

Commission on Innovation and Excellence in Education
William E. Kirwan, Chair

Agenda

January 8, 2018
9:30 a.m.-5:00 p.m.
120 House Office Building, Annapolis, Maryland

9:30 a.m. Chair's Opening Remarks

9:35 a.m. Invited Commentary on Commission Preliminary Report

- Norman R. Augustine – Retired Chairman and Chief Executive Officer, Lockheed Martin Corporation; Former Under Secretary of the Army
- Dr. Nancy S. Grasmick – Former Maryland State Superintendent of Schools
- Dr. David P. Driscoll – Former Commissioner of Education, Massachusetts

10:45 a.m. Discussion and Finalize Draft Preliminary Report

12:00 p.m. Lunch

Lunch Provided for Commissioners and Staff in Room 180

1:00 p.m. Finish Discussion of Draft Preliminary Report

2:30 p.m. Next Steps

- Legislation
- Workgroups

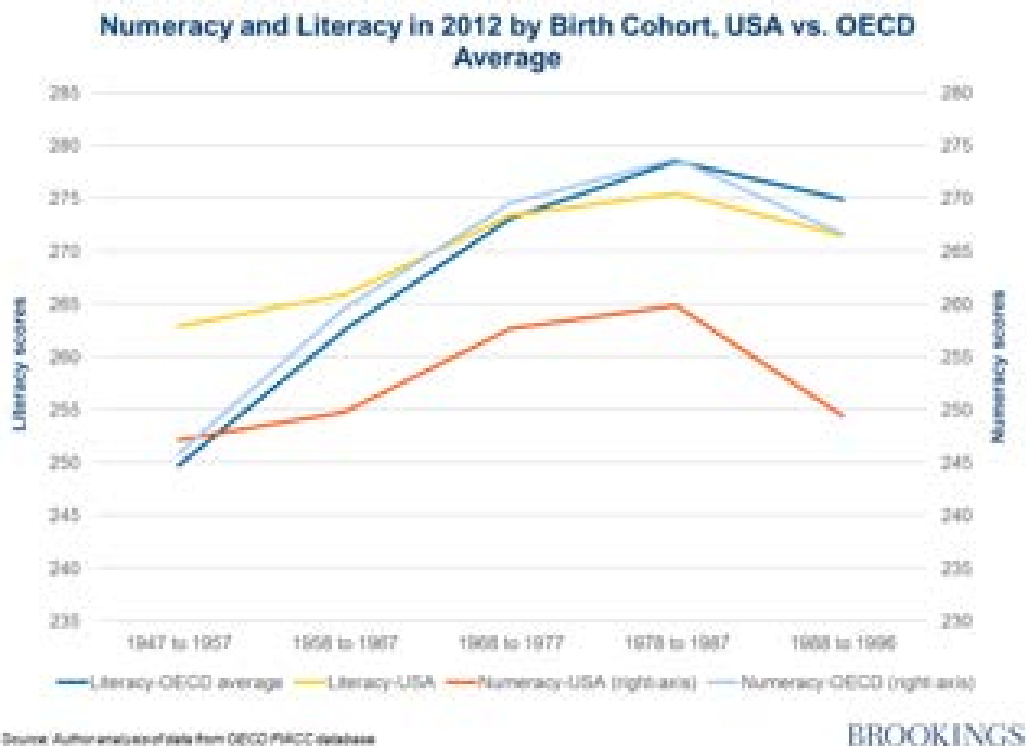
5:00 p.m. Chair's Closing Remarks and Adjournment

Next Meeting: None Scheduled (Yet)

REVISED DRAFT A Call to Action

Beginning in 1983 when *A Nation at Risk* sounded an alarm bell, numerous reports have raised concerns that the American education system is no longer competitive in the world and that US students are not receiving the quality of education being provided by other economically advanced countries. The steady decline in US student achievement is captured well in the graph below from an Organization for Economic Cooperation and Development (OECD) report, which shows that in both literacy and numeracy, US students have fallen from a leadership position after World War II to considerably below average in recent years.

US Student Performance No Longer Leads the World



Another gauge of how poorly US schools perform in relation to other industrial and post-industrial nations is the results on the Program of International Student Assessment (PISA) exam. It is given in math, science and reading to representative samples of 15-year-olds from 72 industrialized nations. The table below shows how far back US student performance is from students in top performing countries, and the gap between the US and top performing countries is generally increasing.

US rankings on PISA

| <u>Year (Countries Tested)</u> | <u>Reading</u> | <u>Math</u> | <u>Science</u> |
|--------------------------------|----------------|-------------|----------------|
| 2000 (32) | 15 | 19 | 14 |
| 2003 (41) | 18 | 28 | 22 |
| 2006 (57) | NR | 34 | 28 |
| 2009 (65) | 17 | 30 | 22 |
| 2012 (65) | 24 | 36 | 28 |
| 2015 (72) | 23 | 39 | 25 |

Unfortunately, it is not just our average student performance that lags student performance of top performing systems. Of equally grave concern, a smaller proportion of the best US students make it into the global top quarter of student performance than is the case in many other countries. Moreover, these top performing systems have relatively small achievement gaps based on income and minority or immigrant status. And to dispel the myth that other countries do not have the same diversity as the US, many of the top systems have higher proportions of minority and immigrant students than the US. Although these results show just how far relative US student performance has fallen in recent decades, they also show that it is possible to build systems where essentially all students perform at a high level.

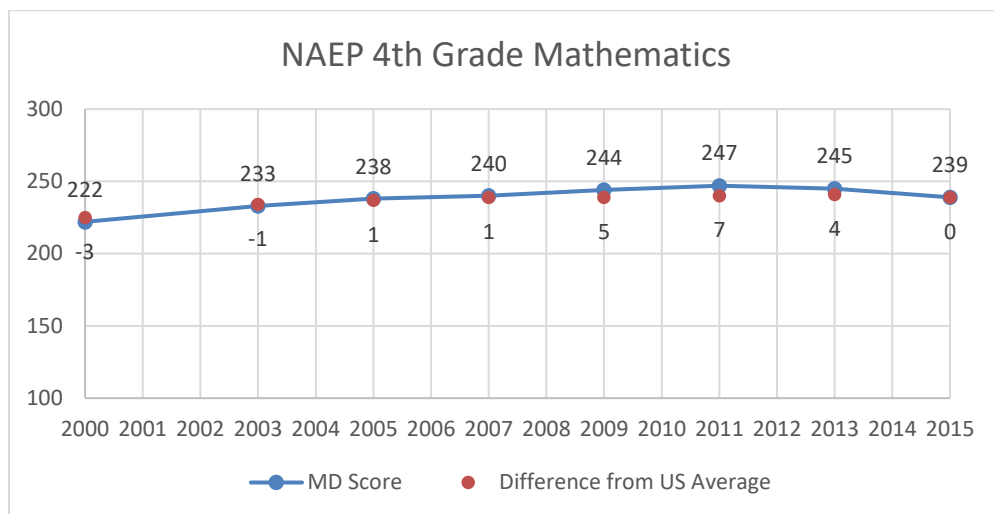
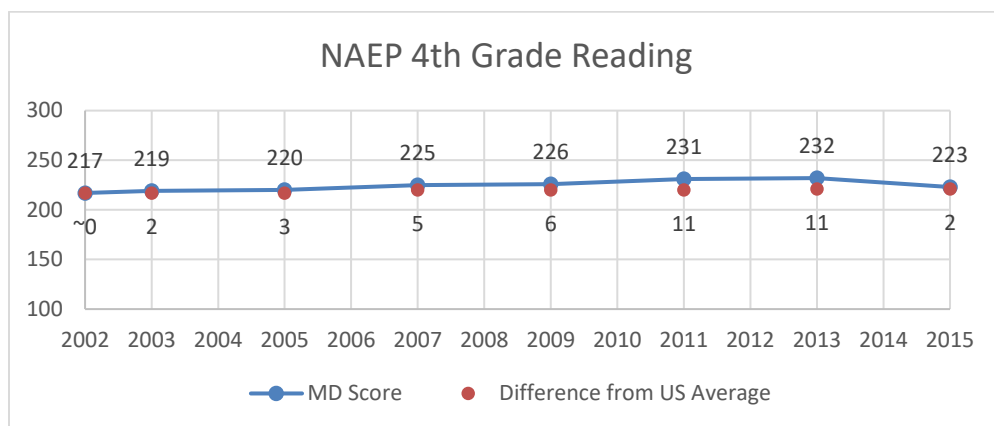
While education in America as a whole continues to languish, one state—Massachusetts—did take bold action, adopting many of the standards recommended in *A Nation at Risk* and other reports as well as practices used by top performing countries. Overall, its education system is now competitive with the best in the world, although it does continue to have higher achievement gaps based on race and ethnicity than the other top performing systems.

Beginning in the mid-1990s, Maryland launched a significant effort to advance its P-12 system. It adopted higher academic standards aligned with assessments that were state-of-the art at the time (the Maryland State Performance Assessment Program or MSPAP). In 2002, the General Assembly enacted the landmark Bridge to Excellence in Public Schools Act that invested \$1.3 billion additional State aid in public education based on the concept of “adequacy” in funding to enable students to achieve higher academic standards. Subsequent actions aligned early childhood education with the K-12 system, expanded early childhood education, and aligned college and career readiness with higher education. For a time these policy and financial investments appeared to be working. Maryland was even named the best state education system in the country by Quality Counts, displacing Massachusetts, for five years in a row beginning in the late 2000s. Massachusetts has since

reclaimed its top status in the US and, as noted above, has risen to among the best in the world.

Maryland Students' Performance Is Average within the US

Despite Maryland's investment in K-12 education and the modest progress that has been made, Maryland's K-12 system is average at best *within the US*. That troubling conclusion is based on the National Assessment of Educational Progress (NAEP), also known as the Nation's Report Card and given to representative samples of fourth, eighth and twelfth graders in every state. Maryland's performance on NAEP in 2015, while somewhat better than 10 years ago, is considerably below the aspirations of the Bridge to Excellence legislation



Maryland Rankings on NAEP 2015

29th in 4th grade math
 26th in 4th grade reading
 25th in 8th grade math
 18th in 8th grade reading

Further, the gaps in achievement between socioeconomic, racial, and special needs populations are far too large in Maryland (as in other states.) For example, the average gap in NAEP performance between white and African American students in Maryland is 29 points. Massachusetts' gap is roughly the same, but overall Massachusetts ranks 1st on NAEP in most grades and subjects. So while the achievement gap is similar, both white and African American students in Massachusetts are performing better, in some cases significantly better, than Maryland students.

Putting it bluntly, despite a significant increase in State funding over the past 15 years, Maryland students still perform in the middle of the pack within the US, which is in the middle of the pack against the rest of the modern world. This reality came as a surprise to many on the Commission, who generally thought, like many Marylanders, that our young people were doing well on a national if not a global level. Looking at the PISA and NAEP results, however, the deeply troubling reality is that—when it comes to actual learning outcomes—Maryland's public education system is a long way from performing at the level of the best in the world, even the best in the United States.

In the 21st Century, High Quality P-12 Education is an Essential Key to Civic Participation, Economic Success and Social Equity

Marylanders must find the present situation unacceptable for multiple reasons. One is that, with the nation's highest concentrations of federal labs and research universities producing cutting edge research, our State has set its sights on becoming a global leader in the technology driven, innovation economy. Such an economy requires a highly skilled and well-educated workforce. By 2022—just four years from now—two-thirds of Maryland jobs will require a postsecondary credential, be it an industry certification or a 2- or 4-year college degree. At present, Maryland employers must recruit too high a proportion of their skilled “knowledge” workforce from out of state. With the ever-growing number of states vying against us for leadership in the new economy, this is not a sustainable strategy. If Maryland hopes to lead the innovation economy, its education system must ensure every child has opportunities—and outcomes—that match the best in the world.

Second, in today's world, access to high quality education is indispensable for each individual. Personal income is highly correlated with education level. For much of the 20th century, a high school diploma was sufficient for a person to get a well-paid job and enjoy a good quality of life. But that's no longer true. Today, a person with a postsecondary degree earns roughly \$1 million more over a lifetime as an individual with only a high school diploma. That gap will widen further as more routine, low-skill jobs give way to automation and to higher unemployment for individuals with inadequate education and training. The harsh reality is that in today's world, a high

quality education is essentially the only path to a career capable of supporting a middle class family.

But it's not just the economy and the individual that benefits from a high quality education system. All Marylanders will benefit if the State has an education system that prepares all students for successful and rewarding careers because, as education and income levels rise, among other things, so does civic engagement and the quality of life in communities, while healthcare costs and crime rates decline. Although some young Marylanders have access to such a public education, too many across our State, especially in areas of concentrated poverty, do not have the same opportunity. That is not right. And ultimately it jeopardizes the future of all Marylanders.

Success is Possible for Maryland

Developing policies that would enable *all* of Maryland's schools to match the best in the world is a daunting challenge but, that is what the Commission was charged to do. The Commission has concluded that such a goal is achievable, provided Maryland makes a sustained, statewide commitment to systemic change. Massachusetts did just that, maintained its commitment for over two decades, and achieved its present status as one of the highest performing systems in the world. If Massachusetts were a nation, it would rank in the top five on several of the PISA test scores. This begs the question: If Massachusetts can perform at this level, why can't Maryland?

