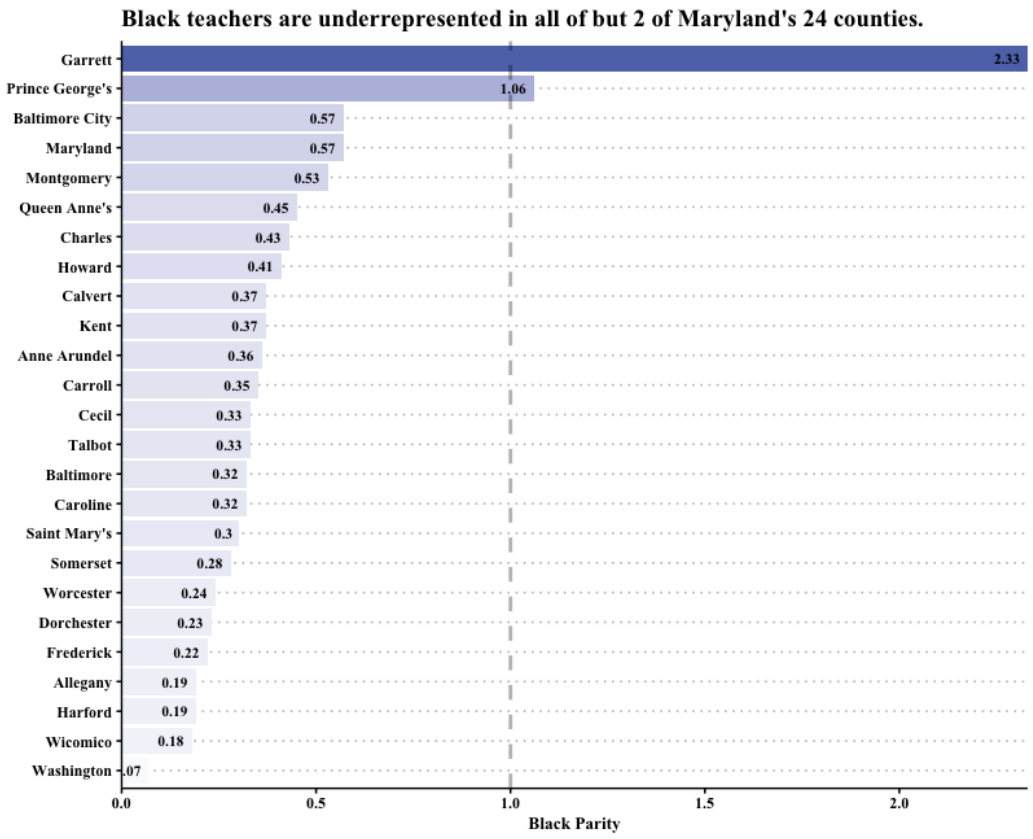


Figure 4. Black Teacher-Student Parity Ranked by District



Now, demographic parity alone does not translate to meaningful integration. If we are to avoid replicating historic harm, deliberate investment in transforming the quality of preparation and diversity of educators entering the teaching pipeline must be made urgently.

The Costs of Undervaluing Teacher Diversity & Integration

Students and teachers of color often shoulder the brunt of educational inequity. Nationwide, students and teachers of color are disproportionately concentrated in underinvested schools and districts that are racially and economically isolated. Black and Hispanic teachers are more likely to work in schools that serve higher populations of Black and Hispanic students. These schools often operate within segregated metropolitan districts with higher concentrations of impoverished families. Despite these metro areas having a more diverse teaching workforce relative to their suburban or rural counterparts, white teachers still compose over two-thirds of the workforce - particularly, white women.

Disrupting cycles of concentrated privilege and unredressed poverty is vital to advancing equity.[vii] Robust research shows increased teacher diversity improves students' academic achievement and self-perception.[viii] These socio-emotional and academic benefits are particularly pronounced for students of color but are also beneficial for white students. With specific reference to Black students, assignment to at least one Black teacher is shown to increases the likelihood of graduation from high school and enrollment in college.[ix] Moreover, students in grades 4-8 are found to face fewer suspensions with greater exposure to same-race teachers.[x] Such benefits save districts' resources and propel students into greater future success.

A diverse, well-integrated teaching workforce also creates more opportunities for teachers of color to feel a sense of belonging and respect. This helps to combat attrition and turnover which is particularly high amongst Black and Hispanic teachers. Research suggests alternatively certified teachers are 25 percent more likely to leave their school, exacerbating existing demographic disparities. District expenditures on separation, recruitment, hiring, and training are estimated to cost between $9,000 and $21,000 per teacher, depending on district size and student demographics (e.g., share of free/reduced price lunch eligible students).[xi]Accounting for Maryland's 1,621 teacher vacancies and state-wide attrition of 10%, estimated turnover costs for Maryland exceed $68 million during the 2021-22 academic year.[xii] This is funding that could otherwise go towards vital educational innovations such infrastructural improvements or updated curricular materials.

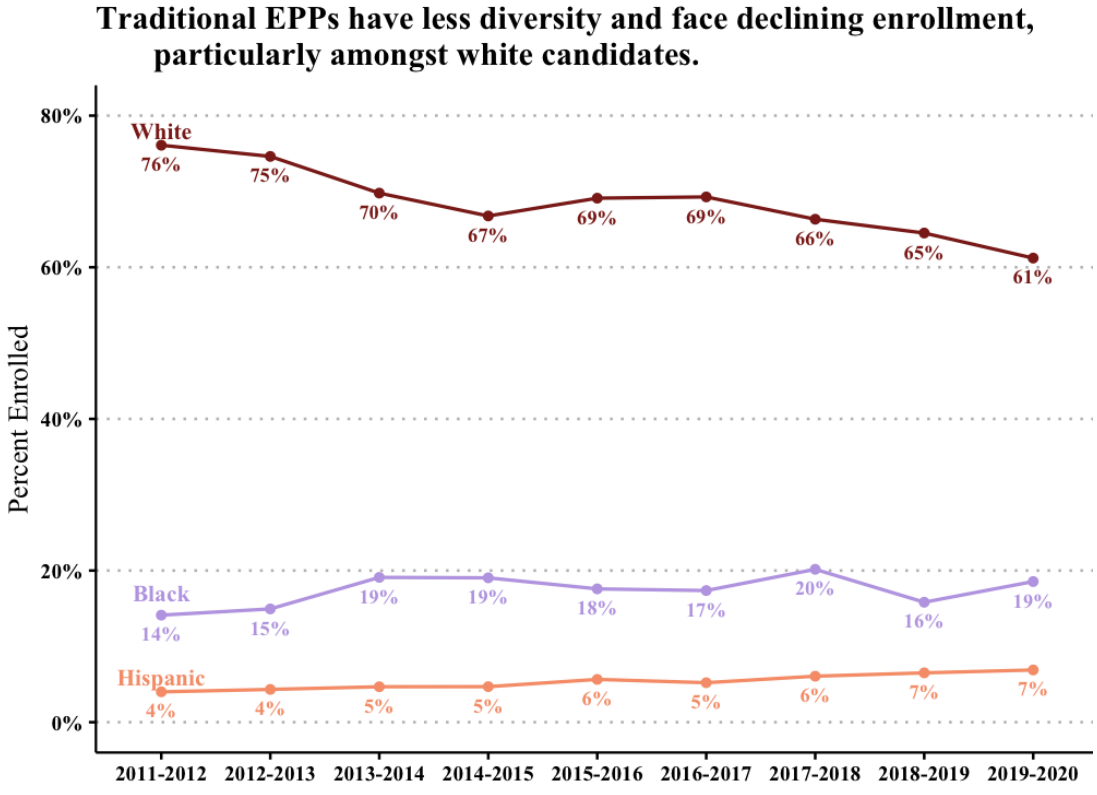
Considering the complexity of workforce integration, not all costs are quantifiable. Teachers of color, especially those early in their careers, are often caught in a double bind where their personal commitments conflict with expectations of professionalism that perpetuate oppressive hierarchies.[xiii] The costs of restructuring this exclusionary system are as physical and psychological as they are fiscal. Accounting for these phenomena won't fit neatly in a cost-benefit analysis but acknowledging their impact greatly affects whether teachers of color feel their labor is seen, respected, and valued.

Educator Preparation Program (EPP) Landscape

Educator preparation programs (EPPs) serve a primary function of supporting candidate teachers in the process of state certification obtained through examination.[xiv] Maryland offers over 300 EPPs across 23 of its institutions of higher education (IHEs) and 9 alternative EPPs.[1] Some alternative programs are nationally known, such as Teach for America; others are local partnerships such as Montgomery County Public Schools' (MCPS) collaboration with Montgomery College to offer the *Alternative Certification for Effective Teachers* (ACET) program. ACET is a teacher residency program. Residency models integrate graduate coursework into fieldwork experience and offer residents a stipend or salary during the residency.[2] Other alternative EPPs are "Grow Your Own" (GYO) initiatives. GYOs are an equity-centered means of overcoming traditional entry barriers for candidate educators of color, particularly in urban communities.[xv] [xvi] They typically focus on recruiting students directly from the local community or staff currently in schools who can be trained as teachers.

The following figures provide a snapshot of EPP enrollment amongst Black, Hispanic, and white students. As shown in Figure 5, traditional EPPs have less diverse student populations relative to alternative programs, with enrollment declines most pronounced amongst white students. The share of enrolled Hispanic students has steadily increased over the decade whereas enrollment amongst Black students fluctuates repeatedly but never surpasses 20 percent of all enrolled students.

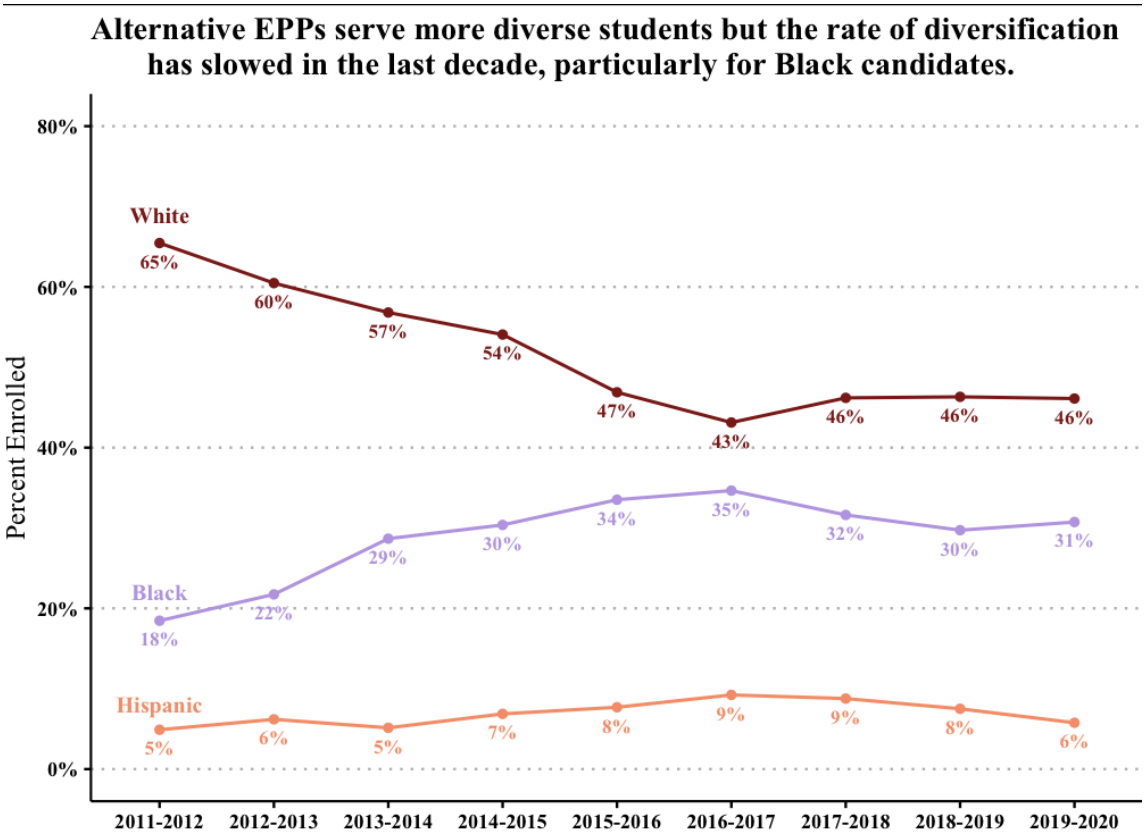
Figure 5. Traditional EPP Enrollment by Race, 2011-2020



Source: Title II Maryland State Reports, 2013-2021.

[1] A full list of EPP providers is available in the Appendix.
[2] ACET cohorts complete 10-12 weeks of coursework, a 6 week internship, and then a one year, supervised residency.

Figure 6. Alternative EPP Enrollment by Race, 2011-2020



Source: Title II Maryland State Reports, 2013-2021.

Comparatively, Figure 6 shows alternative EPPs enroll a larger share of Black students and slightly higher shares of Hispanic students. However, the rate of diversification has declined in recent years. Similar to their traditional counterparts, white student enrollment has declined, however alternative programs faced a more dramatic decline for several years before plateauing in 2017.

EPP providers face a range of interconnected challenges to recruit, enroll, retain, and graduate diverse students. A survey of 108 traditional EPPs found 38 percent of colleges' admitted entrance criteria were obstacles for students of color.[xvii] A research memorandum from Goe & Roth (2019) examined numerous enrollment challenges (e.g., attracting underrepresented students; GPA maintenance) and proposed fourteen strategies EPPs can use to improve diversity. Goe & Roth's proposed strategies included dynamic university/district partnerships, GYO programs, realistic discussions about financial support, and placement/in-class assessments to identify students at risk of failing coursework. Some argue for other approaches like generous scholarship aid for students of color or the creation of a national teacher corps.[xviii] While enrollment strategies have received significant empirical attention, best practices for EPP retention and completion are not rigorously examined.

Barriers to Educator Preparation Program Entry and Completion

Traditional education degree programs are more cost and time-intensive than alternative pathways. Although financial aid is available, prospective teachers are often deterred from traditional programs out of legitimate concerns about pay and working conditions. Maryland teachers make 84 cents on the dollar compared to similarly educated peers.[xix] Also, grant and loan forgiveness programs such as

the *Teacher Education Assistance for College and Higher Education* (TEACH) grants require teacher placement in "high need" schools that serve greater proportions of marginalized students. These schools are often resource-scarce, increasing the likelihood of teacher burnout. Without adequate sponsorship and comprehensive mentorship to complete their degree, candidate teachers of color persistently face interlocking barriers hindering their entry to the workforce.
Moreover, Black and Hispanic candidates perform disproportionately worse than their white peers on licensure exams.[xx] Amongst states with strong testing systems, the average first-time pass rate is 45 percent, but rates are lower for candidates of color.[xxi] While exam rigor and quality vary by state, every retake incurs an additional cost to candidate educators of color – who are also more likely to not retake the exam after failing the first time.

Confronted by this, Maryland amended its certification requirements to permit a 3.0 GPA in lieu of testing; however, this examination criteria remains in place for conditionally licensed teachers (who are disproportionately Black) and those in alternative EPPs. Almost all traditional EPP students use the GPA pathway which has increased program enrollment. In comparison, alternative programs lost 23 percent of their Black candidates due to the assessment requirement during the 2019-20 academic year.[3] Given the shortened length of alternative programs and variance in program quality, it is understandable why a content assessment requirement remains in place. However, existing trends suggest this requirement may exacerbate existing disparities in EPP enrollment and completion.

Even more, the relationship between standardized testing and teacher performance is contested. Borden-King et. al (2020) find no correlation between test scores or GPAs on how well 218 teacher candidates performed as student teachers. Others assert performance-based assessments risk introducing cultural bias into evaluations of candidates' pedagogy.[xxii] Taken together, there is great need for more developed theories of change which EPP providers can leverage to advance program completion and workforce diversity.

Legislative Landscape

In 2021, Maryland passed House Bill 1300 - **The Blueprint for Maryland's Future** ("The Blueprint"). The landmark legislature included a nearly $48 million investment in Grow Your Own Staff grants allowing districts to develop alternative pathways to teaching such as residencies and apprenticeships. This was a single, non-competitive grant. Through this bill, Maryland and its districts espoused a commitment to recruiting and preparing a more diverse, high-quality teaching force.

HB 1300 calls for, amongst other objectives, altering and enhancing requirements for teacher training practicums and EPPs. These statutes aim to elevate the state's education system and attract more diverse, high-quality teachers. EPPs are crucial partners in achieving this goal, as §1-303(2)(ii) outlines:[4]

[3] To put examination costs in perspective, candidate teachers who do not meet the 3.0 GPA requirement or are enrolled in a Resident Teacher Certificate (RTC) program must take the Praxis or edTPA examinations. Praxis Core assessments (Reading, Writing, Math) costs $90 each while the Combined Test costs $150. Additional fees range from $35 (phone registration) to $209 (Elementary Education: Content Knowledge test). The full edTPA assessment (or full retake) costs $300, a 2-task retake costs $200, and a single-task retake costs $100. Fee waivers and vouchers are available for students (e.g., Towson University provides each student with one edTPA voucher) but candidate teachers are responsible for retake costs.

[4] As of 2025, Maryland State Code 6-126 will require candidate teachers to "pass a nationally recognized portfolio-based assessment" and "a rigorous exam of mastery of reading instruction and content." This statute will operate in conjunction with Regulation 13A requiring alternative EPP candidates pass a basic skills test to receive their resident teacher certifcate prior to full licensure.
In an interview with Corey Gaber, a teacher in Baltimore City Public Schools, it was shared that various changes to the language in EPP regulations that advance equity are in the process of being voted on. These changes will take into consideration teacher candidates' performance during their internship, their connection to their community, and the effects of GPA/exam mandates.

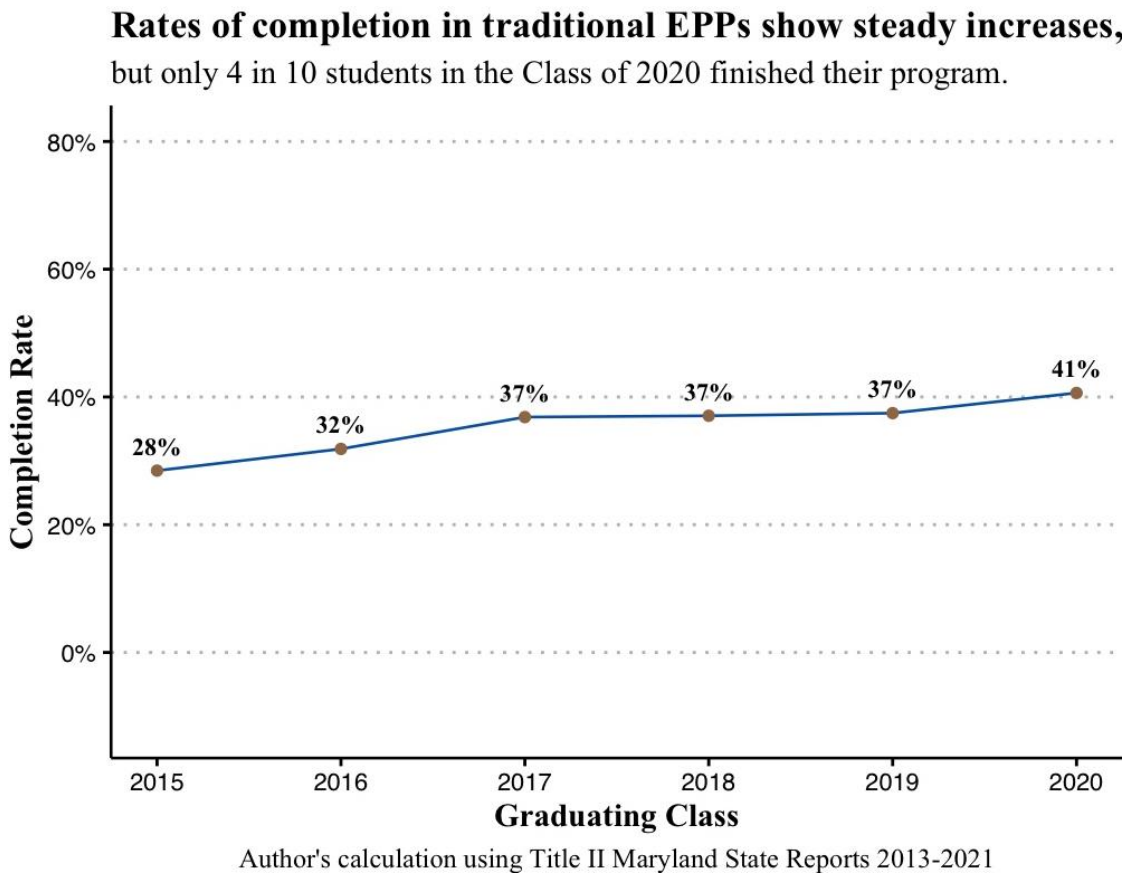
Teacher preparation programs in the State's postsecondary institutions that are rigorous and prepare teacher candidates to have the knowledge, skills, and competencies needed to improve student performance and to teach all students successfully regardless of the student's economic background, race, ethnicity, and learning ability or disability.