There is much to be gleaned from the Massachusetts experience. Twenty-five years ago, the state united around an ambitious K-12 reform agenda. It developed a bold plan and, despite economic ups and downs and political shifts, Massachusetts stuck with that plan. It increased standards for teacher certification and student performance and invested in both, while also holding schools and students accountable. In essence, it reached a "grand bargain" among stakeholders that required each group to compromise on some matters in order to get the education system they all wanted for their state. Today, in addition to PISA, Massachusetts stands out on NAEP scores, the education level of its citizens, and the average income of its workforce. Surely Maryland can do this as well and more. Leaders in Massachusetts are the first to say that they have more work to do, especially in closing achievement gaps based on race and family income. The Commission firmly believes Maryland has the opportunity to develop a system that is not just a leader in the US but among the best in the world and, thereby, become a beacon for the rest of the nation.

Preliminary Recommendations to Build a World-Class System in Maryland

Based on its extensive analysis of some of the world's top performing education systems, a process that Maryland is the first state to undertake in the US, the Commission is in unanimous agreement on key steps that Maryland must take if it is

to develop a P-12 system that performs at the level of the best systems in the world. It must significantly increase its investment in quality early-childhood education. It must devote considerably more resources to at-risk-students, which includes students from low-income families, English language learners, and students with disabilities. It must transform teaching into a high status profession with appropriate compensation for effective teachers. It must develop a system with college and career pathways tightly aligned from the early grades through graduation, one that catches students as soon as they begin to fall behind and enables students to move immediately into college or a profession with an industry-recognized credential when they exit high school. And it must strengthen its system of governance and accountability, align funding in P-12 education with the Commission's recommendations, and give the State's citizens confidence their investments in P-12 education are producing the desired results, results that will make Maryland education not just a leader in the US but among the world's highest performing systems.

The Commission's recommendations will require an increased investment by the State, which the Commission will quantify over the coming months. Just as important, however, the education system envisioned by the Commission also demands significant changes in many current practices, which means that some present expenditures can be redirected in more productive ways to support the Commission's recommendations. As an OCED report documents, above a base level of funding, *how* money is spent is more important than *how much* is spent. While Massachusetts still has work to do, it has achieved its impressive results *spending only a little more (less than 10 percent per student) than Maryland does.*

A Vision for Maryland Schools

With the implementation of these recommendations, Maryland could build an education system that:

- Provides a system of early childhood education that enables all students to enter kindergarten ready to learn;
- Has an ample supply of high quality, appropriately compensated teachers;
- Provides the kind of support that children growing up in areas of concentrated poverty need to succeed in school and in life;
- Gives struggling learners and students with disabilities the kind of support that will enable them to succeed;
- Significantly reduces achievement gaps based on income and race;
- Greatly reduces the number of students who graduate from high school only to find out that they need remediation before they can take credit-level courses in college;
- Doubles the proportion of our high school students taking and succeeding in AP courses and International Baccalaureate programs; and

- Gives high school students the chance to earn an Associate's degree in high school and finish high school ready to go to work with an industry-certified credential or to start the last two years of college, saving themselves and their parents a great deal of money.

Achieving a Grand Alliance

In moving to the final phase of its work, the Commission recognizes that much hard work and many difficult decisions lie ahead. It must come to agreement on greater specificity for its recommendations. It must develop a detailed analysis of their costs, all tied to better designed funding formulas. And it must reach its own "grand alliance," as Massachusetts did, to create a final report that enjoys strong support among the various stakeholders represented on the Commission and across the State. For this grand alliance to be successful, it must ultimately be embraced and sustained by the State's political, educational and business leaders -- and just as importantly, by the very people it is intended to support -- the citizens of Maryland.

Despite these challenges, this is a moment of great opportunity for the State. Some of the groundwork for a high quality education system has already been laid. While not at the level of high performing systems globally, Maryland is seen as a national leader in its approach to early childhood education, as are its efforts to build a strong system of career and technical education. The State has also made a good start at building out curriculum frameworks across some subjects and grade levels and has been a national leader in both student participation and success in Advanced Placement courses. Moreover, the comprehensive college and career readiness legislation enacted in 2013 laid a strong foundation for the P-12 and higher education systems to work with much greater synergy. Excellent schools already exist in Maryland, schools that provide a thoughtfully developed and aligned education curricula designed to bring every student from early childhood to a college and career readiness standards in high school. They just do not exist in nearly enough numbers nor in nearly enough regions of the State.

As it approaches the completion of its work, the Commission is mindful that the State will face a significant choice. It can ignore the recommendations, as generally happened with *A Nation at Risk*, and continue on its present education path, hoping for incremental gains in student performance. It can accept the consequences of maintaining the status quo, and expect to see worsening income disparities and life outcomes for those growing up in areas of concentrated poverty. Or, it can adopt the proposed recommendations, make a long-term commitment to their full implementation, rebuild its system based on practices that have proven to excel elsewhere, distribute the benefits of education much more broadly across the State, and attract and retain businesses because of the excellent caliber of the State's workforce.

That looks like an easy choice, but it's not. The Commission's recommendations will require the State to make very difficult decisions and embrace a different way of "doing business" in P-12 education, institute major new policies and practices, embrace rigorous accountability, and hold firm for full and complete implementation of its recommendations in the face of those who would rather accept the status quo and simply hope for better outcomes. While the choice is not easy, it is profound. Nothing less than the kind of future we envision for our State and the children of Maryland hangs in the balance.

Maryland Education Commission Main Policy Areas

9 Building Blocks for a World-Class Education System

Early Childhood Education



1: Provide strong supports for children and their families before students arrive at school

Ample Supply of High Quality and Diverse Teachers and School Leaders



5: Assure an abundant supply of highly qualified teachers



6: Redesign schools to be places in which teachers will be treated as professionals, with incentives and support to continuously improve their professional practice and the performance of their students



8: Create a leadership development system that develops leaders at all levels to manage such systems effectively

College and Career Readiness Pathways



3: Develop world-class, highly coherent instructional systems



4: Create clear gateways for students through the system, set to global standards, with no dead ends



7: Create an effective system of career and technical education and training

More Resources for At-risk Students



2: Provide more resources for at-risk students than for others

Governance and Accountability



9: Institute a governance system that has the authority and legitimacy to develop coherent, powerful policies and is capable of implementing them at scale

Outline for Commission on Innovation and Excellence in Education

William E. Kirwan, Chair

Preliminary Report —Building a World-Class Education System in Maryland

Organize the report around 5 main policy areas:

- Early Childhood Education
- High Quality Teachers and Leaders
- College and Career Readiness Pathways
- More Resources for At-risk Students
- Governance and Accountability

Volume 1

Sections:

- 1 Transmittal Letter (incl extension to 2018 to complete work)
- 2 Commission Roster
- 3 Table of Contents (Volume 1 and Volume 2)
- 4 Call to Action/ How Maryland compares on international basis
- 5 Charge of Commission, Approach to Work, Meetings, Etc.,
- 6 Summary of Preliminary Recommendations and Next Steps
- 7 Summary of Consultant Reports
 - Adequate funding etc.–APA Adequacy Report/other reports (overview)
 - NCEE gap analyses — process
- 8 Findings and Preliminary Recommendations for each of the 5 policy areas:
 - Summary of NCEE/APA findings and gap analyses and other experts
 - Summary of what Maryland is doing now that could be built upon
 - Summary of how Maryland compares
 - Preliminary Recommendations
 - Challenges to Implementation
- 9 Appendices
 - Legislation establishing commission
 - Commission Meetings since September 2017 (include each meeting agenda which lists all presenters) and links to meeting materials/video
 - List of APA reports and links to full reports
 - Link to URL/Digital PDF of Volume 2 (or in Table of Contents? – with note that hard copy is available upon request)

Volume 2

Full NCEE Gap analyses

Chapter 5 – Commission Background and Work in 2016 and 2017

Chapter 701 of 2016 established a 25-member Commission on Innovation and Excellence in Education. The Commission’s members include legislators and various representatives of State and local government and education stakeholders as well as the business community. The specific membership of the Commission is shown in the Roster at the beginning of this report. Former University System of Maryland Chancellor Dr. William “Brit” Kirwan was appointed by the Governor and Presiding Officers of the General Assembly to serve as chair of the Commission.

Commission Charge is Comprehensive

The Commission is charged with:

- reviewing the findings and recommendations of the Study on Adequacy of Funding for Education in the State of Maryland as required by Chapter 288 of 2002 and subsequent legislation, including:
 - the proxy used to identify economically disadvantaged students;
 - how to address issues of increasing and declining student enrollment;
 - the preferred approach to expanding publicly funded prekindergarten education, including expanding the services and supports needed in special education prekindergarten;
 - how to achieve greater equity in school finance and local wealth measures; and
 - the appropriate regional cost of education index and how the index should be used to adjust education funding;
- reviewing and assessing current education financing formulas and accountability measures and ensuring the adequacy and equity of funding for prekindergarten and other early childhood education programs;
- determining how the federal Every Student Succeeds Act will affect primary and secondary education in the State;
- determining how the State can better prepare students for postsecondary education and to be competitive in the workforce and with other high performing countries in the global economy;
- reviewing how local school systems are spending education funds and ensuring that education funds are being spent efficiently and effectively and that local school systems are allocating their resources to improve student achievement;
- making recommendations for:
 - updating the base funding level for students without special needs and updating the per pupil weights for students with special needs to be applied to the base funding level as established by the Bridge to Excellence in Public Schools Act to ensure that all students are adequately prepared for college and careers;
 - ensuring excellence in local school systems, student performance, and career and college readiness in the State;

- addressing how to increase participation in innovative public school models that may require additional funding or alternative funding mechanisms, such as:
 - dual enrollment programs;
 - early and middle college programs;
 - Pathways in Technology Early College High schools;
 - apprenticeships and internships;
 - career and technology education programs;
 - community schools, including how the State can leverage federal 21st Century Community Learning Center Grants to expand community schools in the State; and
 - other schools that provide innovative education through curriculum, structure, and socioeconomic diversity;
- addressing the impact of high concentrations of poverty on local school systems;
- ensuring that State laws promote collaboration between county governments and local school systems; and
- making any other recommendations on legislation and policy initiatives to enhance the availability of innovative educational opportunities and to enhance the adequacy and equity of State funding for prekindergarten through grade 12 public education in the State.

Adequate Funding

Chapter 288 of 2002, the Bridge to Excellence in Public Schools Act, established new primary State education aid formulas based on adequacy cost studies and other education finance analyses that were conducted in 2000 and 2001 under the purview of the Commission on Education Finance, Equity, and Excellence, also known as the Thornton Commission. The concept of adequacy is based on determining the level of resources that is adequate for all public school students to have the opportunity to achieve academic proficiency standards. At the time, the funding formulas recommended by the Thornton Commission were viewed as a highly innovative approach and achieved what was considered to be an equitably distributed “adequate” level funding across the State. An increase of approximately \$1.3 billion in State funding to implement the Bridge to Excellence Act was phased in over 6 years, reaching full implementation in fiscal 2008. In total, State and local education funding increased \$3.6 billion over that period. Since fiscal 2009, State and local funding have increased modestly. 1. In part due to the Great Recession, followed by a low-inflation economic environment, annual per pupil funding has increased about 2 percent..

The Bridge to Excellence in Public Schools Act also required the State to contract with a consultant to conduct a follow-up study of the adequacy of education funding in the State approximately 10 years after its enactment. After legislation in 2011 and 2012 delayed the beginning of the study and required additional reports to be included in the study, work on the adequacy study began in June 2014, when a contract was awarded by the Maryland

State Department of Education, in collaboration with the Department of Budget and Management and the Department of Legislative Services, to Augenblick, Palaich, and Associates (APA) and its team of researchers that includes Picus Odden and Associates and the Maryland Equity Project.

APA submitted its final report in November 2016, and overall, recommended that in order to provide adequate funding, a total increase of \$2.9 billion over fiscal 2015 is needed, with \$1.9 billion from the State and \$1.0 billion from counties (including Baltimore City), excluding State teacher retirement costs. APA recommended keeping the basic structure of the school finance system in Maryland, with adjustments to the funding formulas and changes to calculating enrollment, regional cost differences, and local wealth. The APA recommendations are discussed in Chapter 7.

Commission Meets in Fall 2016 and Throughout 2017

The Commission was fully appointed in August 2016 and held its first meeting in September 2016. The first meetings in fall 2016 included briefings by APA on the adequacy study recommendations and its related reports as well as briefings by the Maryland State Department of Education and Department of Legislative Services on the state of P-12 education in Maryland, trends in State and local education funding, an overview of State education aid formulas, and a history of the Thornton Commission and adequate funding. The Commission was also briefed on the National Conference of State Legislatures recent report *No Time to Lose*, which urges states to acknowledge that US student performance has been overtaken by other countries over the past 20 years and that education reforms consisting of one “silver bullet” after another have not worked. The Commission submitted a summary of its 2016 interim work to the Governor and General Assembly in December 2016. (See Appendix X for the full text.)

In essence, the Commission has a two-part charge:

- Review and recommend any needed changes to update the current education funding formulas (Known as the Thornton formulas); and
- Make policy recommendations that would enable Maryland’s P-12 system to perform at the level of the best performing systems in the world.

In order to address its first charge, the Commission concluded that it must first respond to the second. Until specific policy recommendations are developed and agreed upon, it is not possible to assess their costs and update the Thornton funding formulas. The Commission will continue to study the Thornton funding formulas and, in its final report, update and integrate them with its policy recommendations.