New policies illustrate an effort to ensure Maryland teachers are well-trained and thoroughly equipped to serve diverse students. However, they *do not* demonstrate an understanding of the barriers hindering EPP providers from supporting candidates all the way through to certification and licensure. Addressing Maryland's educator diversity disparity requires multi-pronged initiatives that meet candidate educators, specifically those of color, where they are. For students to reap the benefits of strong instruction, their teachers must be adequately prepared and sufficiently equipped before setting foot in the classroom. For EPPs providers to become rigorous institutions that fulfill the Blueprint's aims, their models must include multifaceted support systems for every candidate teacher.

EPP Completion Status Quo

The following figures display current completion rates across all traditional and alternative EPPs in Maryland.[5] These rates underlie the basis for forthcoming completion projection analyses.

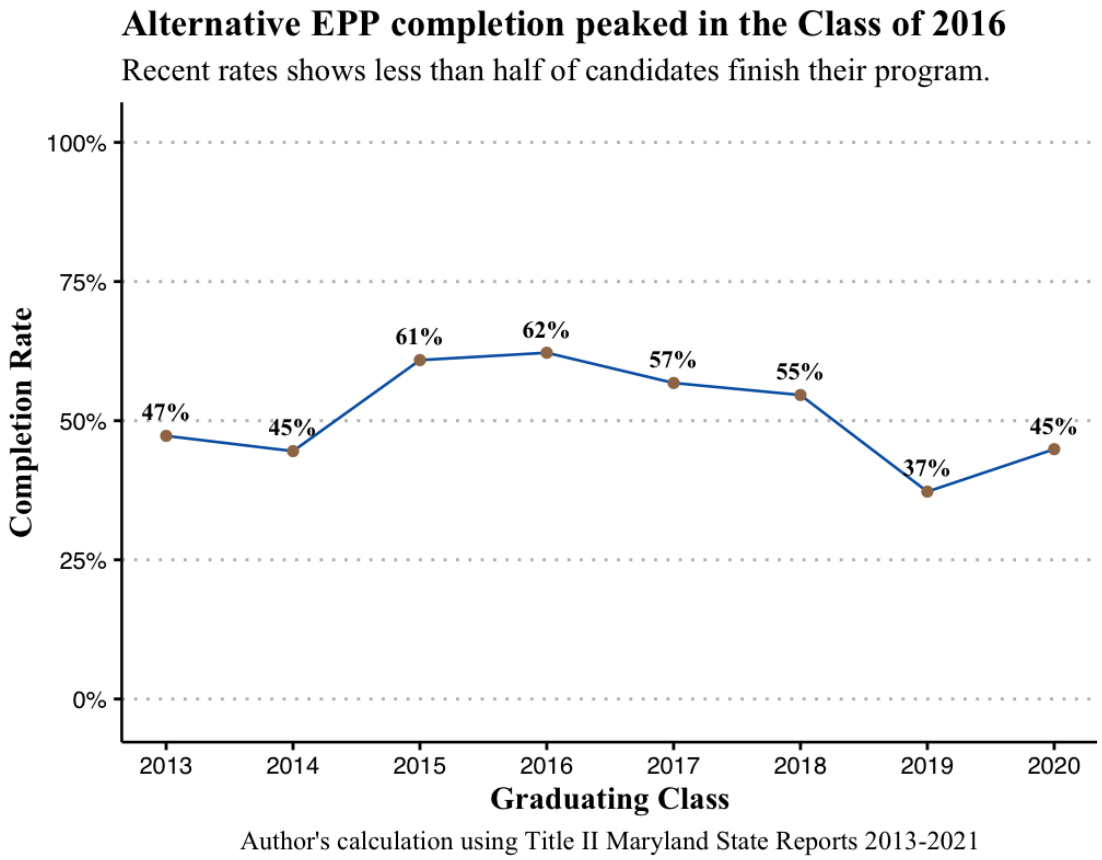
Figure 7. Traditional EPP Completion, Classes of 2015-2020



Author's calculation using Title II Maryland State Reports 2013-2021

[5] These completion rates are calculated assuming traditional EPP students (i.e., those attending institutions of higher education) complete their degree in 4 years while alternative EPP students complete their programs in 2 years (the typical length of most residencies).

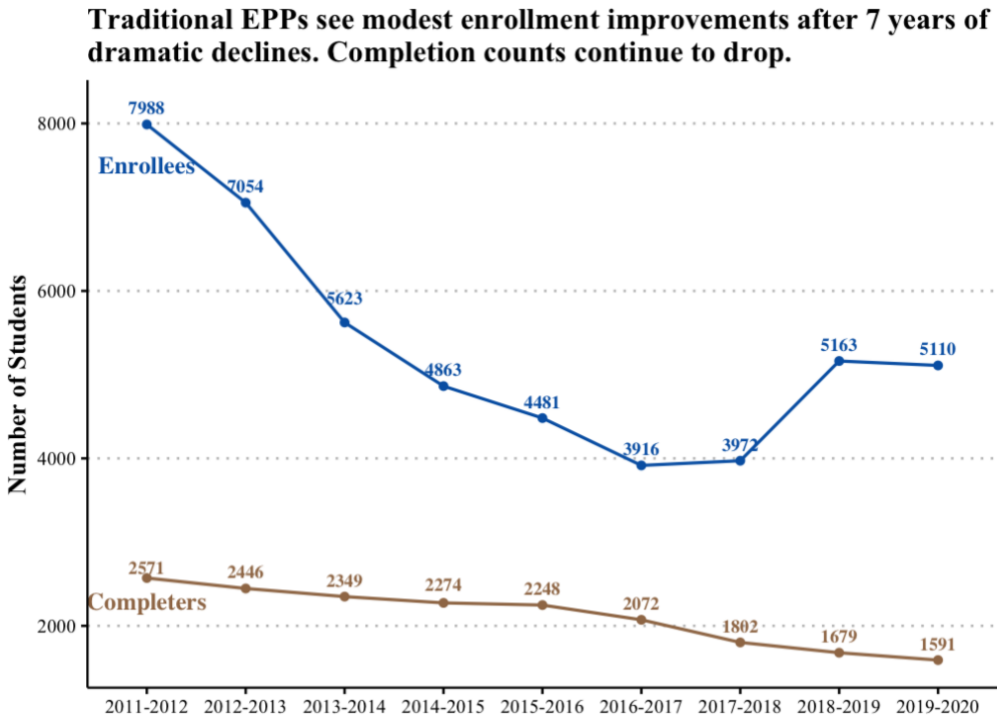
Figure 8. Alternative EPP Completion, Classes of 2013-2020



Author's calculation using Title II Maryland State Reports 2013-2021

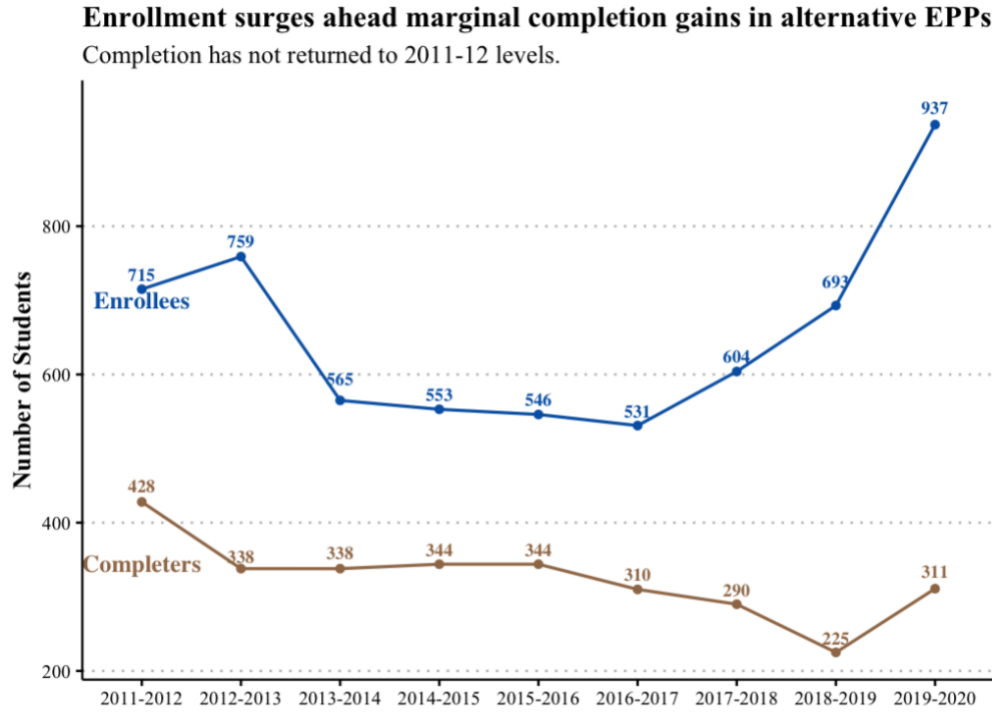
It is important to note the small increases in traditional EPP completion rates can be explained by dramatic declines in traditional EPP enrollment. This trend is displayed in Figure 9 below.