In order to develop appropriate policy recommendations, in January 2017, the Commission asked the National Center on Education and the Economy (NCEE) to perform a gap analysis to help the Commission compare Maryland’s education system to systems in top-performing countries and states. The gap analysis was designed to help the Commission identify policy priorities and implementation strategies to be considered in conjunction

with changes to the State education aid formulas. NCEE published the *9 Building Blocks for World-Class Education Systems* and presented it to the Commission. Each building block represents a policy area that Maryland should pursue to achieve student outcomes that are comparable to those in top-performing systems. During the 2017 interim, the Commission explored each building block and gap analysis prepared by NCEE. A summary of each gap analysis is included in Chapter 8. NCEE's full gap analyses are contained in Volume 2 to this Preliminary Report, and are also available electronically on the Commission's website XXXXX.

Overall, the Commission has held 17 all-day meetings to date. At these meetings, the Commission set aside time for public comment during which 36 people took the opportunity to testify before the Commission. This included testimony from students and representatives from advocacy groups in special education, arts, health, child care and prekindergarten, teachers, superintendents, and boards of education. The Commission also held four evening events throughout Maryland (Stevensville, Frederick, Upper Marlboro, and Baltimore City) in fall 2017 for parents, teachers, students, and any other members of the public to testify on policies and strategies to make Maryland a top performing education system. In total, 165 people testified at these four public hearings. However, many more were in the audience to listen. The full agendas for each meeting are available in Appendix X, and all of the meeting materials, including video and/or audio recordings of each meeting, are available on the Commission's website XXXXX.

Commission Requests Extension to 2018 and Next Steps

Chapter 701 of 2016 required that a final report be submitted to the Governor and General Assembly by December 31, 2017. Given the enormity of its task, however, the Commission has asked for an extension of time to complete its work in 2018. During the 2017 interim, the Commission was able to reach consensus around key policy areas and preliminary recommendations. These preliminary recommendations are summarized in Chapter 6 and detailed in Chapter 8. However, the Commission determined that in order to finalize its policy recommendations, they must first be evaluated for their cost so that they can be properly folded into the recommendations relating to the funding formulas that the Commission will make in its final report.

Chapter 6

Summary of Preliminary Recommendations and Next Steps

During 2017, the Commission reviewed the 9 Building Blocks and the gap analyses prepared by NCEE that compared Maryland's education system and outcomes with top performing systems in the world — Singapore, Shanghai, Finland and Ontario, Canada — and 3 US states — Massachusetts, New Hampshire and New Jersey. The Commission also heard from other experts from the US and around the world on the importance of, and best practices in providing, early childhood education, teacher quality and teacher preparation, instructional systems and integrated college and career pathways, school finance equity, and governance and accountability. These became the 5 areas around which the Commission organized its policy recommendations. [Add Exhibit with crosswalk] The Commission's findings and recommendations in each policy area are detailed in Chapter 8. A brief summary of the preliminary recommendations follows below. In reviewing the preliminary recommendations, the Commission wants to emphasize that these recommendations must work together to form an integrated education *system*, and are not a series of independent policies and practices.

In early 2018, the Commission will break into a workgroup for each of the 5 policy areas and, working with Commission staff, APA and NCEE, and other experts, develop greater specificity for each of its preliminary recommendations in order to “cost out” the fiscal impact of the recommendations, both individually and as a complete system. This could be described as a “successful nations” method, one of several methodologies that the Commission will use to determine the costs of enabling Maryland schools to match the performance of the schools with the most successful education systems.

The fiscal impact will include both new funding and, where possible, the reallocation of existing funding to support these priorities. For example, as the State elevates the status of the teaching profession and more teachers remain in the profession, teacher turn over will subside and school systems will need to spend less on teacher recruitment, freeing up those dollars to support higher teacher salaries and/or more effective teacher induction programs. This is just one of many examples where existing spending can be redirected to other purposes over time as the policy recommendations are implemented.

The results of the costing out process will then be synthesized into “base” and “weights” for the funding formulas, and the Commission will consider them alongside the APA recommendations. Therefore, until the “costing out” work is completed, the Commission cannot make recommendations on the amount of the base funding in the formula, nor the weights to be applied to that base for at-risk students. Once this process is complete, the Commission will be in a position to recommend the “adequate” amount of funding needed for the purpose of getting Maryland students to achieve the College and Career Ready standards. These recommendations will be made in the Commission's final report.

Additional aspects of the funding formulas for Maryland schools will be addressed in spring/summer 2018 after the costing out of the preliminary policy recommendations is completed. These include determining (1) the base per pupil amount and weights for at-risk

student populations; (2) the method for calculating local wealth; (3) the equitable distribution of funds; (4) the possible inclusion of an geographic cost adjustment factor; (5) the proxy for estimating the number of low-income students; (6) the funding for prekindergarten; (7) the possible requirement for local school systems to fund their share of the at-risk funding formula; and (8) the impact on the local maintenance of effort requirement.

Early Childhood Education is Critical

Maryland is widely regarded as a leader in early childhood education in the United States, from its Family Support Centers and Judy Centers that coordinate necessary services for low-income children and their families to compulsory full-day kindergarten for all 5-year-olds and the availability of half-day prekindergarten for low-income 4-year-olds. However, unlike 10 other states, Maryland does not offer universal education for 4-year-olds. Maryland must expand its current early childhood education program so that all 4-year-olds, regardless of income, have an opportunity to enroll in a quality full-day program. This can be accomplished with a “diverse delivery” system composed of both public and private providers. The State should offer free education for students from low-income families while higher-income families would be expected to pay a portion of the cost. Three-year-olds from low-income families should also have access to a quality full-day program. Provision of a full-day program must be given to special education children regardless of family income.

Policies designed to support these changes, mainly increasing the supply of quality early childhood educators and providers, would need to be phased-in over time. The Commission also believes it is critical that every child is assessed before entering kindergarten in order to provide a baseline of the child’s school readiness, which will inform the teacher’s instruction, and to provide information on the quality of the early education being provided.

The Commission learned that Maryland and the US are far behind top performing systems in providing support to young children and their families, not just to 3- and 4-year-olds but from birth and prenatal care. These supports include free medical care, paid family leave, and free or heavily subsidized child care. In many other countries they also include subsidized housing, parental “allowances” and baby “bonuses, and other financial support.

While the Commission recognizes that many of these supports are outside its charge, it feels it would be remiss to ignore the impact that a child’s first three years can have on the rest of the child’s life. Therefore, the Commission believes Maryland must adopt better support for families with young children like the top performing systems do. Specifically, the Commission urges the State to significantly expand its network of Judy Centers and Family Support Centers to reach all low-income families and their children who need them, increase child care subsidies so that working families have access to affordable, high quality child care, and expand the current infant and toddlers program that provides support to families with special needs children.

Elevating the Teaching Profession is Essential

In examining top performing systems, the Commission learned that these systems tend to recruit the best students into teaching and retain them because teaching is treated as a high status profession, not unlike engineering, architecture or business, with the accompanying expectations

and compensation of a well-educated professional. An abundance of highly qualified teachers working as high status professionals is perhaps the single biggest factor in the success of these top performing systems.

In the US, teaching is still viewed in most places as more of a “blue collar” job with no real opportunities for professional advancement without leaving the classroom. The State faces a significant and growing shortage of highly qualified teachers. If the State hopes to have a system that performs at the level of the world’s best systems it simply must invest in elevating the status of the teaching profession so that more of our most talented young people — and adults — choose to become and remain successful teachers. Accomplishing this goal will require a wide-ranging change in policies and, to avoid teacher shortages and other unintended consequences, a coordinated effort over time.

Another concern in Maryland is a shortage of teachers from diverse racial backgrounds. The Commission believes, and evidence shows, that some school children respond better to and are inspired by a teacher who “looks like me.” Given Maryland’s rapidly changing demographics and that, currently, only 25 percent of Maryland’s teachers are underrepresented minorities, the State needs to make special efforts to recruit a more diverse teaching workforce.

As part of its effort to elevate the status of the teaching profession, the State will need to develop a career ladder framework that will allow teachers to improve their skills and advance in their profession, while primarily remaining in the classroom, with a significant portion of compensation ultimately tied to placement and advancement on the ladder. Teachers rising to the level of Master Teacher would be highly effective teachers, leaders in their schools, and successful mentors to other teachers. The career ladder would be Y shaped with teachers beginning at the base and then choosing the “Master Teacher” or “Administrator” track, with assistant principals and principals first working primarily in the classroom and demonstrating success as teachers and mentors. While the career ladder will have a statewide framework, local school systems and bargaining units would negotiate the compensation and specific responsibilities at each step, as well as any additional ladder steps or requirements added to the statewide framework through local negotiations.

Teaching standards must also be increased to levels similar to top performing systems like Massachusetts, which has adopted the most rigorous teacher certification standards in the US. Teachers prepared in Maryland and those coming from out of state, which are currently the majority of teachers employed in Maryland’s public schools, must all be held to the same standard. Likewise, renewal of teacher certification must be tied to demonstrating effective teaching at a high level and not simply taking continuing education courses, which has not proven to be effective in improving teaching quality.

As the career ladder is implemented and teaching standards are increased, teachers’ compensation and working conditions must be improved and should be benchmarked against other professions requiring similar levels of education. During this transition period, Maryland needs to systematically phase-in salary increases for teachers (above and beyond cost of living adjustments) over the next 4 to 5 years in order to stem the decline in teacher recruitment and retention and to begin reducing the gap between compensation levels for teachers and other professions requiring comparable levels of education.

While salary is important, teachers report that their working conditions are equally if not more important. Maryland needs to change the way its schools are organized and managed to make them more effective and to create a more professional environment for teaching, which the career ladder is designed to facilitate and support. The State should phase-in a reduction of the maximum time, currently 70 to 80%, that teachers are expected to teach in a typical week. This would give teachers more time to work as professionals in collaboration, as is the case for teachers in countries with high performing systems, to improve the curriculum, instructional delivery, and tutor students with special needs. In order to effectively use this additional collaborative time and the new organization of schools, teachers should receive training on the Commission's recommendations and the best uses of collaborative time to build professional learning communities.

For higher education, teacher preparation programs must modify their programs to reach the higher certification standards. The State should use its recently-expanded program approval authority to ensure that teacher preparation programs are rigorous and accountable. Programs must ensure that students are required to master a content area as well as pedagogy, receive the research, data analysis, and observation training they need to evaluate students' instructional needs and instructional materials, and have appropriate and diverse experiences in the classroom so they are prepared for the realities they will be faced with in the classroom. Teacher preparation programs must also work more closely with school systems, and vice versa, so that they can ensure the success of their teachers in the classroom, particularly in the first few years.

To incentivize school systems and teacher preparation programs working more closely, the Commission is proposing the creation of "collaboratives" consisting of one or more local school systems and teacher preparation programs supported by multiyear seed grants. These collaboratives would work together to, among other things, elevate standards for admission and reform teacher preparation and training programs; create more effective teacher induction programs; implement career ladders; and "professionalize the working environment in schools. The collaboratives would develop pilots for implementing statewide the new leadership development systems, teaching career ladder systems, and advanced forms of school organization and management that the Commission is recommending.

There are additional recommendations in this policy area that relate to teacher recruitment and teacher induction programs. This policy area involves the most recommendations and undoubtedly will be the most costly to implement. As a result, the Commission will be spending substantial time in 2018 determining the appropriate balance of increases in teacher salaries, reductions in teachers' class time, the availability of funding that can be reallocated, and other related policies.

Students Must Leave High School Better Prepared for College and Careers

Top performing systems typically have a tightly aligned, high standards curriculum available to all students who must take a standardized test at the end of 10th grade to determine whether a student is qualified to pursue further studies or begin a career. For their final two years in high school, students go either into a program intended to prepare them for university or for a career in a high skill profession, with work beginning right after high school or after more career and technical education at the postsecondary level. In many countries, students who are in a career and technical program increasingly go on to postsecondary education after high school, and

students who are in the academic stream in high school are getting vocational qualifications as well as academic credentials. In these countries, employers and universities know just what it means to have met the 10th grade qualification, what is typically referred to as college and career readiness in the US. Ultimately, this is exactly what a high school diploma should signal to employers and colleges and universities in Maryland and across the United States.

No state in the US has built a real system based on all of these attributes. But Maryland has assets that can be built upon to create such a system. Maryland was among the first states to develop the Maryland College and Career Ready Standards that are measured by the PARCC tests aligned with the standards. Students are currently expected to reach that standard by the end of their junior year, although only about 40% of high school students have so far done so. Maryland has an additional standard that all students are required to reach, and a defined set of courses in subjects that are required, in order to graduate from high school. These elements can be built on to create a qualification system set to global standards. To do that, the Commission recommends that one standard, called “on track for college and career readiness,” be established that students are expected to meet by the end of the 10th grade, and a defined set of college and career pathways for the junior and senior years be created, which would include access to an AP or International Baccalaureate curriculum and rigorous technical training leading to an industry certified credential. To do this, the entire education system must be aligned from the early grades through 10th grade to provide students with the opportunity to meet the standard by the end of 10th grade, although the Commission recognizes that it may take some students longer to reach the standard.

An “early warning system” must be created as soon as possible that enables teachers to better identify students in every grade who are beginning to fall behind, and work to get the student back on track. Ultimately this system will catch students before they fall too far behind, but during the transition period additional resources and support will be needed to address struggling learners.

Students who are “on track” must have rigorous pathways toward college, including more IB and AP diploma opportunities and even the ability to earn an associate’s degree while still in high school, not just for students in designated early college high schools. They must also have access to high quality career pathways that result in either an industry–recognized credential or entry into a demanding postsecondary program of technical education and training.