Figure 9. Traditional EPP Completion v. Enrollment Count, 2013-2021



Source: Title II Maryland State Reports, 2013-2021.

Figure 10. Alternative EPP Completion v. Enrollment Count, 2013-2021



Source: Title II Maryland State Reports, 2013-2021.

Trends illustrate small strides toward enrollment recovery but low levels of completion overall. Program persistence is necessary to improve the status quo of completion in traditional and alternative educator preparation programs.

There are several theorized reasons underlying why completion rates are as low as they are. Candidates in teacher residencies often complete rigorous coursework in an expedited timeframe, find schools for their internship, interview for a full time position, and then work full time as they study for certification exams and prepare final portfolios.[6] Without adequate support, the risk of fatigue and burnout are likely high, especially as teacher candidates become intensely exposed to systemic inequities in schools. Unexpected material costs can increase unaffordability for students from lower incomes, making program completion financially inaccessible. Comparatively, students in traditional EPPs may switch their major, transfer to different schools (perhaps out of state), or struggle to pass their Praxis I which can prevent them from enrolling in upper division classes.[xxiii]

The enrollment increases captured above signal recruitment efforts are helping improve entry, but this recruitment brings little impact to workforce composition without retention and completion. The following proposed alternatives seek to address this persistent problem by strengthening access to two key aspects of program experience: financial aid and individualized mentoring.

[6] In an interview with David Rease, Director of Prince George's County's Public Schools Office of Equity and Excellence, it was shared that conditionally certified teachers (who are predominately Black) don't receive enough support to pass their certification exams, particularly the Praxis I. Rease spoke to a misalignment between the daily work of teachers (fire drills, lunch duties, covering classes, working with parents) and exam content. Particularly for teachers of color, there are forms of non-instructional labor which take a psychological toll and can create feelings of disconnection or fatigue that drive folks to leave the district. Candidate teachers of color face similar barriers and risks of exit as they progress through their EPP.

Recommended Alternatives

The following discussion provides a brief description of the proposed alternatives' mechanics and costs. The table below also summarizes this information.

Table 1. Alternative Descriptions and Estimated Cost

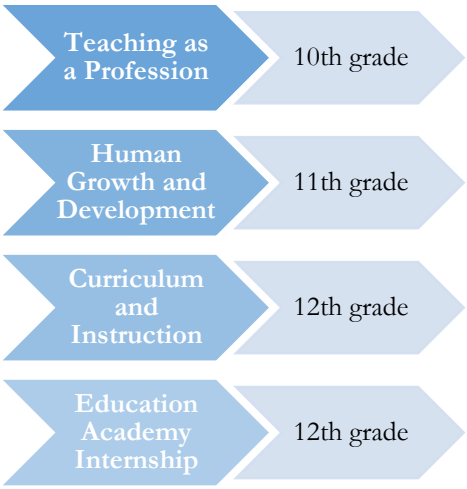
Proposed Alternative	Alternative Design	Estimated Cost
Standardized TAM Articulation Agreements with MSIs	TAM students admitted to Coppin State, Morgan State, or Bowie State receive 6 college credits and an $3,000 annual scholarship (max of 8 semesters).	$13,251 per candidate
Intensive In-Person Mentor Teacher Pact	Upon EPP admission, candidates are matched with experienced teachers of color. Mentors and mentees meet in-person on a (bi-)weekly basis and co-teach during the candidate's teaching internship.	$6,000 per candidate
Guided Virtual Mentorship	Upon EPP admission, candidates are matched with experienced teachers of color. Mentors and mentees meet virtually atleast 4 times a semester.	$3,000 per candidate

Standardize TAM Articulation Agreements with Minority Serving Institutions

The Teacher Academy of Maryland (TAM) is a Career and Technical Education (CTE) program offered in various high schools. It is the equivalent of a precollegiate Grow Your Own program.

Enrollees take four courses and complete student teaching internships between 10th and 12th grade. Students who successfully complete coursework with a cumulative GPA of 3.0 and program portfolio are eligible to receive college credit and scholarships from a variety of institutions.[xxiv]

Figure 11. TAM Course Sequence



Currently, interested TAM students can earn an Associate's of Arts in Teaching from their local community college. While this agreement is standardized across community colleges, four year institutions offer vastly different articulation agreements. For instance, a TAM student could receive 6 credits from Frostburg University, 3 credits from Bowie State, or 9 credits from Notre Dame of Maryland. Frostburg and Bowie offer no scholarships for TAM students while Notre Dame offers $6,000 each semester for up to 8 semesters.[xxv] These differences in articulation agreements means TAM students who complete the same high school coursework receive vastly different collegiate benefits that affect their ability to complete their EPP.

Given this reality, I propose Maryland establish standardized articulation agreements, specifically with MSIs. It is more feasible to partner with the 3 MSIs currently with TAM articulation agreements (Bowie State, Coppin State, and Morgan State) rather than all 12 institutions. Additionally, MSIs attract more students of color, making them valuable partners in workforce diversification.[xxvi]

Under this proposal, TAM students admitted to a partnering MSI would receive 6 credits and a scholarship of $1,500 per semester, renewable for 8 semesters. Compared to existing articulation agreements, this is an additional 3 credits and four times as much funding offered at Coppin State, the only MSI that currently offers any aid. This proposal includes covering the cost for students to take Praxis exams and purchase study materials. To ensure TAM students who earn this aid go on to work in the district, MCPS could stipulate students agree to work for the district for 3-4 years upon earning their certification.

Establish Intensive In-Person Mentor Teacher Pact

Candidate educators receive different teacher mentors throughout their program. Mentors are experienced educators who support candidates to achieve specific goals. For our purposes, experienced educators are those with at least 5 years of experience. Research consistently reports the strength of mentoring relationships and induction supports play critical roles in retaining new teachers. following this logic, mentorship for candidates is even more important to prepare them for the realities of their job, especially as they take on classroom responsibilities during their internships.[xxvii]

Under this proposal, districts would partner with EPP providers (traditional or alternative) to match Black and Hispanic candidate teachers with experienced teachers of color. Mentors and mentees will meet in-person on a weekly basis in the early weeks of the candidate's program before transitioning to a bi-weekly meeting schedule for the time preceding the candidate's internship. This equates to 6-8 meetings per semester depending on a program's length. Mentors support mentees through consistent coaching and will serve as the teacher of record during the candidate's internship.

Teachers who become mentors will receive 3 MSDE credits towards their license renewal. They would also receive a $500 stipend for each semester of their candidate's program (up to 8 semesters) and an additional $1,000 in the student's final semester upon completion of candidate's internship or residency.[7] Each mentor-mentee pair receives a $1,000 supplemental budget that can be used to offset the cost of examination costs and other professional development supports. Mentors can support a maximum of two candidates an academic year, receiving double the payment.[8]

Provide Guided Virtual Mentorship

Embedding virtual mentorship into EPPs overcomes the time and space constraints that typically arise with in-person mentoring. Virtual programs also promote technological training and exposure to varied teaching methods necessary for hybrid learning environments. Sometimes referred to as *e-mentoring*, online mentorship networks are reported to boost confidence and retention of African American and Hispanic students.[xxviii] There is a dearth of quasi-experimental research on the impacts

[7] Stipend figure modeled after current MCPS rates for mentors. The additional $1,000 completion bonus is intended to incentivize mentor participation and accountability. Nevertheless, this incentive structure could produce a perverse effect where mentors push their mentees to finish their program even if the candidate realizes education/teaching is *not* the right profession for them. Care should be taken to ensure mentors are fostering healthy relationships with their mentees and not pushing them to complete for the sake of reclaiming the completion bonus.

[8] This supposes mentors are advising two students in different stages of the same EPP (e.g., co-teaching with a final semester traditional student while supporting the induction of a first year student). Mentors work part time, thus limiting their caseloads is intended to promote concentrated individualized support and strong relationship development between mentors and their candidate(s).

of virtual mentoring on college completion. However, several studies find positive correlational evidence of virtual mentorship for undergraduate and graduate students in nursing, education, and biotechnology. [xxix] Several studies also find positive effects of virtual advising with preservice music teachers,[xxx] low- and moderate-income high school students,[xxxi] and first-term preservice teachers.[xxxii]

Under this proposal, candidate teachers will be matched with experienced teachers of color in MCPS. Mentors and mentees will meet virtually a minimum of 4 times each semester.[xxxiii] Outside of routine structured check-ins, virtual mentorship entails mentors conducting 2 virtual classroom observations during the candidate's teaching internship. Teachers who become mentors will receive 3 MSDE credits towards their license renewal. Mentors receive a $250 stipend for each semester of their candidate's program.[xxxiv] Mentors can support up to three candidates an academic year, earning a maximum of $750/semester. Matched pairs will also receive a $1,000 supplemental budget to support the candidate's professional development and offset examination costs.

Table 2. Mentorship Design Model Differences

Intensive In-Person Mentoring	Guided Virtual Mentoring
◊ 1 week per week for first month ◊ Additional 4-6 meetings per semester ◊ 5-8 week Co-Teaching Internship ◊ $1,000 professional development budget to support teacher candidate ◊ $500 stipend/semester for mentor (max $1,000 stipend supporting 2 mentees)	◊ Minimum of 4 meetings per semester ◊ 2 Virtual Classroom Observations ◊ $1,000 professional development budget to support teacher candidate ◊ $250 stipend/semester for mentor (max rate of $750 supporting 3 mentees)

Criteria Overview

Proposed alternatives will be evaluated using four criteria: efficacy, equity, cost effectiveness, and administrative feasibility. The evaluations of each alternative are summarized in an outcome matrix on page 27.

- ◊ Efficacy: an estimate of the extent to which the alternative could increase completion amongst Black and Latino candidates. Projections use existing Title II data on completion rates by race and program type (i.e., traditional versus alternative EPP).

- ◊ Equity: an evaluation of programmatic features, such as stipends and scholarships, with the potential to increase the equity of a candidate teacher's learning experience. These features facilitate access to social, navigational, and professional capital that increases candidate's ability to complete their program with a full range of support.

- ◊ Direct Costs: calculates the core implementation costs incurred to the school district to execute each alternative.

- ◊ Administrative Feasibility: assesses potential administrative hurdles that may interfere with policy implementation. This criterion primarily captures the need for additional staff or increase responsibilities or resource needs for existing staff.

Analytical Scope and Underlying Assumptions

For feasibility, alternatives are evaluated at a district level using Montgomery County Public Schools (MCPS) as a case study. MCPS is the most populous county in Maryland. Montgomery County has the state's highest share of Hispanic residents and is adjacent to Prince George's County with the state's highest share of Black residents. This makes the county an ideal site to recruit candidate teachers of color. MCPS is also a former member of the Bridges Collaborative. Keeping analysis at a district level allows other districts who are current Bridges member to draw parallels and consider the feasibility of adopting the proposed strategies to diversify their own teaching workforce.

The following analysis presumes EPP providers in Montgomery County will collaborate to do the following, regardless of which alternative is implemented:

1. Establish explicit completion goals for candidate educators of color,
2. Support enrollees to complete their coursework *and* certification exams, and
3. Expand outreach to aspiring teachers of color, particularly those from lower incomes and/or in intensely segregated neighborhoods.

Montgomery County minimally fulfilled these actions by outlining the expected impact of the activities funded by their Grow Your Own Staff grant. The County expects to increase the number of teachers of color by three percent over five years, recruit 150 teachers in criterial needs areas over the next four years, and have 75 percent of candidates continue employment with the school system.

Status Quo in Montgomery County Public Schools

White teachers are intensely over-represented in MCPS. In 2021, a quarter of students identified as white. Meanwhile, 71 percent of teachers were white. The district's white teacher-student parity is at 2.93 - meaning almost three times as many white teachers are in the district relative to white students. MCPS' Black teacher-student parity is 0.56 and its Hispanic parity is 0.23. This means MCPS employs

56 percent and 23 percent of the total number of Black and Hispanic teachers needed to match student demographics.

The table below outlines a "Parity Goal" for each racial group. This goal is the number of teachers needed to be proportional with MCPS student demographics (i.e., parity = 1). [9]

Table 3. MCPS Black, Hispanic, and White Teacher-Student Parity Goals

	Black	Hispanic	Black & Hispanic Total	White
Teachers	1,676 *(12.3%)*	1,088 *(8.0%)*	2,764 (*20.3%*)	9,754 *(71.5%)*
Students	35,000 *(21.8%*)	55,551 *(34.6%)*	90,551 (*56.4%)*	39,175 *(24.4%)*
Parity Goal	2,975	4,722	7,697	3,330
Net Difference	+1,299	+3,634	+4,933	-6,424

Whether MCPS reaches the outlined Parity Goal or not, the district's ability to meet its 3 percent diversity goal requires candidate educators of color complete their preparation program and all necessary examination components. **In other words, greater teacher-student parity is dependent upon higher EPP completion rates**.

[9] If MCPS' outlined GYO grant activities have their expected impact, a three percent increase in teachers of color over the next five years adds an estimated 406 additional teachers (grouping Hispanic and Black teachers together) by 2027. Assuming MCPS' workforce remains near 13,646 teachers (its FY 2021 count) and its rate of diversification slightly increases, teachers of color would compose 26-30 percent of the workforce by 2034 – a 30-36 percent increase in diversity.[9]

Alternative Evaluation

In the assessment of each alternative below, completion projections are measured against a baseline that averages the completion rates for Black and Hispanic students in traditional and alternative EPPs using the most recent year of data available (2019-20).[xxxv]

The average alternative EPP completion rate for Hispanic and Black students is 42.5 percent (slightly lower than the 45 percent completion rate across all alternative candidates in 2019-20). For traditional EPPs, the baseline completion rate is 38 percent (slightly lower than the 41 percent completion rate for 2019-20). Calculations to determine baselines are in the Appendix.

Although Black and Hispanic students are grouped together for analysis' sake, my calculations find **Black students complete alternative EPPs at higher rates while Hispanic students experience higher completion within traditional programs.** While my recommended alternatives can be implemented through partnerships with traditional or alternative programs, readers should be mindful that Black and Hispanic candidates' have nuanced academic and professional development needs which may be better served in one program type relative to another.

Additionally, the number of teacher candidates served varies dramatically depending on the chosen alternative and partnership with a traditional and/or alternative EPP provider. Total cost estimates are calculated using the baselines for candidate teachers of color captured in Table 4.[xxxvi] Cost estimates also assume 11 cohorts of students are supported between 2024 and 2034. Estimates are adjusted for inflation.[xxxvii]

Table 4. Candidate Teacher Cohort Breakdown by Alternative

Proposed Alternative	Base Black and Hispanic Candidate Teacher Count
Standardized TAM Articulation Agreements with MSIs	*TAM Cohort:* 17 students
Intensive In-Person Mentor Teacher Pact	*Traditional EPP Cohort*: 64 students *Alternative EPP Cohort*: 5 students
Guided Virtual Mentorship	*Traditional EPP Cohort*: 64 students *Alternative EPP Cohort:* 5 students

Standardized TAM Articulation Agreements with MSIs

- *Efficacy:* It is estimated that standardized articulation agreements will increase the likelihood of EPP completion by 3-5 percentage points per cohort each year. Given that this alternative specifically serves students attending traditional programs at MSIs, only the completion benchmark for traditional programs (38 percent) is used. If MCPS selected this alternative, an additional 6-9 teachers of color in TAM are estimated to complete a traditional EPP by 2034, an 8-13 percent increase in completion.

  Estimates above use treatment effects found in literature on the impacts of financial aid on program retention and completion. Castleman & Long (2013) find grants of $1,300 (in year 2000 dollars) increase the probability of degree completion within 6 years by 4.6 percentage points. Goldrick-Rab and colleagues (2012) find an increase of $1,000 in total financial aid in a student's first year of college increased retention between 2.8 to 4.1 percentage points.[xxxviii]

Graduation rates among students who received a $3,500 annual grant were 5 percentage points higher relative to students who did not receive the grant. Since the proposed alternative is modeled after these grant amounts, articulation agreements are expected to produce similar impacts on traditional EPP completion.

Rather than quantify an impact of college credits, potential positive effects are integrated within the estimated impact of aid. There is mixed evidence on the impact of dual credit coursework. Giani et al. (2014) finds vocational dual credit courses have little impact on degree completion. Core academic courses are found to significantly increase program persistent and completion.[xxxix] Brian An (2013) finds a positive relationship between dual enrollment and degree attainment for first-generation students and low income students. An also finds most gains are for students who earn 6 credits, with little additional benefit above this limit and no effect below it.[xl] Currently, Morgan State, Bowie State, and Coppin State only provide TAM students with 3 credits; as such, the new standard should reap greater completion gains by reducing coursework burden once students enter their EPP.

◊ *Equity:* The $3,000 annual scholarship and vouchers for the Praxis exam reduce the need for students to take out loans. Instead of relying on loan forgiveness programs, TAM students receive proactive support guaranteed upon finishing high school coursework. Lack of financial aid is a driving force for degree incompletion for Black students.[xli] Hispanic students also report affordability challenges as they enter their first college program.[xlii]

Standardized articulation agreements create consistency in benefits for all TAM students – it is nonsensical for future teachers to start off their careers with similar foundations but receive vastly different supports to guide them to certification and licensure. It is important to note all TAM students, not just those identifying as Black and Hispanic, would be eligible to receive these supports.

◊ *Direct Costs:* Standardized articulation agreements are estimated to cost $13,251 per candidate. This cost estimate accounts for the maximum possible scholarship ($12,000), the estimated average cost of 3 additional credit hours ($951), and the estimated cost to cover a student's Praxis voucher and test prep supports ($300).

Assuming this alternative is funded between 2024 and 2034 (the period between full implementation of the Blueprint), MCPS would spend approximately a total of $3,717,119 (adjusted for inflation) over the next decade. This investment assumes a cohort of 20 TAM students enter traditional EPPs at MSIs each year. This equates to roughly a $397,000 to $662,000 investment per additional teacher of color.

◊ *Administrative Feasibility:* This program could be impactful for the handful of students currently in TAM. However, only a small number of students are served, and students may ultimately decide not to become teachers, making it is unlikely MCPS or partnering institutions will find the estimated level of investment feasible.

It will likely be challenging to convene leadership from Bowie, Morgan, and Coppin State. This alternative could make these institutions more competitive vis à vis other partnering TAM schools, making them open to revising their agreements. However, it is unclear whether these institutions have capacity to follow through with this level of collaboration. Curricular changes are likely needed to create consistent 6 credit articulation agreements. Making these changes

could take several months or years before implementation. Also, MCPS would need to invest in promoting standardized agreements to current TAM students who may prefer to attend another institution even with the newly introduced benefits.

Intensive In-Person Mentor Teacher Pact

◊ *Efficacy:* It is estimated that intensive mentoring for Hispanic and Black candidate teachers will increase the likelihood of EPP completion by 6-8 percentage points per cohort over the next decade. This assumes mentoring is executed with fidelity (i.e., all sessions are attended, co-teaching internship is completed) and the entirety of the candidate's $1,000 supplemental budget is spent.

If MCPS selected this alternative *and* partnered with a traditional EPP, an additional 42-56 teachers of color are estimated finish their EPP by 2034, representing a 16-21 percent increase in completion. If MCPS deepened its partnership with ACET, an additional 3-4 teachers are estimated to complete. This represents a 14-19 percent increase in completion for Black and Hispanic candidates.