Apprenticeships and other opportunities to participate in a career while in high school must be significantly expanded. While Maryland has made considerable progress in creating Career and Technical Education (CTE) programs, the State must make significant changes in its approach to CTE education if it wants to provide high quality programs like those established by countries leading the way in this arena have established. The Commission recommends that a small group of individuals with expertise in CTE and Maryland employers be formed as soon as possible to benchmark Maryland CTE programs against the best in the world and make recommendations to build out rigorous career pathways and apprenticeships that meet the needs of Maryland’s economy and employers.

More Resources Must be Provided for At-risk Students

Maryland currently ranks 11th in per pupil spending in the United States, but drops to 19th when adjusted for regional cost differences, even though Maryland’s median income is the highest in

the nation. The average of spending in the benchmark states of Massachusetts, New Jersey, and New Hampshire is \$2,200 per student more than Maryland, which includes state, local, and federal funds. Still, Maryland spends about 50 percent more than the top performing countries, although this does not take into account that many of these countries spend much more on general support and social, medical, dental, and other services for families with young children than the United States does, none of which is accounted for in their school budgets. In the United States, the schools bear the burden of trying to address the problems that the lack of such support in the United States causes for the schools as they try to educate students who are increasingly entering school far less ready for school.

It came as a surprise to many on the Commission that Maryland does not do well on measures of funding equity. Although Maryland has the highest weight in the country for low-income students in its funding formula, the State spends 4.9 percent less money (state and local) on poor school districts than on wealthy ones, making it the state with the 15th most regressive funding system in the nation. By contrast, Massachusetts spends 7.3 percent more money on students in low-income districts.

The Commission endorses the basic structure of the Thornton funding formulas, with a base funding amount per pupil and weights applied to the base for at-risk students. However, until the “costing out” of the preliminary policy recommendations is completed, the Commission cannot make recommendations on the amount of the base funding in the formula, or the weights to be applied to that base for at-risk students. For the purpose of costing out the preliminary recommendations, the Commission recommends that the special education weight be increased. The final recommendations will specify the weight, which should be a placeholder until an in-depth study is conducted by experts. Implementation of the new 10th grade standard and early warning system described above should ultimately reduce the number of students identified as needing special education services over time except for the most severely disabled, which is the case in top performing countries.

The Commission also recommends that a new weight for schools with high concentrations of students living in poverty should be added. An analysis of what this additional weight should be and whether the weight should be differentiated among levels of high poverty will be conducted and included in the Commission’s final report. Wraparound services for at-risk students and their families must be significantly increased so that all students have the opportunity for academic success. To the extent that existing providers cannot meet the needs of students, the new concentration of poverty factor should provide the funding to support these services. These services must include incorporating a service coordinator at each school above a certain poverty level to coordinate services provided by public and private agencies and expanding the community schools strategy. The physical and mental health needs of students and their families must also be addressed as well as the need for expanded learning time such as after-school and summer programs.

Greater Accountability is Necessary for Success

In the US, unlike in top performing countries, P–12 spending and accountability are highly decentralized and policies and practices are not routinely benchmarked against top performing systems. Many different bodies have independent authority for specific parts of the P–20 education system and not infrequently work at cross purposes with one another. The system for governing education in Maryland, like the systems throughout the United States, can best be described as highly fractionated. Maryland will have to find an innovative approach to education governance in order to get the same kind of coherence and power from the education system being proposed by the Commission that top performing countries have achieved. Put another way, the question is how to set up a governance and accountability mechanism for implementing the Commission’s final recommendations that maximizes the chance that the recommendations will be well and truly implemented.

The Thornton Commission recommended, and the Bridge to Excellence legislation codified, a master plan requirement that was innovative at the time and in theory held school systems accountable for the use of education aid, but it did not work as intended. Master plans, both the writing process by the school systems and the review process by MSDE, became more compliance–driven rather than a real “strategic plan” for education policies and practices to be implemented with fidelity. The master plans did not result in systemic changes in policies and practices that produced sustainable and ever–increasing outcomes. The task in this case is to establish a governance and accountability structure for implementing the Commission’s recommendations similar in form but very different in practice from the structure established by Thornton, a structure that stands on what was learned from Maryland’s experience with Thornton. The nature of the criteria used to judge school system master plans must be very different. Instead of describing particular interventions that must be used, the criteria must focus on, for example, whether a district is doing what is required to find, hire, train and provide working conditions that would attract very high-quality teachers and enable them to do the best work of which they are capable.

The Commission believes there must be a strong system of accountability in the implementation of its recommendations. In particular, a meaningful portion of new funding must be subject to the approval of specific plans to implement the Commission’s recommendations and must be subject to demonstrated progress towards greater student success. The Commission’s final report will further address this issue as well as the appropriate entity or entities to monitor implementation of the Commission’s recommendations. At the end of the implementation period of the Commission’s recommendations, an evaluation of whether the Commission’s goals have been achieved and their effectiveness should be required.

The Commission also recommends that Maryland join the OECD PISA survey so that it can compare itself, like Massachusetts, to education systems around the world on both student achievement and the strategies that top systems are using to get both high achievement and high equity.

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Chapter 8. Summary of Gap Analysis Preliminary Recommendations

Early Childhood Education

Provide Strong Supports for Children and Their Families Before Students Arrive at School

Support for Families with Young Children in the Top Performing Countries

Most of the top-performing countries provide government support for families with young children that, in breadth and depth, far exceeds the support provided by any state in the United States. This often includes a family allowance, paid family leave for the mother or father—often for a year or more—free medical care, health screening services, home visits by nurses, prenatal services, maternal care services, wellness care, and parent education.

Singapore, for example, provides a one-time “baby bonus” of US \$5,737 for each of the first two children and US \$7,172 for each additional child. They also open a Child Development Account that can be used to fund child care and many other educational services and put US \$2,141 in the account at birth and up to US \$2,141 in the account in matching contributions each year thereafter. Finland provides a monthly allowance of US \$103 for each child through the age of 17, with monthly supplements for single parents of an additional US \$53 per child. These subsidies are in addition to all the other services just described.

These service packages are typically designed to enable one or both parents to stay at home and bond with their newborns for their first few months to two years or more, with no sacrifice in income. After that, these countries provide highly subsidized, high-quality child care on a schedule that enables the parents to work a full day without worrying about the welfare of their children. Increasingly, the responsibility for the availability and quality of child care services is lodged in the Ministries of Education, so that the provision of these services can be coordinated with the early childhood education system and the system for formal schooling, and so that there is a smooth progression in the design and operation of these services as the child develops.

All of the countries benchmarked as top-performers offer free or very low cost, high quality early childhood education for all 3- to 5-year olds (compulsory schooling typically begins at age 6). In some of these countries the universal programs serving pre-compulsory school age children are called prekindergarten and in others preschool. In many of these countries, early childhood education is provided by both government and private providers, and the private providers are generally held accountable for their use of public funds. These countries are raising their standards for the quality of preschool faculty. Finland, for example, makes sure that at least one-third of the child care workers as well as the lead teacher in every preschool program have a bachelor’s degree. All of the teachers in their pre-primary school are required to have master’s degrees and a teacher certification if they are based in a school setting.

In Ontario, all teachers of 4- and 5-year-olds must have full certification as regular teachers. Full-day kindergarten is free for all 4- and 5-year-olds in Ontario. Almost all 5-year-olds are enrolled. Fifty percent of the 4-year-olds are enrolled and that proportion is growing quickly.

The Gap between Maryland and the Top-Performers

No American state provides the quality or range of services just described. None offers family allowances or the kind of paid family leave just described or free medical care or the range of services to new mothers that characterize the standard offering in many of the top performing countries. That includes Maryland.

In the United States, Maryland is one of only a few states that has begun to offer a full suite of wrap-around social services to families with young children before they enter school, although it is inadequate to meet the actual demand for such services. One important source of such services is Maryland's Family Support Centers. They are open to all families with children under 4 years old, regardless of income level. They offer parenting education, workforce programs, home visitation programs, infant and toddler education programs, and connect families with other services like Head Start. There are, however, only 25 such centers around the State, serving less than 3 percent of the cohort.

Maryland is also home to the Judith P. Hoyer Early Childhood Care and Family Education Centers, known as "Judy Centers," which coordinate services for children from the time they are born until they enter kindergarten. Serving 57 elementary schools, nearly all Title I schools, they pull together from community resources a combination of early childhood education, family activities, health care, adult education, identification of special needs and early intervention, child care, parenting classes, and family literacy. These centers in Maryland have been admired and copied in a growing number of other states.

The average salary for child care workers in Maryland is half of the average statewide wage for all workers, whereas, in the benchmark countries, it is typically 60 to 70 percent of the average jurisdiction wage. The minimum qualifications for serving in the child care industry are higher in the benchmark countries than in Maryland and they are rising rapidly.

Maryland's child care subsidies for low-income families are notably lower than those provided in the comparison states and the benchmark countries and, in fact, among the very lowest in the country. Maryland's income eligibility to receive a subsidy for child care is \$31,000 or less—an eligibility level that is among the country's very lowest – while it is about \$60,000 in the benchmark states (New Jersey, New Hampshire, and Massachusetts). Although Ontario's subsidy is comparable to Maryland, Singapore has universal subsidies for all families with additional supplements for families with incomes under US \$64,000 and Finland subsidizes at incomes under US \$71,000.

Maryland is widely regarded as a leader in early childhood education in the United States. It is one of only 8 states plus Washington D.C. with compulsory kindergarten starting at the age of 5 (only 15 states require kindergarten attendance at all) and one of only 13 states (plus D.C.) that require districts to offer full-day kindergarten. The State also requires districts to offer half-day pre-K for 4-year-olds from low-income families. This is more extensive than any of the benchmarked states except New Jersey. Nonetheless, Maryland does not measure up to the 10 or more states that have universal prekindergarten for 4-year-olds available to families. Maryland and Massachusetts have aggressively leveraged their early childhood quality rating

and improvement system (known as EXCELS in Maryland) to drive improvement in early education in the State. Providers receiving prekindergarten expansion grants for 4-year-olds must limit class size to 20 students and achieve EXCELS Level 5, which requires a certified early education teacher and an aide in every classroom. Maryland has adopted a number of important policies and programs designed to improve the quality of its early childhood education program, including tuition reimbursement for prekindergarten teachers, salaries for those teachers comparable to those in the benchmark states, and a fully implemented kindergarten readiness assessment system.

Despite these achievements, however, the benchmark countries provide greater subsidies in their early childhood education programs, set higher standards for early childhood faculty and pay them better, and offer a wider segment of the population access to the system.

Putting Support for Families with Young Children into Perspective

In other Organisation for Economic Co-operation and Development (OECD) nations the poverty level is similar to the U.S. average. Maryland's poverty level is below the national average, although there are pockets of deep, intergenerational poverty, particularly in Baltimore City but also in other areas of the State. Yet both Maryland and the United States provide far less general support to families with young children than the countries whose students greatly outperform students in this country. That means that the children of low-income parents in the United States, even though their parents' incomes might be comparable to those of their peers in the top-performing countries, are much more likely to be hungry, homeless, subject to frequent eviction from their homes, sick, in need of dental care, traumatized, or limited by a very small vocabulary. Never having had a quality early learning experience – and more likely to have been cared for at home or in the home of an untrained relative or friend – they arrive at the school house door behind their peers in numerous ways.

Thus, American schools, kindergartens, and preschool institutions carry a much heavier burden than their counterparts in the top-performing countries. This means it is all the more important for Maryland to significantly increase its investment in early childhood education and address educational deficiencies as early as possible in a child's life rather than let these deficiencies fester and grow worse over time.

RECOMMENDATIONS

1. Maryland must expand its current early childhood education program so that all 4-year-olds, regardless of income, have an opportunity to enroll in a full-day program. This can be accomplished with a "diverse delivery" system composed of both public and private providers. The State should provide more funding for 4-year-olds from low-income families, including no charge for students from families at or below 300 percent of the federal poverty level, while higher-income families would be expected to pay a portion of the cost. Three-year-olds from low-income families should also have access to a full-day early childhood education program. Policies designed to support these changes

would need to be phased in, with priority going to provision of a full-day program for special education children regardless of family income.

2. Maryland must make sure that all early childhood education programs, irrespective of whether they are provided by public agencies or private providers, are of high quality. To that end, Maryland should:
 - a. Ensure that the standards for approval of program personnel are comparable to those set in the countries with the benchmarked early childhood education systems and, if not, establish a timeline for full implementation of those standards.
 - b. Create a staffing system for approved Maryland early childhood education providers that is fully integrated with the proposed statewide career ladder system described in the section on high quality teachers and leaders as the career ladder is phased in. The Commission will examine further and include in its final report how private providers may participate in the career ladder.
 - c. Strengthen the program of support for the professional development of early childhood teachers to enable them to earn the certificates defined by the new career ladder.
 - d. Require public and private providers to achieve EXCELS Level 5 in order to receive State funding for 3 or 4-year-old students. Initially a provider must achieve at least EXCELS Level 3 with a plan approved by the Maryland State Department of Education (MSDE) to achieve Level 5 within 5 years.
 - e. Maryland, which has already developed standards for children in grades K–12, must expand these to include early childhood education standards for children aged 3 and 4 and these standards must apply to all providers.
3. In order to achieve the expansion of programs for 4-year-olds and low-income 3-year-olds in Recommendation 1, the supply of high quality providers and early childhood educators based in the community rather than in schools must be increased significantly. The Commission recognizes this will take time, but actions such as increasing incentives for teacher certification (perhaps establishing a bachelor degree program for educating children with and without disabilities from birth to age 8) and implementing a professional development system with incentives that provides pathways for current and prospective providers to increase their quality are critical. Chapter 377 of 2015 required a workgroup to develop a professional development plan for early childhood education. The workgroup's report, which can be found here (http://earlychildhood.marylandpublicschools.org/system/files/filedepot/21/pd_master_plan_report_-_final_jan_21_2016.pdf), includes these and other recommendations worthy of consideration.
4. Maryland must assess the school readiness of every child prior to entering kindergarten from public and private providers, either using the existing instrument (Kindergarten Readiness Assessment, KRA) or a new instrument developed in collaboration with Maryland's teachers. As a first step, MSDE in collaboration with kindergarten teachers

and early childhood experts should evaluate the current KRA, which has been significantly shortened since its first administration, to determine if it is an appropriate assessment for Maryland school readiness. This readiness assessment should be administered by kindergarten teachers prior to the beginning of the school year and be used to align the kindergarten program for each kindergarten student in ways that will enable him or her to get on track and stay on track for college and career readiness.

Support for Families and Children under the Age of Four

While the recommendations above pertain to the Commission's specific charges, the Commission feels it would be remiss to ignore the impact that a child's first three years can have on the rest of the child's life. Support for families before their children enter preschool is critical, because the condition of the students coming into the public schools has such an important bearing on the capacity of the schools to get all students to high standards of academic accomplishment and because the cost of doing so in the schools is, to a very significant degree, a function of the condition of the young people coming into the schools. The Commission, therefore, has debated at some length the question of how far its recommendations should reach.

The Commission was surprised to learn, and suspects Marylanders will be too, of the very large gap between what our State does for families with young children more generally and what the top-performers do for those families. It is impossible not to conclude that this fundamental difference in social policy not only creates a burden on our schools that schools in other leading countries do not have to bear, but it also makes it less likely than it is in these countries that our public schools can function as our national counterweight to poverty and serve as the route to the American dream for every child.

The Commission has concluded that it has an inescapable obligation to make a recommendation designed to strengthen not only the early childhood education system but also the systems that provide other vital services in communities, especially those that serve mainly low-income residents, because, in the Commission's view, the health, education, and social service systems, at the least, are inextricably and directly related to the function of the schools and to their capacity to do their job, both in early childhood and throughout students' schooling.

RECOMMENDATIONS

5. Maryland must adopt policies in early childhood education policy more like those of the benchmark nations. In particular, though strictly speaking outside the Commission's charge, we strongly urge that the State significantly expand its network of Judy Centers and Family Support Centers to reach all the low-income families and their children who need them, increase child care subsidies so that working families have access to affordable, high quality child care, and expand the current infant and toddlers program that provides support to families with special needs children.

High Quality Teachers and Leaders

Have an Abundant Supply of Highly Qualified Teachers

Redesign Schools as Places in which Teachers will be Treated as Professionals, with Incentives and Support to Continuously Improve their Practice and the Performance of their Students

Create a Leadership Development System that Enables School Leaders to Create and Manage High Performance Schools Effectively

Ensure that Students Selected by Maryland Universities for Teacher Training are Comparable in Quality to Those in the Top Performing Countries

The top performing countries recruit prospective teachers from the upper academic ranks of the college-bound graduating cohort: the top 50 percent in Shanghai, 33 percent in Singapore, 30 percent in Ontario, and 25 percent in Finland. In Maryland, as in most other states, there are few policies in place to influence selectivity in the admission of students to teacher preparation programs. For example, while the University of Maryland, College Park Campus (UMCP) and Towson University both require a 3.0 minimum GPA for candidates, the academic record of the high school students going into teacher education at UMCP are among the lowest of those going into any professional preparation program, and, alarmingly, only a handful of students among the thousands entering these two universities every year elect to prepare themselves to be teachers: fewer than 50 students out of more than 4,000 at UMCP and about 150 students out of about 3,500 at Towson. DATA TO BE CONFIRMED These policies and the data on students admitted to teacher preparation programs in the State fall far short of the policies typical in the top performing countries.

It is very hard to get into teacher preparation programs in the top performing countries. In Finland, it is harder to get into such programs than it is to get into law school. The proportion of acceptances to applicants for places in university teacher education programs in the top performing jurisdictions range from 1 acceptance for every 10 applicants to a little more than 1 acceptance for every 4 applicants. In addition to presenting a strong academic record, top-performers require that successful candidates complete demanding interview and assessment processes assessing zeal for teaching, ability to relate to children as well as collaborative and interpersonal skills.

Close to 100 percent of candidates who apply to teacher preparation programs in Maryland higher education institutions are admitted, which is to say that anyone who can get into the university can get into the teacher preparation program, unlike the law school or business, engineering and architecture programs.

Finally, the top-performers are moving in the direction of limiting the right to offer teacher education programs to their research universities. This is not the case in Maryland or the benchmark states.

Because the average achievement of high school graduates is much higher in the top performing countries than in Maryland, *and* because they are selecting their teachers from a higher segment of high school graduates than Maryland is, these countries are choosing their future teachers from a far better educated pool than Maryland is.

The top-performers typically provide strong incentives to attract high school graduates with strong academic records into teaching, including paying the entire cost of attending college and graduate school, and, in some cases, providing a salary to the teachers-in-training while in university. The Maryland legislature passed, and the Governor signed into law as Chapter 542,

SB 666 in 2014, which sets up an incentive fund for prospective teachers. Maryland residents who have strong academic records (a GPA of at least 3.3, combined math and reading SAT score of at least 1100, composite ACT score of at least 25, or 50 percent on GRE) and pledge to teach in a high-poverty Maryland school for the same number of years for which a recipient received an award, are eligible to receive 100 percent of tuition, room, board and fees at a Maryland public institution of higher education, or 50 percent at a private institution. However, these incentives have not yet been funded by the State.

RECOMMENDATIONS

1. Maryland must work on several fronts to greatly strengthen the pool from which its future teachers come. Specifically, it must:
 - a. Charge universities to greatly expand their recruitment efforts both broadly, to include more students from diverse backgrounds, and in shortage areas, as annually identified by MSDE.
 - b. Mandate that universities improve the quality and rigor of their teacher preparation programs at both the undergraduate and graduate levels and hold them accountable for doing so.
 - c. Direct Maryland's teacher preparation programs to apply for grant funding currently available from multiple major foundations to help schools of education increase the size of the pool of high ability high school students interested in applying to their programs and help their teachers-in-training to succeed in the more rigorous program of teacher education the institutions will be required to offer.
2. Maryland must provide strong incentives to students with strong records of academic achievement in high school to choose a career in teaching.
 - a. The State should significantly expand the program established under SB 666 of 2014 and ensure it is fully funded in the budget.
 - i. The program should be expanded beyond recent high school graduates who are interested in teaching to include students who change their major and graduates who seek to change careers and become teachers.
 - ii. Priority for awards should be given to those who commit to teaching at a high needs school in Maryland. If additional funds are available then the awards can be made to those who teach at any school.
 - iii. The eligibility requirements of the program should be broad enough to include students who have either a high GPA or SAT/ACT score and a passion and aptitude for teaching.
 - iv. Consideration should be given to requiring a minimum number of years of service regardless of the number of years in which an award was received, e.g., two years.
3. Given Maryland's rapidly changing demographics, the State needs to make special efforts to recruit a more diverse teaching workforce. Currently, only 25 percent of

Maryland's teachers are underrepresented minorities. The Commission believes that some school children respond better and are inspired by a teacher who "looks like me" and that if a diverse workforce is desired then diverse incentives must be provided.

4. Maryland must require the Maryland Higher Education Commission, MSDE, and the Maryland Longitudinal Data Center to report periodically to the legislature on the high school graduates going into teacher education in Maryland as compared to the quality of high school graduates opting for majors in other professional fields as well as students entering teacher training programs in the top performing countries.

Ensure that Candidates in Preparation Programs Master the Content they will Teach and How to Teach It

Maryland's regulations for teacher preparation largely resemble those of the benchmark states. Teacher preparation programs in Maryland offer either a bachelor's or a master's degree route into teaching. In the three programs studied – UMCP, Towson University, and Notre Dame of Maryland University – candidates take methods of teaching courses in the subjects they will teach. Prospective secondary school teachers are required to major in the subject they will teach, but candidates teaching in elementary school do not have to specialize in one or two academic disciplines as they often do in the top performing countries. Programs varied in the extent to which they imparted research skills to prospective teachers: no courses were offered in this arena at Towson, one course in research was required at Notre Dame of Maryland, and three courses in research were offered at UMCP, but only at the master's degree level. These courses were not required.

Programs of study at these institutions in Maryland, consistent across most of the U.S. education programs, differ from the top international jurisdictions in several ways. They do not emphasize, or even address, research skills and diagnosis and prescription, which teachers in the top performing countries use to assess the quality of the research on education, formulate strategies for improving student outcomes appropriate for the students in their classes and evaluate the impact of those strategies as they implement them in their schools. They do not require elementary school teachers to specialize in either humanities or math and science, which would by itself be a powerful lever for improving mathematics and science instruction in elementary school and mastery of the STEM subjects in the upper grades. And most importantly, they do not enable teachers to develop the kind of deep conceptual understanding of the subjects they teach that will be required of all students when digital devices take over most of the routine cognitive work that many people now do in their jobs. It is this kind of conceptual understanding that makes it possible for good teachers to grasp the misunderstandings that students typically have when they cannot grasp the material being taught and correct those misunderstandings. It is also the kind of understanding that is required to prepare students for more advanced work at the upper grades.

One way in which Maryland distinguishes itself from the benchmark U.S. states, and resembles the highest-performing international jurisdictions like Finland, is in its requirement that all

teacher candidates must have an internship experience in a designated Professional Development School. In these schools, candidates receive coaching and feedback from staff that have been specially selected and trained. The schools partner with local universities to stay up-to-date on what teacher candidates are learning. The Professional Development Schools also serve as sites where teachers have career-long access to ongoing professional development and training. All full-time students must have a minimum of 100 days in the Professional Development School, which is approximately the same length, or slightly longer, as the practical experiences in the top-performing international jurisdictions. In the programs we reviewed in Maryland, teachers began their practical experience in their junior year, with observations and small group work, and progressed to full-time student teaching in the senior year.

RECOMMENDATIONS

5. Maryland must use its teacher education program approval authority to ensure that the content of these programs meets international standards of subject matter as well as mastery of the craft of teaching and, further, that the approved programs are aligned with the goals and structure of the public education system in the State. The institutions should be required to offer programs that incorporate the following features of global best practice:
 - a. Instruction practices designed to enable graduates to teach the specific elementary and secondary school standards adopted by the State to students from different racial, ethnic, and economic backgrounds, in such a way as to enable all students to reach the standards established by the State with respect to College and Career Readiness.
 - b. Courses that train teachers to quickly identify students who are beginning to fall behind and just as quickly diagnose the problem and implement solutions to assist the student to catch up.
 - c. Training on how to routinely evaluate and use research and data to help teachers improve student performance.
 - d. Provide ample opportunities for students wishing to enter a teacher preparation program to be in classrooms to confirm their interest in and aptitude for teaching early in their college careers.
 - e. The expectation that upper level students in teacher preparation programs will have significant experience in a high quality professional development school working under the tutelage of teachers with the rank of Master Teachers in the new career ladder system; such teachers would have a reduced teaching load to enable them to perform this mentoring function well and the opportunity to gain full clinical faculty rank at the sponsoring university.
6. Maryland teacher preparation programs and local school systems must collaborate regularly and develop closer working relationships to strengthen both teacher preparation and ongoing teacher training/professional development programs. MSDE should increase its capacity to provide technical assistance and support to teacher

preparation programs and develop a systematic means of providing feedback to programs so as to ensure they are better informed about the content and expectations of the preK-12 classrooms.

7. MSDE should use its newly granted program approval authority to more rigorously assess teacher preparation programs. Assessments should be based primarily on the success of a program's graduates in the classroom and not on input measures such as the Praxis exam pass rates.
8. Maryland teacher preparation programs should enable all future teachers to recognize and effectively use high quality instructional materials (including online) and to adapt existing curriculum to make it stronger using standards-aligned tools to assist them.
9. Maryland should create a ranking system of commercially available (including online) instructional materials that are aligned with Maryland curriculum standards and of high quality. If a local school system has independently developed a curriculum, a review of that curriculum should be done to ensure it meets these high standards.

Ensure that All Candidates being Licensed and Hired Meet the Same High Standards

Policy can be used to regulate teacher quality at the point of entry into teacher education or at the point of exit, or both. As we noted above, the top-performers put their emphasis on the first of these options, at the front end of the process, by restricting the right to offer teacher education programs to their best universities. Only Shanghai implements a standardized exam measuring whether teachers have mastered the content and skills they learned in teacher preparation when they exit preparation programs. Maryland, like the benchmark states, attempts to compensate for the relatively loose regulation at the front end by controlling teacher quality at the end of the process, with licensure. All states require all teachers to pass an exam of baseline knowledge of content. The exams used in Maryland for this purpose are less rigorous than those employed in Massachusetts and New Jersey. In Maryland, candidates must earn passing scores on one of several approved assessments of mastery of core academic content. The cut scores are generally set to a low college admissions standard. Candidates must also pass the relevant Praxis content area tests. In 2015, the average passing rate statewide for all Praxis Core and Praxis content area tests for which data are available was 98.5 percent. This suggests that the licensure standard in Maryland represents a standard of expectation far below that typically met by prospective teachers in the top performing countries.