Estimates above use treatment effects found in experimental research on the effects of intensive advising on program retention and completion. A robust analysis of the Bottom Line (BL) mentoring program by Barr and Castleman (2021) found BL students were 6.2-9.6 percentage points more likely to earn a bachelor's degree. In the BL context, degree attainment increases are explained by increased access to higher quality institutions. The impacts suggest a mentoring model with similar levels of intensity, such as co-teaching and frequent goal-oriented meetings, could be beneficial for teacher candidates.[xliii]

◊ *Equity:* Intensive mentoring advances equity through increased social capital and professional development supports for candidates. Current MCPS teachers also accrue benefits through reduced costs for license renewal which could potentially aid in teacher retention.[xliv] Burciaga and Kohli (2018) highlight that teachers of colors' identities are often central to their teaching pedagogies. Effective mentorship can foster a deep relationality that aids in candidates' perception of self-efficacy and belonging in the education workforce, increasing their likelihood of program persistence and completion. At a larger level, this mentorship pact would also demonstrate MCPS values the community cultural wealth its teachers of color bring into the classroom.

◊ *Direct Costs:* Intensive mentoring is estimated to cost $6,000 per candidate. This cost estimate accounts for the maximum possible mentor stipend ($5,000) and the cost of each mentor-mentee pair's supplemental budget ($1,000). Assuming this alternative is funded between 2024 and 2034, MCPS would spend approximately $5,385,909 (adjusted for inflation) over the next decade if they partnered with a traditional EPP and $420,774 if they worked with ACET. This investment assumes a cohort of 64 traditionally trained or 5 alternatively trained students of color. This is roughly a $95,000 to $127,000 investment per additional teacher of color.

◊ *Administrative Feasibility:* A significant administrative hurdle to this alternative is gathering capacity to recruit diverse mentor teachers, particularly given the lack of diversity currently in the district. Capacity constraints may be more pronounced amongst alternative programs. An interview with Glenda Hernandez, Executive Director of Montgomery College's Alternative

Certification for Effective Teachers (ACET) revealed the program has no full-time staff. As such, considerations as to how EPP providers with only part-time staff can support mentor-mentee development need to be weighed.[xlv] Additionally, there are different mentor-mentee match systems the district would need to consider investing in (e.g., random-assignment or subject area alignment).

It is likely MCPS and EPP partners would support the costs of intensive mentoring because the action requires stipends rather than substantial salary increases. The district's FY2024 recommend budget shows a $9,000 increase in stipends compared to current stipend allocations within the Department of Human Capital Management which supports teacher mentors under the University Partnerships division.[xlvi] Support would likely be stronger for ACET partnership as the total increase in spending is significantly lower than partnering with a surrounding institutions of higher education.

Guided Virtual Mentorship

◊ *Efficacy:* It is estimated that guided virtual mentoring for Hispanic and Black candidate teachers will increase the likelihood of EPP completion by 3-4 percentage points per cohort over the next decade. This assumes mentoring is executed with fidelity (i.e., all sessions are attended, classroom observations are completed) and the entirety of the candidate's $1,000 supplemental budget is spent.

If MCPS selected this alternative *and* partnered with a traditional EPP, an additional 21-28 teachers of colors are estimated finish their EPP by 2034, representing an 8-11 percent increase in completion. If MCPS deepened its partnership with ACET, an additional 1-2 teachers are estimated to complete. This represents a 7-9 percent increase in completion for Black and Hispanic candidates.

There is no rigorous quasi-experimental research on the quantified impacts of *virtual* mentoring on college completion. All found studies are correlational or consider impacts of virtual advising on college enrollment. Given this, estimated completion effects are modified using effects found in previously cited in-person advising literature.[10] Since this option entails considerably lower levels of mentoring and no co-teaching component, it is presumed to be half as effective as the in-person option. It is also possible teacher candidates – especially in longer traditional EPP programs – may develop fatigue from the repetitive virtual engagement over time, furthering lowering the potential efficacy of this alterative.

◊ *Equity:* Akin to the previous alternative, candidates receiving virtual mentorship benefit from professional development supports and efficient access to job knowledge. Virtual classroom observations likely will support candidate's perceptions of their self-efficacy and technological capabilities. Virtual mentorship creates flexibility however, it is not found to promote relational longevity amongst students.[xlvii] The lack of physicality and decreased frequency of e-mentoring means candidates and mentors need intentional tools to aid in strong relationship development. Nonetheless, through engaged mentorship, candidates can complete their EPP and enter the early years of their career with a solid foundation.

[10] The estimated completion impact parallels the impact of a virtual mentoring program, CollegePoint, on enrollment at higher-quality institutions. Sullivan and colleagues found CollegePoint increased enrollment by 3.2 percentage points and students assigned to CollegePoint were 1.3 percentage points more likely to attend higher-quality institutions.

◊ *Direct Costs:* Virtual mentoring is estimated to cost $3,000 per candidate. This cost estimate accounts for the maximum possible mentor stipend ($2,000) and the cost of each mentor-mentee pair's supplemental budget ($1,000). Assuming this alternative is funded between 2024 and 2034, MCPS would spend approximately $2,692,955 over the next decade if they partnered with a traditional EPP and $210,387 (adjusted for inflation) if they worked with ACET. This investment assumes a cohort of 64 traditionally trained or 5 alternatively trained students of color. This is exactly half the implementation costs as in-person mentoring but amounts to the same $95,000 to $127,000 investment per additional teacher of color.

◊ *Administrative Feasibility:* Virtual mentoring overcomes many time and space constraints introduced by in-person mentorship. This alternative is more accessible but will require modest amounts of planning to ensure the program is beneficial to mentees and mentors. Limited capacity to recruit diverse mentors and match them with candidates is a drawback of their proposal. However, since virtual mentors are permitted to have a slightly larger caseload, fewer of them are needed – easing net capacity concerns.

The district's FY2024 budget proposal signals stipend investments are favored over part-time salary increases; as such, the low net stipend amount for this alternative could be attractive to MCPS. Despite the cost savings, this option's lower estimated efficacy could deter MCPS and EPP providers, as the significant per candidate investment produces small completion gains.

Outcomes Matrix

	Efficacy	Equity	Direct Costs	Admin Feasibility
Standardized TAM Articulation Agreements	8-13% increase in traditional completion	Lowers potential loan burden; promotes experiential alignment	$13,251 per candidate	May require curricular adjustments; large investment may produce small gains
Intensive In-Person Mentor Teacher Pact	16-21% increase in traditional completion ~ 14-19% increase in alternative completion	Increases social + navigational capital; promotes collegiality	$6,000 per candidate	Mentor recruitment and match concerns; suggestive support from MCPS leadership
Guided Virtual Mentorship	8-11% increase in traditional completion ~ 7-9% increase in alternative completion	Increases social + navigational capital; promotes technological skill	$3,000 per candidate	Mentor recruitment and match concerns; larger caseloads require fewer mentors

Intensive in-person mentoring is projected to generate the greatest completion gains. This alternative is twice as costly as virtual mentoring but will likely support completion more effectively through its intensity and co-teaching internship component. Standardized articulation agreements are estimated to be more efficacious than virtual mentorship but requires a larger investment per candidate. However, the costs of implementing standardized articulation agreements are dispersed over the course of a candidate's program. In semester expenditures, MCPS would spend an estimated $1,500

to support each TAM-turned-EPP candidate; $750-1,000 to support each intensively mentored candidate; and $500-$750 to support each virtually mentored candidate.[xlviii11]

Notably, each alternative in isolation is limited in its ability to positively transform teacher candidate's EPP experience. Although a single alternative is recommended below, **there is strength in interweaving different policies and programs together. All three options have potential to improve EPP completion and may be more feasible in other school systems.**

Recommendation

Based on the analysis, I recommend MCPS partner with EPP providers to **establish an intensive in-person mentor teacher pact**. This alternative ranks highest in efficacy and provides candidate teachers with social and fiscal capital that can be leveraged to successfully complete their EPP. Of all the alternatives proposed, intensive mentorship also encourages the greatest connectivity between MCPS teachers and candidates, promoting a high level of collegiality and collaboration necessary to develop quality teaching pedagogy and strong professional networks.

Compared to standardized articulation agreements, which would only support a proportion of TAM students entering traditional EPPs, intensive mentorship supports a wider range of potential Black and Hispanic candidate teachers. Success in both mentoring proposals is based on assumption that experienced teachers of color are motivated to support and work with their mentee to meet specific goals. There is also an assumption that selected mentors possess cultural competency (specifically racial and class consciousness) and have readily available meeting space.

While virtual mentorship could overcome physical meeting constraints, there is not strong evidence that virtual relationships would be sustained in the long term. Though candidates may receive robust support during their mentorship, once they enter the workforce having sustained professional support becomes even more crucial to lower the likelihood of turnover.

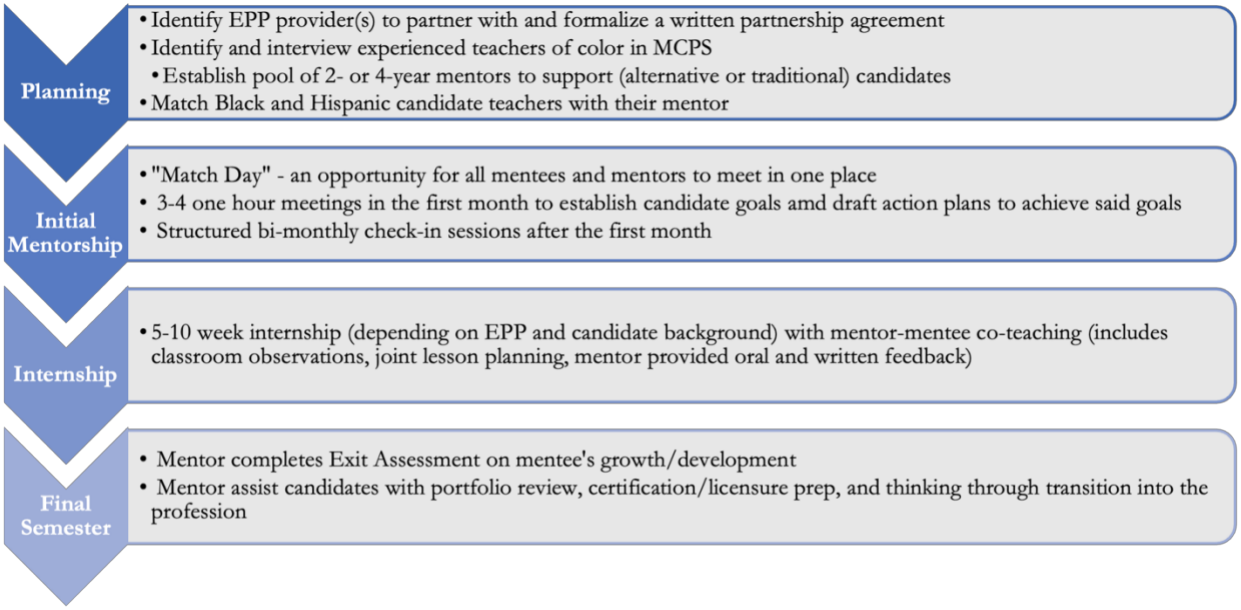
Due to the compelling evidence supporting intensive mentoring as well as the longevity of its benefits, option two is the most likely to successfully redress EPP completion inequities. MCPS is well positioned to leverage its existing partnerships with EPP providers in the region to better support candidate teachers entering their programs.