Not only do the top-performers set very high standards for the students going into teacher education and for the completion of a program of preparation for teaching, but they do not compromise on those standards by allowing alternative routes that bypass those standards. In contrast, like all the benchmark states, Maryland has created alternative routes that enable candidates in high-need fields to circumvent the usual statutory requirements to be a teacher. Thirteen percent of Maryland program completers came from alternative routes in 2014, higher

than eight percent in both Massachusetts and New Hampshire, but lower than 38 percent in New Jersey. While Maryland compares favorably to New Jersey on this indicator of teacher quality, it still has a long way to go to match the top-performers.

Furthermore, Maryland, unlike the other benchmarked states, has to recruit a large number of teachers from out-of-state (61 percent in 2015). This presents a significant challenge in ensuring the quality of these teachers. Teachers from out-of-state with a valid out-of-state teaching license and at least three years of teaching experience in good standing are eligible for immediate licensure in Maryland even though they are not familiar with the curriculum, standards, and assessment policies of the State. Those without three years of teaching experience can apply for reciprocity by submitting their transcript and proof of passing scores on Praxis Core and Praxis II subject test to the Maryland State Department of Education, a very low standard.

RECOMMENDATIONS

10. Maryland must ensure that all teachers licensed to teach in Maryland, whether they have attended a teacher education program in Maryland or in another state or country, meet standards comparable to the standards met by teachers licensed to teach in the top performing countries. Specifically, Maryland must:
 - a. Consider, through established agencies and processes for determining licensure standards, adopting for use in Maryland the teacher licensure examinations used in the state of Massachusetts or edTPA, a performance assessment of teaching ability developed at Stanford University.
 - b. Phase-in these requirements so that the institutions responsible for preparing teachers in Maryland have time to make sure their students can meet these standards and to make sure that the new incentives intended to attract high performing high school graduates have time to affect the career decisions of high school students.
 - c. Require teachers from other states to pass the same certification exam as teachers prepared in a Maryland teacher preparation program.
11. Maryland must enhance the current alternative pathway into the teaching profession for career changers. This pathway allows a professional with demonstrated mastery of a certain subject matter and years of experience in the workforce to become a school teacher by “testing out” of the subject matter requirement and taking only a masters level one-year program in the craft of teaching to get a license as a teacher. Such teachers should be assigned an experienced mentor during their first year in the classroom.
12. Because raising standards for licensing new teachers in Maryland might greatly reduce the number of applicants to those programs if teaching does not become a much more attractive career option for high school students with strong academic records,

Maryland school districts must raise teacher compensation and improve the conditions under which teachers work.

Seed Grants to Form Collaboratives between Teacher Preparation Programs and School Districts to Begin Implementing these Strategies

RECOMMENDATIONS

13. In order to accomplish the strategies and achieve results, Maryland should create a seed grant program for school districts to partner with teacher preparation programs at Maryland universities. These collaboratives will each be composed of one or more preparation programs and one or more school districts. These entities will work together to create the conditions under which the universities will raise their standards for teacher admission and reform their education and training programs at the same time that the districts are making teaching a more attractive occupation for the high school students the university is trying to attract including implementing a career ladder and improving working conditions.
14. The structure of the seed grants would be short term, but multiyear, grants to help the collaboratives build their programs and “show the way” to other school districts and teacher preparation programs in the State as they implement the Commission’s recommendations. Technical assistance must be provided to applicants so that each applicant has an equal chance to put their best proposal forward.
15. An objective awards process should be established with very specific criteria. Grant applicants would be required to present a detailed plan for addressing all of the Commission’s recommendations related to teacher quality, including training all future teachers in basic research and data analysis methods; using formative evaluation, diagnostics, and prescription to identify student difficulties quickly and use appropriate research-based responses; and teaching future teachers how to teach the specific courses in the State curriculum to students from many different backgrounds. Part of the grant application should include how the applicant proposes to achieve greater diversity in the workforce pool.
16. A critical aspect of managing the seed grants is to ensure that each proposal includes a plan to monitor the success of the innovations to be implemented. If the innovation is producing the desired results, then there would be greater comfort that scaling that program up would lead to success and ensure a high return on investment of funds. It would be optimal that a few ways to implement the Commission’s recommendations are explored as one size may not fit all school districts when it comes to scaling up. This will also ensure that each district has control over how best to implement the recommendations for their schools. One of the data points would be the impact on teacher attrition rates.

17. The districts in this grant program should be expected to serve as state pilots for implementing the new leadership development systems, teaching career ladder systems, and advanced forms of school organization and management. Both the universities and the school districts would be expected to work very closely with each other to develop the clinical training schools for new teachers.
18. The university and district partners must take joint responsibility for building on the current Professional Development Schools to create a network of high quality Professional Development Schools serving very different kinds of students and communities in the State, schools that will implement the emerging career ladder system and use it to manage the new forms of school organization recommended by the Commission.

Career Ladder Systems

The top performing jurisdictions are increasingly using highly structured career ladders, similar to those found in most high-status professions, to structure the careers of teachers. In Shanghai and Singapore, the world's leaders in this development, as teachers progress up a well-defined sequence of steps, they acquire more responsibility, authority, status, and compensation, much as one would in a large law firm in the United States, progression from associate, to junior partner, to senior partner, to managing partner. Or one could compare the careers of school teachers, who typically have the same job on their last day of work as they did on their first day, to those of university faculty, who might progress from lecturer to assistant professor to associate professor to full professor to full professors who hold endowed chairs. The career ladders for teachers in the top performing countries can be visualized as a "Y" in which the teacher proceeds from novice up the ladder to an exemplar teacher and then choose either to proceed on one branch up to master teacher or up the other to principal and beyond. In these systems, master teachers typically make as much as school principals. The criteria for moving up the ladder start with a focus on excellent teaching, but then, as they move up, focus on the teachers' ability to mentor other teachers, lead other teachers in the work of teacher teams and, finally, lead other teachers in doing research leading to steady improvement in student performance in the school. In Ontario and Finland, the professional status of teachers and opportunities for differentiated roles creates comparable incentives for retention and professional development. All well-developed career ladders in the leading jurisdictions provide strong incentives to all teachers to get better and better at the work.

Like other states, Maryland has no statewide career ladder system for teachers, although, to its credit, Baltimore City's pilot system is further along than pilots in the other benchmark states that are all experimenting with career ladders. Massachusetts, the state with by far the best student performance in the United States, is the only top performing state that has a design for a state-level career ladder system, but that system has been implemented in only a few school districts. The National Board for Professional Teaching Standards and NCEE are exploring developing a national framework for a career ladder that would be piloted in select states.

RECOMMENDATIONS

The Commission makes a series of recommendations relating to establishing a career ladder for teachers and addressing the gap in salary between teachers and other high-status professions in Maryland. It is the intent of the Commission that these two efforts be implemented concomitantly.

1. In order to recognize effective teachers and incentivize them to stay in the classroom, Maryland must build a statewide career ladder system modeled on the most effective such systems in the US and the world.
 - a. The development of a viable career ladder will require considerable effort extending over several years and involving all of the stakeholders (school districts, MSDE, collective bargaining units, school boards, etc.).
 - b. Once established, all new preK-12 teachers would be placed on the career ladder. Currently serving teachers would eventually be placed on the career ladder after a reasonable transition period.
 - c. Maryland will need to convene a group of experts and stakeholders to develop a statewide framework for a career ladder, which would include the minimum number of ladder steps, the titles for these steps, and the broad criteria for placement on each of the ladder steps and for advancing between steps. In its final report, the Commission will provide additional detail on how it recommends this process should proceed.
 - d. Maryland's career ladder should present two paths to school leadership for exemplar teachers and mentors: a "Master Teacher" track that allows highly effective teachers to stay primarily in the classroom with appropriate compensation and an administrative track that gives teachers the chance to become assistant principals and principals after they have primarily worked in the classroom and have demonstrated the capacity to be successful teachers and mentors.
 - e. The process for evaluation and promotion of teachers on the career ladder should include a combination of master teachers and administrators.
 - f. While the career ladder will have a statewide framework as described above, the districts and local bargaining units would negotiate the compensation and specific responsibilities at each step, as well as any additional ladder steps or requirements added to the statewide framework through local negotiations.
 - g. The career ladder should be designed to complement and facilitate the implementation of the high performance work organization in the schools.

Teacher Compensation

Because the top performing jurisdictions are trying to attract teachers from the same cohort of high school students who go into the high-status professions, their typical stated policy is to compensate them at levels comparable to compensation for the high-status professions.

Starting pay for teachers in these countries is often higher than in the high-status professions. When lower, the difference is almost always less than 25 percent. Neither Maryland nor the top performing states in the United States do that. The average statewide *starting* salary for teachers in Maryland was \$34,234 in 2015, which lagged behind other professions, by up to 56 percent in 2015. This compares to up to 52 percent in Massachusetts, 46 percent in New Hampshire, and 42 percent in New Jersey. The average of all teachers' salaries in Maryland is \$66,482. This also lagged behind other professions by up to 40 percent in 2015. This compares to up to 16 percent in Massachusetts, 31 percent in New Hampshire, and 26 percent in New Jersey.

Current salary levels combined with working conditions are having a negative impact on recruitment and retention of teachers in Maryland public schools. In particular, perilously few Maryland students are opting to pursue teaching careers. Enrollment in Maryland teacher preparation programs has declined by approximately 20 percent since 2010, and the number of graduates decreased by nearly the same amount in 2014 and 2015. Of particular concern, it appears from the available data that a sizable portion of Maryland teacher graduates do not pursue a teaching career in Maryland. Roughly 60 percent of *all* teachers hired in Maryland are from out-of-state, and less than one-quarter of newly-prepared teachers hired each year are prepared at a Maryland university, a figure that has been declining in recent years.

While paraprofessionals and other school employees contribute to the operations and success of a school, the gap analysis and recommendations are focused on teachers and other professionals who work primarily in the classroom.

RECOMMENDATIONS

2. The gap in compensation between teachers and high-status professions that require comparable levels of education should be eliminated. A timeline for accomplishing this goal and the appropriate benchmark comparisons will be included in the Commission's final report.
 - a. Increases in compensation for Maryland teachers must be tied in significant measure to their position and advancement on the career ladder.
 - b. Advancement up the ladder should be based on the acquisition of specified knowledge and skills, rigorous evidence of success as a classroom teacher, and/or additional responsibilities commensurate with the additional compensation. Teachers should demonstrate success with students from different demographic backgrounds before moving to the top of the ladder.
 - c. Teachers' compensation should continue to be negotiated at the local level between bargaining units and school boards, but the State should begin conducting regular periodic surveys of compensation in Maryland, both on a county and regional basis, to determine prevailing rates of beginning and average compensation in the high status professions. This information will provide a benchmark for teachers' salaries as a proportion of high status

professions' salaries and enable the State to begin planning for achieving the goal of this recommendation.

3. Closing the gap in compensation between teachers and comparable high-status professions should be phased-in as part of the implementation of the Commission's recommendations, including changes in teacher preparation programs, raising the standards for teacher certification and re-certification, the development of a career ladder system, and the new approach to school organization and management.
4. While the career ladder is being developed and implemented, Maryland needs to systematically phase-in salary increases for teachers (above and beyond cost of living adjustments) over the next 4 or 5 years in order to stem the decline in teacher recruitment and retention and to begin reducing the gap between compensation levels for teachers and other professions requiring comparable levels of education. Of note, teacher compensation in Maryland is below the average salaries in two of the three states used by the Commission in its benchmarking work.
 - a. During the phase-in period for the career ladder and while Maryland is developing and implementing an increase in certification standards, average salaries of Maryland teachers should be brought to the average of the two comparison states, New Jersey and Massachusetts, whose demographics and economy most resemble Maryland.
5. Maryland should identify and implement best practices to attract a diverse pool of teachers. The following could be evaluated for effectiveness:
 - a. Providing child care incentives to teachers, which in combination with a higher salary, could prevent teachers from stopping out of the profession when they have children of their own.
 - b. Providing incentives such as statewide property tax abatement or home mortgage assistance.
 - c. Expand current tuition remission or discounts available to children of higher education employees.
 - d. Recruiting future teachers who attended primary and secondary school in that school system should be encouraged as a way to lower teacher attrition rates.

The Organization of Teachers' Work

The career ladders in the top performing jurisdictions are organized to support a very different form of work organization in the school, much more like that found in professional service practices such as law firms, engineering firms, or universities than the form of work organization typically found in the American school. American teachers are expected to spend more time facing students in the classroom than teachers in any other industrialized country. By contrast, in many top performing countries, teachers are in front of a class teaching for

about 40 percent of their time at work. Most of the rest of their time is spent in teams working to systematically improve their lessons and the way they do formative assessment, work together to come up with effective strategies for individual students who are falling behind, tutoring students who need intensive help, observing and critiquing new teachers, observing other teachers to improve their own practice, doing research related to solving problems in the school, and writing articles based on their research. The career ladders in these countries have structured the roles available to teachers as they move up the career ladder to support the form of work organization just described. There is no state in the United States that has thus far implemented policies designed to support the form of work organization just described. However, the Commission did hear testimony from several public schools in the State including charter schools that have organized their schools more like top-performers.