Suggested Implementation

This reports employs a backwards mapping approach to implementation.[xlix] Backwards mapping acknowledges the power differentials between policymakers (e.g., MCPS Board of Education; MSDE) and policy implementers (in our case, EPP staff, mentor teachers, and candidate mentees) which often leave implementors without ample support to execute policies. Caroline Dyer explains this approach has "an understanding of the discrepancy between actual and desired practice which the policy message will seek to close."[l] The process map below outlines *desired practices* for each implementation phase, then transitions to a discussion of potential barriers that could interfere with implementation.

[11] It is worth highlighting the costs to implement all the proposed initiatives, if MCPS partners with ACET, cost less than the total GYO grant the district received from the state. In theory, the district could implement all these initiatives for a single year and spend an estimated $322,421. MCPS would have roughly $411,220 in GYO funding remaining.

Figure 12. Proposed Intensive Mentoring Implementation Process



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The Risk of Teacher Mentor-Mentee Mismatch

A meaningful mentorship experience is one in which candidate teachers are provided feedback that builds their confidence and knowledge of best classroom practices. Although mentor teachers of color may share their mentee's racial/ethnic background, not all skin folk are kinfolk. A sour mentor experience could be greatly upsetting for a candidate, leaving them discouraged or feeling unsupported, and increasing the odds they don't complete their program.

Mentees may not mesh well with their mentor for several reasons, whether it be due to conflicting values, contrasting communication styles, subject area misalignment, or scheduling inflexibility that hinders frequent connection-making. It is most likely scheduling inflexibility will place constraints on mentor pairs. As such, a consistent meeting schedule should be established within the first 1-2 meetings following Match Day. Even more, although mentors initiate initial connection with their mentees, there is a chance candidates don't respond to this outreach since they are simultaneously attending to other academic, work, and life responsibilities. Follow-up strategies will likely need to be developed.

On the note of non-response, there is risk of low take-up for mentors. If mentoring greatly interferes with teachers' existing responsibilities or ample resources are not provided to matched pairs then participation will likely falter. It is paramount that mentors have access to all necessary resources (including time and physical space) and that mentees have a clear understanding of their autonomy in shaping their mentoring experience to be most fruitful for them.

Central Actors in Planning: MCPS & EPP Providers

MCPS will need to solicit partnerships with EPP providers and support staff in determining how to best match candidate teachers. Memorandums of understanding between MCPS and EPP providers stipulating the respective responsibilities of each body and length of partnership should be drafted. From this point, MCPS and EPP providers would move forward with two key tasks: developing the mentorship curriculum and recruiting mentor teachers.

The mentorship curriculum itself is an essential component that creates consistency in the mentoring experience. This curriculum should include the planned activities all mentor pairs participate in, strategies for a successful co-teaching experience, instruments to track progress towards candidate's learning goals, and assessments to evaluate performance of the candidate and their mentor. Mentorship benchmarks should be informed by the EPP curriculum to ensure a connection between what candidates learn and what guidance their mentors provide. Many Maryland EPP providers already have mentorship or coaching models embedded into their programs; these models could be adapted to increase their intensity to the proposed level.

To successfully recruit experienced teachers of color to serve as mentors, MCPS and the partnering EPP(s) need to organize information sessions, connect with school administrators to solicit nominations, and reach out directly to teachers with mentoring experience or potential to be engaging mentors. There is a human capacity constraint to this work. Again, ACET has no full time staff. If MCPS were pursue this program with them, there is legitimate concern about a lack of dedicated staff to coordinate mentorship recruitment and matching and ensure mentor-mentee accountability. Additional staffing costs not accounted for the estimates above may be incurred.

To partly address this capacity constraint, mentor selection processes could be simplified, opting for virtual or in-person behavioral interviews and endorsements from a supervising school leader rather than written applications processes that can be more time-intensive due to application reading.

In the long term, MCPS and partnering EPP providers should pursue opportunities to keep mentored cohorts in contact with one another. Building this network will likely strengthen candidates' sense of community and heighten their access to peer support as they become teachers of record.

Relevant Regulatory Actors: MCPS Board of Education

Although the MCPS Board of Education does not play a direct role in implementing intensive mentoring, they are a central local stakeholder with a commitment to distributing resources to advance district goals (such as workforce diversification). Given MCPS' history of pursuing equity-driven workforce initiatives, it is likely the Board will be supportive of intensive mentoring. Their support would likely advance the longevity and expansion of the mentoring program if shown to be successful.

Conclusion

By pursuing intensive mentoring, MCPS (and other Maryland school systems) have an opportunity to narrow resource and opportunity gaps that disproportionately hinder the completion of candidate teachers of color. A sense of belonging and easy access to institutional support is vital to ensuring teacher candidates' success in their program, and beyond. Investing in a program that can foster enduring professional relationships between current and future teachers advances this aim.

It is not enough to recruit diverse candidates; school leaders and staff must also work with candidates to create a fulfilling learning experience. *Teacher candidates, whether in an alternative or traditional EPP, are students who need caring communities of practices.* Intensive mentoring creates more individualized professional development, increasing the odds that candidates feel capable of completing their preparation program. Although EPPs are only one stop on a teacher's journey, these programs lay a pivotal foundation that shape candidates' perceptions of their self-efficacy and passion for teaching. Investing in Black and Hispanic candidates' success is a non-negotiable if MCPS, and Maryland more broadly, desires to create a diverse, high quality teaching workforce.

Appendices

Appendix A. Calculating EPP Completion Base Rates

The base completion rates for EPP students are calculated using Title II data from the most recent year available (academic year 2019-20). I assume traditional students complete their program in 4 years while alternative students complete theirs in 2 years.

In 2019-20, 96 Black students and 20 Hispanic students graduated from alternative programs (out of 311 total alternative candidates). Assuming these students finished their program in 2 years, they entered when total enrollment for alternative EPPs totaled 206 Black students and 52 Hispanic students. They have completion rates of 47 percent and 38 percent, respectively. Averaging these rates creates an alternative EPP base completion rate of 42.5 percent.

In comparison, 194 Black students and 95 Hispanic students completed traditional programs in 2020 (out of 1,591 traditional candidates). Assuming these students entered college in 2016, they enrolled amongst a total of 680 Black students and 204 Hispanic students. Their class's completion rates are 29 percent and 47 percent, respectively. Averaging these rates lead to a traditional EPP completion rate of 38 percent. These rates suggest Black students complete alternative EPPs at higher rates than traditional EPPs while Hispanic students experience higher rates of completion in traditional EPPs.

Appendix B. Efficacy Calculations

Standardized Articulation Agreements		
Traditional Completion Base	38%	
TAM Cohort Size	20	
TAM Students of Color	17	
Estimated Effect Low	0.03	
Estimated Effect High	0.05	
Base Count	6.46	teachers of color
Low End Count	6.97	additional teachers of color
High End Count	7.31	additional teachers of color
Low Est. Over 11 Cohorts	5.61	
High Est. Over 11 Cohorts	9.35	

Condition	**Total Teachers by 2034**	**% Change in Completion**
Status Quo	71.06	-
Low End Estimate	76.67	+ 7.89%
High End Estimate	80.41	+ 13.16%

Intensive In-Person Mentoring

Traditional Completion Base	38%			
Alternative Completion Base	43%	**Estimated Effect Low**	0.06	
Traditional Cohort Size	221	**Estimated Effect High**	0.08	
Trad Candidates of Color	64			
Alt. Cohort Size (ACET)	26			
Alt. Candidates of Color	5			
Base Trad	24.32	**Base Alternative**	2.125	teachers of color
Low End Count	28.16		2.425	additional teachers of color
High End Count	29.44		2.525	additional teachers of color
Low Est. Over 11 Cohorts	42.24	**Low Est. Over 11 Cohorts**	3.3	
High Est. Over 11 Cohorts	56.32	**High Est. Over 11 Cohorts**	4.4	

Condition	Total Trad. Teachers by 2034	% Change in Completion	Total Alt. Teachers by 2034	% Change in Completion
Status Quo	267.52	-	23.375	-
Low End Estimate	309.76	+ 15.79%	26.675	+ 14.12%
High End Estimate	323.84	+ 21.05%	27.775	+ 18.82%

Bowie State and University of Maryland College Park are the two closest traditional EPP providers to MCPS. Enrollment rates from these schools are used to estimate base cohort sizes.