RECOMMENDATIONS

6. Maryland needs to change the way its schools are organized and managed to make them more effective and to create a more professional environment for teaching, which the career ladder is designed to facilitate and support.
 - a. The state should phase-in a reduction of the maximum time, currently 70 to 80 percent, that teachers are expected to teach in a typical week. This would give teachers more time to work as professionals in collaboration, as is the case for teachers in countries with high performing systems, to improve the curriculum, instructional delivery, and tutor students with special needs. The magnitude of the reduction in teachers' class time and the cost of implementation requires further study by the Commission in the coming months.
 - b. In order to effectively use this additional collaborative time and the new organization of schools, teachers should receive training on the Commission's recommendations and the best uses of collaborative time to build professional learning communities. As these communities develop and more decision making is moved from the central administration to the schools, more school leadership roles will be created, which will provide more opportunities for greater roles and responsibilities for teachers moving up the career ladder. This training should be a high priority for implementation.

Support for New Teachers

Ontario, Shanghai, and Singapore have well-developed systems to induct new teachers into the teaching profession. They are tightly structured and monitored: mentors are recruited, selected through an interview process, trained, and evaluated. Maryland has an induction coordinator for each school district and the state provides orientation training for all new mentors, but, as in Massachusetts and New Jersey, mentors are self-selected and receive minimal ongoing training at the discretion of local districts. New Hampshire leaves the decision of whether to implement a program to the districts.

The 2016 Maryland Teacher Induction, Retention and Advancement Act (TIRA) established a stakeholder group to develop recommendations for strengthening teacher induction in the State. The TIRA stakeholder group built on the work of the Governor's P-20 Council's Task Force on Teacher Education, which made numerous recommendations to improve teacher preparation and induction programs in 2015. The TIRA recommendations include: integrating mentoring during the teacher training practicum with mentorship during induction and establishing formal qualifications for mentor teachers such as tenure, five years of teaching experience, and highly effective ratings on teacher evaluation and principal recommendations. These recommendations represent a good starting point for developing a high performance system for making mentoring new teachers an integral part of the new career ladder system.

Another promising model also exists in Maryland. Known as the Peer Assistance and Review Program (PAR), Montgomery County Public Schools has successfully implemented this collaborative partnership between the school system and the teachers' union for over 20 years to use successful teachers, known as consulting teachers, to mentor and develop new teachers in the profession. Under PAR, consulting teachers also observe and provide feedback to existing teachers about their performance and best practices in the field, a practice used in the top professions. Consulting teachers are given release time from their classroom duties to give their full attention to reviewing and assisting both new teachers and teachers-at-risk.

Helping Teachers to Continually Improve Their Practice

In Shanghai, teachers are required to take 120 hours of professional development during their first year and 240 hours every five years after that. Senior-level teachers are required to take 540 hours every five years. In Singapore, all teachers are required to have 100 hours of professional development each year. In Ontario, it is the equivalent of Shanghai at 6 days per year, while Finland allows local municipalities and schools flexibility to allocate time for professional development as they see fit.

Maryland sets professional development requirements for teachers who must earn an "advanced teaching credential" to continue teaching after five years of teaching by taking 36 hours of professional development, including 21 hours of graduate credit, earning a master's degree in education or earning a certification from the National Board for Professional Teaching Standards along with 12 hours of graduate work. After earning this advanced credential, Maryland teachers must be recertified every five years, which requires taking at least six credit hours. Massachusetts and New Hampshire require 100 hours and 75 hours of professional development every three years for recertification. New Jersey only requires 20 hours of professional development for a one-time recertification of a provisional license, with no additional requirements. Like the benchmark states, Maryland generally leaves provision of professional development to districts. The research shows that requirements for specified amounts of professional development of the usual sort, including requiring a Master's degree, acquiring certificates, taking courses or earning credits by taking workshops, have little or no effect on the performance of the students who are involved in this kind of professional

development. Only when these forms of professional development are used to supplement professional development that is embedded in the work that teachers do as they participate in teams that work to systematically improve student performance does professional development make a real difference in student performance.

RECOMMENDATIONS

7. Maryland must strengthen its teacher induction systems. As part of its policies establishing the career ladder system, Maryland should require that the career ladders include as part of the responsibility of senior teachers the responsibility to mentor new teachers and experienced teachers who need help; as part of the policies established to implement new forms of work organization, these mentor teachers should be given enough time with their mentees to provide the guidance and support they will need to succeed in their initial years in teaching.
8. The collaboratives previously recommended should include teacher inductions systems for new teachers integrated with their teacher preparation program. An excellent starting point for a new induction system is the Teacher Induction and Retention Program (TIRA), modeled on Peer Assistance and Review Program (PAR), which should be scaled up across the State as quickly as possible, recognizing the challenges of economies of scale in smaller school systems, evaluated on an ongoing basis, and integrated into the new career ladder system. The initial focus of enhanced induction programs should be new teachers in schools serving high concentrations of students living in poverty and expanding to all new teachers over time.
9. Maryland also needs to strengthen substantially its professional development policies and practices. At present, professional development in Maryland places too much emphasis on general and generic topical presentations and too little emphasis on advancing teachers' content knowledge and instructional effectiveness. The seed funds previously mentioned should include collaborative partnerships between universities and school districts to create rigorous professional development programs focused on teacher's pedagogical capacity and content knowledge. Once developed these model programs should be scaled up across the State.

Attracting and Grooming a High-Quality Pool of Candidates for the Principalship

Although some superintendents of schools in the United States try to identify teachers who might be good school leaders in the future and give them opportunities to develop their leadership capacity, the Commission knows of no state that does this as a matter of statewide policy. As a result, the pool from which the vast majority of future school leaders comes is typically made up of people who volunteer for the role and who then enroll in state-required postsecondary preparation programs that rarely, if ever, assess applicants' potential as good school leaders. In contrast, top performing countries have developed policies to attract teachers who have been carefully identified as people with high leadership potential. These

teachers are then given a carefully chosen set of opportunities to develop those skills while still teaching, thus creating a large, very high quality pool of candidates for school leader positions. No American state has developed policy structures of this kind on the scale required to meet all their school leadership needs.

In order to become certificated as a principal, Maryland principals are required to receive a relatively high score on the School Leaders Licensure Assessment (SLLA). However, this test is not performance-based like those used in many top-performing countries. A recent study by researchers at Vanderbilt University found that the SLLA is not effective in predicting principal job performance. While individual districts in Maryland may do so, the State, like other U.S. states, generally does not actively identify and groom prospective school principals. Instead, it relies on individuals to self-identify and enroll in a preparation program. However, the Promising Principals Academy, started in 2014, provides leadership development for up to 48 candidates per year (in comparison to the projected 388 principal preparation program completers for 2016-17 who self-select). In another program of note, Prince George's County partnered with the National Institute for School Leadership (NISL) to develop an aspiring principal program that has a rigorous selection process in an effort to develop a talent pipeline for that district. To date, roughly 175 aspiring principals have been trained in Prince George's County.

Tying the Development of School Leaders to the System's Goals and Strategies

The top-performers provide future leaders with the modern management skills derived from the best research on leadership from the world's best business schools and military academies. That knowledge is matched with the excellent knowledge of curriculum and instruction that comes from the fact that the leaders they develop have come exclusively from the ranks of their best teachers and teacher leaders. But their systems are also designed to do something else that is very important to them. They are designed to give their future leaders the knowledge and skills they need to fully implement the specific structures, strategies, policies, and practices that underlie that country's overall design for their high performance system. They are seen as implementers of the specific kind of high performance management system their own country has developed as a matter of policy. They do not leave the curriculum for school leadership development up to the schools of education. They expect the curriculum of the schools of education to embrace these imperatives because the education and development of their future leaders is the linchpin of their strategy for implementing the strategies they have chosen to drive their education system forward. No American state has yet developed this kind of policy framework for the development of their school leaders.

Developing Leaders Who Have the Knowledge and Skills to Manage Modern Professionals in the Modern Professional Workplace

The work organization of the typical American school has more in common with the organization of blue collar work in early 20th century factories than with the kinds of modern work organization typically found in modern professional practices and workplaces. In

industrial age workplaces, most of the skill required to make the important decisions is found in the managers, who are expected to direct the work. In the latter, most of the expertise is found in the front-line doctors and engineers and other professionals, and the leadership is expected to create and sustain organizations that enable and support those professionals as they make the important day-to-day decisions, usually working in groups, that need to be made. The top-performers, are, as matter of *policy*, moving toward professional forms of work organization in their school. Because managing professionals is so different from managing people in industrial work organizations, the top-performers put a lot of effort into giving their school leaders the skills they will need to manage and support highly skilled professionals working in modern forms of organizations explicitly designed to support professional work. In the United States, matters of school organization in this sense are not normally addressed as matters of policy if they are addressed at all.

Creating an Environment in Which School Leaders have the Incentives and Support to Get Better and Better at the Work

In a growing number of top performing countries, there is a well-developed career ladder for school leaders that is an extension of the career ladder for teachers. Just as for teachers, as one ascends this career ladder, one acquires more responsibility, more authority, more status, and more compensation. As in the case for teachers, this creates an environment in which there is a never-ending incentive for school leaders to get better and better at the work. Again, as in the case with teachers, it is frequently difficult if not impossible to ascend the career ladder without taking multiple assignments to serve as a school leader in a variety of schools serving large proportions of disadvantaged students. This policy provides many schools serving large populations of disadvantaged students with exceptionally qualified leaders and, at the same time, assures the state of a large supply of school leaders at the upper levels of the system who have served in schools populated by many different kinds of students.

Maryland does not have a statewide career ladder system for principals. There is, however, a pilot principal career ladder in place in Baltimore City, upon which the state could build as it creates a world class system, and Prince George's County has been developing a nationally recognized system for training school leaders.

RECOMMENDATIONS

1. Maryland should establish a set of aligned policies to bring the initial education and training of new school leaders, including principals, district administrators and other leadership roles, in the State up to global standards, and to help Maryland school leaders develop the leadership and management skills they will need to make their schools successful and, in particular, to fully implement the recommendations made in this report in every school and district in the State. These policies include:
 - a. A career ladder system for school leaders should be developed in the career ladder system Maryland creates for teachers. A series of steps for school and district leaders, which should be built as a branch of the career ladder structure after

- mastery of the fully–proficient step for teachers, thus assuring that potential school leaders in Maryland have demonstrated the skills and knowledge needed to be highly competent instructional leaders before they are groomed and trained for school leadership positions. The State should require that individuals who wish to ascend the career ladder for school leaders have significant experience and success at schools that represent the demographic and economic diversity of the school districts in which they have worked. Ascension on the career ladder should be based on proven outcomes and potential for further leadership growth. Further, in the upper reaches of the school leadership career ladder, school leaders should be expected to serve as mentors to new leaders of schools serving large proportions of low-performing students.
- b. As the success of a school leader grows, thus demonstrating the effectiveness of the leader and the leader’s team, more autonomy should be provided to that school leader for making school level decisions.
 - c. Maryland should allow flexibility in how one becomes a school leader so as not to preclude uniquely talented and passionate leaders who did not start their career as a teacher and, in fact, perhaps started their career in a non-education–related field.
 - d. The State should use its program approval powers to require higher education institutions that offer programs leading to school leadership certifications to carefully evaluate the potential of candidates to be effective school leaders. The evaluation should include evidence that the school district in which that individual has been working as a teacher has identified that individual as someone with a high potential for leadership and can present a record showing that the individual has been offered various teacher leadership roles and has performed well in those roles.
 - e. Universities wishing to offer graduate level courses in school administration for certification should present evidence that 1) their curriculum will enable the graduates of those programs to successfully organize and manage schools and school systems in a way that closely tracks the practices of the countries with the highest and most equitable student performance and equity in the world; 2) their curriculum will enable their graduates to manage highly skilled professionals working in a modern professional work environment; 3) their curriculum will give the students in these program the knowledge and skills needed to successfully implement the recommendations made in this report; and 4) their curriculum will enable school leaders to effectively conduct peer observation and evaluation of other school personnel.
 - f. The university-school district collaboratives previously described should be tasked with developing a pilot leadership career ladder and demonstrating effective ways to implement the State system for creating an abundant supply of high quality school leaders for Maryland schools. The recommendations made immediately above should be phased–in over time.
2. Maryland should train every currently serving superintendent, senior central office official, and principal in the State to give them the vision, motivation, skills, and knowledge they will need to implement the recommendations made in this report. That

training should be carried out as a high priority initiative as early in the implementation of this report as possible. The training should be designed to get all of Maryland's school leaders, at every level, thoroughly conversant with the recommendations in this report and to help them develop the capacity to implement those recommendations well.

3. School leaders should reflect the diversity of the student population and, through their training as both teachers and leaders, provide culturally relevant instructional techniques and leadership in their schools.

College and Career Readiness Pathways

Develop World-Class, Highly Coherent Instructional Systems

**Create Clear Gateways for Students Through the System, Set to Global Standards, with No
Dead Ends**

Create an Effective System of Career and Technical Education and Training

A System that Prepares Students for College and Careers

The top performing countries typically use statewide or nationwide tests no more than three times in a student's career in high school. These tests are given at the entrance to high school, if entrance to high school is competitive, at the end of what in the United States would be the sophomore year in high school, and at the end of high school. The reason a test is given at the end of 10th grade is that this marks the end of the common curriculum, the curriculum that all students are expected to master in order to enter rigorous pathways matched to their academic and career interests. For their final two years in high school, students go either into a program intended to prepare them for university or for a career, with work beginning right after high school or after more career and technical education at the postsecondary level. Increasingly, in many countries, students who are in a career and technical program in secondary school go on to postsecondary education after high school and students who are in the academic stream in high school are getting vocational qualifications as well as academic credentials after high school.