Guided Virtual Mentorship

Traditional Completion Base	38%	**Estimated Effect Low**	0.03	
Alternative Completion Base	43%	**Estimated Effect High**	0.04	
Traditional Cohort Size	221			
Trad Candidates of Color	64			
Alt. Cohort Size (ACET)	26			
Alt. Candidates of Color	5			
Base Trad	24.32	**Base Alt.**	2.125	teachers of color
Low End Count	26.24		2.275	additional teachers of color
High End Count	26.88		2.325	additional teachers of color
Low Est. Over 11 Cohorts	21.12	**Low Est. Over 11 Cohorts**	1.65	
High Est. Over 11 Cohorts	28.16	**High Est. Over 11 Cohorts**	2.2	

Condition	Total Trad. Teachers by 2034	% Change in Completion	Total Alt. Teachers by 2034	% Change in Completion
Status Quo	267.52	-	23.375	-
Low End Estimate	288.64	+ 7.89%	25.025	+ 7.06%
High End Estimate	295.68	+ 10.53%	25.575	+ 9.41%

Appendix C. Cost Calculations

All cost calculations are adjusted for inflation using a rate of 1.04 annually.

Standardized Articulation Agreements			
***Price per Candidate**: $13,251*		**Price**	
2024	Cohort 1	$	275,621
2025	Cohort 2	$	286,646
2026	Cohort 3	$	298,111
2027	Cohort 4	$	310,036
2028	Cohort 5	$	322,437
2029	Cohort 6	$	335,335
2030	Cohort 7	$	348,748
2031	Cohort 8	$	362,698
2032	Cohort 9	$	377,206
2033	Cohort 10	$	392,294
2034	Cohort 11	$	407,986
	Total Cost	$	3,717,119

Since all TAM students, regardless of race/ethnic background, are eligible for the proposed benefits, the average TAM cohort size (n = 20) is used rather than solely the number of students of color.

Intensive In-Person Mentoring					
***Price per Candidate**: $6,000*		**Trad. EPP Price**		**Alt. EPP Price**	
2024	Cohort 1	$	399,360	$	31,200
2025	Cohort 2	$	415,334	$	32,448
2026	Cohort 3	$	431,948	$	33,746
2027	Cohort 4	$	449,226	$	35,096
2028	Cohort 5	$	467,195	$	36,500
2029	Cohort 6	$	485,883	$	37,960
2030	Cohort 7	$	505,318	$	39,478
2031	Cohort 8	$	525,531	$	41,057
2032	Cohort 9	$	546,552	$	42,699
2033	Cohort 10	$	568,414	$	44,407
2034	Cohort 11	$	591,150	$	46,184
	Total Cost	$	5,385,909	$	420,774

Only candidate teachers of color are eligible for either mentoring option. As such, costs account for the estimated number of candidates of color in a traditional or alternative EPP.

Guided Virtual Mentorship					
***Price per Candidate**: $3,000*		**Trad. EPP Price**		**Alt. EPP Price**	
2024	Cohort 1	$	199,680	$	15,600
2025	Cohort 2	$	207,667	$	16,224
2026	Cohort 3	$	215,974	$	16,873
2027	Cohort 4	$	224,613	$	17,548
2028	Cohort 5	$	233,597	$	18,250
2029	Cohort 6	$	242,941	$	18,980
2030	Cohort 7	$	252,659	$	19,739
2031	Cohort 8	$	262,765	$	20,529
2032	Cohort 9	$	273,276	$	21,350
2033	Cohort 10	$	284,207	$	22,204
2034	Cohort 11	$	295,575	$	23,092
	Total Cost	$	2,692,955	$	210,387

Appendix D. EPP Providers

Traditional EPP Providers - Institutions of Higher Education | N = 23
Bowie State University*
Coppin State University*
Frostburg State University
Goucher College
Hood College
Johns Hopkins University School of Education
Loyola University Maryland
Maryland Institute College of Art
McDaniel College
Morgan State University*
Mount St. Mary's University
Notre Dame of Maryland University
Peabody Institute Johns Hopkins University
Saint Mary's College Maryland
Salisbury University
Stevenson University
Towson University
University of Maryland Baltimore County*
University of Maryland College Park
University of Maryland Eastern Shore*
University of Maryland University College
Washington Adventist University*

Alternative EPP Providers | N = 9
Anne Arundel County Public Schools/Anne Arundel Community College
Anne Arundel County Public Schools/Notre Dame of Maryland University Resident Teacher Certificate Program
Baltimore City Teaching Residency
Baltimore County Public Schools - Goucher College
Montgomery County Public School -Montgomery College (ACET)
Prince George's County Public Schools - Notre Dame of Maryland University
Teach for America - Baltimore
Teach for America - Prince George's County Public Schools
Urban Teachers - Maryland
Washington College
(*) denotes a Minority Serving Institution

Endnotes & References

[i] Dissette, 2022
[ii] Fenwick, 2022
[iii] *Ibid.*
[iv] Haney, 1978
[v] Thompson, 2022
[vi] Teacher-Student Parity is a metric developed by Villegas, Strom, and Lucas (2012) comparing the proportions of teachers and students of a given race/ethnic group. In Maryland, teacher race demographics are only disaggregated for Black and white faculty. Hispanic/Latino, Asian, Pacific Islander, Native American, and Mixed Race faculty are collectively grouped into a category called "Other +."
[vii] Potter, 2022
[viii] Egalite et. al, 2015
[ix] Gershenson et. al, 2021
[x] Shirrell et. al, 2021
[xi] Carver-Thomas, D. & Darling-Hammond, L. 2017
[xii] Calculations use the Learning Policy Institute's turnover tool. Maryland's teacher vacancies are concentrated in large suburbs (Prince George's and Montgomery County) where the estimated cost of replacement is $11,000 per teacher.
[xiii] Bettini et. al, 2021
[xiv] Angrist & Guryan, 2004
[xv] Learning Policy Institute, 2016; Muñiz, 2020; Washington State Professional Educator Standards Board, 2016
[xvi] Valenzuela, 2017
[xvii] Case et al, 1998
[xviii] Ahmad & Boster, 2014
[xix] Maryland State Education Association, n.d.
[xx] Gitomer et al., 1999; Cuenca, 2022.
[xxi] National Council on Teacher Quality, 2021
[xxii] Barmore, 2016
[xxiii] At Bowie State, for example, it is recommended teacher candidates take Praxis I during their sophomore year. They must meet qualifying scores to gain admission to the professional phase of the curriculum at the beginning of their junior year.
[xxiv] TAM Program of Study outlined by Towson University.
[xxv] Teacher Academy of Maryland (TAM) Statewide Articulation and/or Scholarship Agreements
[xxvi] Most Minority Serving Institutions in Maryland are Historically/Predominately Black colleges and universities. TAM students in MCPS are overwhelmingly Hispanic however there are no explicitly Hispanic Serving Institutions in Maryland. This alternative may attract more Black students to TAM but do little to significantly increase the number of Hispanic students. Nevertheless, since MSIs are more diverse than their PWI counterparts, it is believe these institutions are better equipped to help Black and Hispanic students alike persist through their programs.

[xxvii] Ingersoll, R. M., & Strong, M., 2011
[xxviii] Muller C., 2003; Dahlman, 2022
[xxix] Khan et al., 2010; Condon et al., 2013
[xxx] Reese, 2017
[xxxi] Sullivan et al., 2021
[xxxii] Le Cornu, 2005
[xxxiii] Assumes mentors and mentees meet for atleast 1 hour. Virtual Mentors can work a maximum of 12 hours/semester.
[xxxiv] Stipend figure modeled after current MCPS rates for mentors. https://www2.montgomeryschoolsmd.org/departments/professionalgrowth/mentors/news2/2022/march/first-semester-mentor-stipends/
[xxxv] Completion data disaggregated by race is only available for the 2018-19 and 2019-20 academic years.
[xxxvi] Assumptions attempt to account for potential variation in participation among alternative and traditional EPPs. The average class size in MCPS-Montgomery College's Alternative Certification for Effective Teacher (ACET) program is 19 students. The average class size in the Teaching Academy of Maryland (TAM) across the 2 high schools in MCPS offering the program is 18 students. Black and Hispanic students compose varying degrees of the student population in each of these programs. For instance, at JFK High School, 17 students enrolled in TAM, most of which were Hispanic women. Enrollment data from Bowie State and UMD College Park are used to estimate my base for traditional students because they are closest institutions to Montgomery County and serve a decent sum of Black and Hispanic students. Traditional EPP candidates and mentors for students would ultimately earn greater funding over time due to the longer length of traditional programs.
[xxxvii] Cost calculations use a 4% inflation rate. Year by year cost breakdowns are included in the appendix.
[xxxviii] Goldrick-Rab et al., 2012
[xxxix] Giani et al., 2014
[xl] An, 2013
[xli] Shapiro et al., 2013
[xlii] Sablosky Elengold, et al., 2020
[xliii] In this study's context, teacher candidates receive mentorship *after* their admission to an EPP. As such, projected completion increases are considered a result of several factors including student's improved perceptions of teaching efficacy, strength of their co-teaching relationship, and placement with an experienced teacher of color who provides pedagogical and institutional know-how on a consistent basis – increasing candidate's ability to successfully navigate their coursework and job responsibilities.
[xliv] Licensure renewal requirements can be found at https://www.marylandpublicschools.org/about/Documents/DEE/Certification/RenewalRequirements2020.pdf
[xlv] Back in 2018, MCPS began the Building Our Network of Diversity (BOND) Project with a focus on the recruitment, development, and retention male educators of color.[xlv] To ease human capacity constraints, MCPS may consider partnering with BOND to recruit mentors.
[xlvi] https://www2.montgomeryschoolsmd.org/siteassets/district/departments/budget/fy2024-recommended/fy2024_recommendedbudget_web.pdf
[xlvii] Briscoe, 2019
[xlviii] Semester expenditures for virtual and in-person mentorship account for the mentor stipend and a quarter-to-half of a candidate's supplemental budget (assuming candidates split their budget evenly across all semesters of their program).
[xlix] For backwards mapping, two key questions are considered across several actors responsible for executing components of intensive mentoring.

1. What ability does this actor have to affect a candidate teacher's mentoring experience?
2. What resources does this actor require to cultivate a successful mentoring experience?

[l] Dyer, 1999
[li] The mentor teacher is the teacher of record and is the authority for content, implementation, and classroom management.
[lii] Exit Assessment pulled from Michigan State University Roles and Responsibilities of Mentor Teachers.

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