More generally, average academic achievement of students in the top performing countries overall enables them to leave high school with the equivalent of two to three years more education than the typical American high school graduate. This means, for example, that what the American student is studying in the first two years of all but highly selective colleges and universities is being studied by his or her counterpart in a top performing country in high school.

High performing countries focus on "qualifications" not diplomas. Literally, a qualification is a certification that says that the student has taken specific courses and has gotten specified grades in them. In these countries, it is very clear what courses a student has to take, the content of these courses and the grades he or she has to have achieved to pursue further study or begin a career.

Such a system only works because the top systems not only say what subjects a student must study, but also describe the trajectory of topics that must be studied in that subject as a student goes through school, create course syllabi set to that trajectory or framework, and create and score examinations set to the course designs. Thus all employers and universities know just what it means to have gotten a particular grade in a particular course. They know the content of the course and they know that, because the exams are centrally scored by one exam authority, they can trust the grade. Ultimately, this is exactly what a high school diploma should signal to employers and colleges and universities in Maryland and across the United States.

With such a system in place, parents can hold the schools accountable for student success on state end-of-course exams. Students work hard in school because they can easily see that doing well in school is very important to their future whether they want to fabricate the blades for high speed, high temperature turbines or argue cases in court. No state in the United States has built a real system that encompasses all of these attributes.

Building on Maryland's Assets

While Maryland, like other states, does not have a system of the kind just described, it does have assets that can be built on to create such a system.

Maryland was among the first states to develop the Maryland College and Career Ready standards built on the Common Core State Standards that are measured by the PARCC tests aligned with the standards. At present, students are expected to reach that standard by the end of their junior year. It is also the case that Maryland has an additional standard that all students are required to reach, and a defined set of courses in subjects that are required, in order to graduate from high school. These elements can be built on to create a real qualification system set to global standards. To do that, one standard must be identified that students are expected to meet, and the age at which the standard is supposed to be met would have to be moved back to the end of the 10th grade; a defined set of pathways for the junior and senior years, benchmarked to global standards, would have to be created; and the 10th grade standard would also have to be set to a global standard, as well as aligned with Maryland's actual requirements for success in the first year of community college.

The existing Maryland lesson plans and lesson seeds could be a good starting point for developing the kind of K-10 curriculum with full supports that typifies the instructional systems in the top performing countries. The level of literacy expected by the end of 10th grade would have to be benchmarked to the top-performers expectations for their students at that grade level. Once that is done, a full trajectory of expectations—grade by grade or grade span by grade span—would have to be set for each subject required for graduation, through the 12th grade. Then course syllabi would have to be written or, where they exist, revised and refined and high quality exams created where needed. Examples of student work that meets the standards at the 10th grade level would have to be collected and explanations of why they meet the standards written.

Perhaps the greatest challenge for Maryland and other states, if they want to have a globally competitive education system, is the steps it will have to take to bring its students up to the level of academic performance found in the top performing countries. That is true for students at all levels but it is especially true for those who are most disadvantaged.

At present, far too many Maryland students leave high school reading at the 8th grade level or below based on community college remediation rates. In 2017, 49 percent of Maryland students taking PARCC English 10 received a score of 750 or higher (4 or 5), which is considered on track for college and career readiness (even fewer, 36 percent, received a score of at least 750 on PARCC Algebra I). For students reading below the 10th grade level, the kinds of measures that the top-performers use to assess where students are when they enter the first grade (kindergarten in the United States) and frequently thereafter will be essential. Those diagnostics will have to be used to develop plans for each student to address his or her challenges straight on until that student is on track. Use of these strategies will spell the difference between success and failure for a very large fraction of Maryland students.

RECOMMENDATIONS

1. Maryland needs to modify its current policy on College and Career Readiness to create a system that has all the advantages of globally-emerging qualifications systems. Such systems enable their students to emerge from high school two to three years ahead of where Maryland's typical student is at present and ready for both demanding college-level work and no-less-demanding technologically-demanding careers. Such a system will require:
 - a. Moving the grade year by which students¹ are expected to acquire levels of proficiency in mathematics and English literacy needed for success on adopted Maryland assessments (e.g., a score of 4 or 5 on the PARCC assessment) in the first year of community college to the end of 10th grade, on the understanding that some students may take as long as the end of their senior year to reach this standard.
 - b. Conducting a study of the actual requirements in mathematics literacy for success in the first year of a typical Maryland community college program to determine the appropriate mathematics assessment for college and career readiness at the end of 10th grade (e.g., Algebra I, Statistics, Algebra II).
 - c. Incorporating a science assessment into the requirements for college and career readiness by the end of 10th grade (science is already a high school graduation requirement) — and considering whether other subjects should be added.
 - d. Using PARCC as the State's measure of the literacy and mathematics requirements to be on track for college and career readiness, and for high school graduation, but beginning to plan for the use of high quality assessments in the event that PARCC is no longer available.
 - e. Regularly evaluating and benchmarking graduation standards for all subject requirements to their equivalents in the top performing countries and states and regularly reporting the data with a goal of raising graduation standards to the equivalent of top performing countries and states over time.
 - f. Setting a goal that by a date certain schools will be expected to fully implement the on track for college and career readiness standard for students, including the necessary programs in grades K–12, and schools will be held fully accountable for their success in helping students reach this standard. The Commission will propose such a date in its final report.
 - g. Requiring all Maryland high school students who are on track for college and career readiness by the end of 10th grade to be offered, by a certain date, rigorous pathways toward college and careers, including a high school upper division program consisting of the International Baccalaureate Diploma Program, the Advanced Placement Diploma program, University of Cambridge Diploma Program or a program of similar academic rigor; a program consisting of all the courses

¹ It is understood by the Commission that college and career readiness may be different for students with the most severe disabilities, but the curriculum and instruction system, including standards and expectations, needs to be world-class for all students.

- required to get an Associate's Degree by the end of the senior year in high school (in collaboration with higher education institutions); and a high quality career and technical education program resulting in either an industry recognized credential or a credential entitling the holder to begin a demanding post-secondary program of technical education and training. The Commission will propose such a date in its final report.
- h. Creating an early warning system as soon as possible based on formative evaluations that enable teachers to identify students who are beginning to fall behind and have teachers work together to get students back on track. This process should be done in all grades.
 - i. For students who are not college and career ready by the end of the 10th grade, Maryland should build on its current transition course model. Interventions should include providing an evidence-based curriculum that is designed to help students catch up and targeting more teachers and resource personnel to struggling students. Students who are close to meeting the college and career ready standard at the end of 10th grade, or who meet the standard before the end of 12th grade, should have opportunities to participate in the college and career pathways, for example, by taking a co-requisite higher education course that includes remedial and credit-bearing coursework in a subject for which they are not yet college and career ready.
 - j. Constructing clear curriculum frameworks in all grades K-10 for all required subjects for which a framework does not already exist and using the curriculum frameworks to:
 - i. Write sample course syllabi for each required subject in each required content area.
 - ii. Write sample essay-based examinations for each grade, as appropriate, matched to each syllabus, to the extent required.
 - iii. Collect examples of student work in each grade that meet the standards for each required subject and writing commentaries explaining why the work meets the standards so that teachers and students know exactly what is required to meet the standards.
 - k. Requiring all Maryland community colleges to enroll students that achieve the 10th grade standard in initial credit-bearing coursework without remediation.
 - l. Setting a standard that students enrolling in Maryland four-year universities must achieve in order to enroll in credit-bearing coursework without remediation, and requiring public universities to enroll students meeting the standard in such courses.

Career and Technical Education

Unfortunately, career and technical education (CTE) in the United States is widely regarded as what a student does if he or she cannot do academics. In the top performing countries, however, a student is expected to have achieved high competence in academics whether that student is headed to university or vocational training. There are examples of high schools in the United States that follow an academically rigorous career and technical education model, such

as Western Tech and Sollers Point high schools in Baltimore County. But no state has, as yet, provided such opportunities on a statewide basis, although efforts are underway in California, Massachusetts, and Delaware, to do so.

Maryland has for several years been focused on increasing college and career readiness and college completion, recognizing that 66% of jobs as reported by the Georgetown University Center on Education and the Workforce that the current generation of students will be seeking will require some postsecondary credential, be it a college degree or industry certification. However, in Maryland, about 47% of adults hold a college degree and only 3% receive a high-quality postsecondary certificate. Building out a high-quality CTE program at the secondary level will help prepare Maryland students for the jobs of the future. Currently, only about 21% of Maryland high school students complete a CTE program or earn a skills credential. Legislation enacted in 2017 set an ambitious goal that by 2025 45% of high school students will have completed a CTE program, earned an industry-recognized credential or completed a youth apprenticeship program. This goal is moving the State in the right direction. However, Maryland must proceed strategically to ensure that high-quality CTE programs are offered to students that lead to high-wage jobs and transportable skills, and do not track students into low-wage jobs. In addition, completing a CTE program is not the same as receiving an industry-recognized certificate or successfully completing a youth apprenticeship or registered apprenticeship that shows that a student is ready for a job in the career field. Schools should regularly be judged not just for how many students graduate from high school and enroll in postsecondary education, but also for how many students achieve industry certification prior to graduation. Presently, only 9% of students receive an industry certificate.

Two initiatives offer opportunities for Maryland to evaluate and build on its existing CTE program. Pathways to Prosperity is an initiative by Jobs for the Future, in collaboration with the Harvard Graduate School of Education and state partners, to increase the number of students who complete high school and earn a postsecondary credential with labor market value. Created in 2012, states and regions in the Pathways network design academic and career pathways in grades 9-14 focused on high-growth, high-demand sectors of the economy such as information technology, health care, and advanced manufacturing. The network allows states to build their capacity to design, implement, and scale state and regional pathways. This network can provide Maryland with the tools needed to develop and deliver high-quality CTE programming. There are currently nine state members: Arizona, California, Delaware, Georgia, Illinois, Massachusetts, Missouri, New York, and Tennessee.

ConnectEd began in 2006 in nine districts in California with high numbers of disadvantaged students and below-average student achievement. It has since expanded its services beyond California and is working with more than 30 districts in California, Illinois, Michigan, New York, Ohio, Texas, and Wisconsin. ConnectEd helps leaders and educators envision and chart a course of action for building a system of college and career pathways, drawing on lessons and insights from its work in creating Linked Learning. Linked Learning is a high school model that combines college-focused academics, rigorous technical education, work-based learning, and

personalized student supports. ConnectEd provides assistance with capacity assessment and planning, pathway design and implementation, leadership development and coaching, pathway quality review and continuous improvement, instructional support, and work-based learning system development.

If Maryland chooses to emulate the emerging global best practice with its career and technical education program as well as in its academic program, it would have to focus that program on the junior and senior year of high school, set it to a high academic standard, collaborate closely with the employer community in setting the technical standards for the curriculum, closely integrate the program with the postsecondary career and technical education program at its community colleges so that the transition is seamless, and provide instructors who are deeply conversant with the state of the art in the occupations the students are training in. Maryland would also have to create opportunities for students to acquire a wide range of technical skills at employer work sites, which may require new State regulations on apprenticeship for minors, below market wages for apprentices and other adjustments to the current environment available to high school age students for acquiring the kinds of skills they will need in an age of rapidly advancing automation, neural networks, and artificial intelligence.

RECOMMENDATIONS

2. While Maryland has made considerable progress in creating Career and Technical Education programs, the State must make significant changes in its approach to CTE education if it wants to provide high quality programs like those that countries leading the way in this arena have established. To this end, the Commission recommends:
 - a. Creating two groups to improve the current CTE program.
 - i. The first group would be an ad hoc (non-permanent) group formed by the State as soon as possible. It would be composed of a select few individuals who have expertise in CTE programs (or related knowledge and experience) and the needs of the Maryland business community. It would act independently from Maryland's education agencies. The group would (1) benchmark Maryland against the best CTE systems in the world, including Singapore and Switzerland, and, on the basis of that benchmarking; (2) building on successful efforts in Maryland, recommend a CTE curriculum framework, which would include an assessment of the needs of Maryland's economy and employers, youth apprenticeships, and other offsite training opportunities; (3) recommend a governance structure to implement a CTE system comparable to the best such programs in the world; and (4) report back to the legislature and the Governor on the steps that the State needs to take to develop a fully world-class career and technical education system.
 - ii. A second, permanent group would be formed to monitor the implementation of the recommendations and to hold school systems accountable for the success of their CTE programs. This second group would advise the appropriate State agencies and school districts on its career and technical education programs and would be a larger group with

representatives from appropriate State agencies, leading Maryland employers, trade unions, State economic development officials, relevant experts, and Maryland educators at the elementary and secondary and higher education levels.

- b. Requiring the CTE programs offered at Maryland schools to result in, upon successful completion, an industry recognized certification that would lead to meaningful employment.
- c. Incorporating skill standards into the CTE curriculum—including those for ‘soft’ skills— that students will need to meet in the future that should be driving today’s career and technical education programs.
- d. For students who are not college and career ready by the end of the 10th grade, Maryland should build on its current transition course model. Interventions should include those identified in Recommendation #1i. Students should also have opportunities to participate in CTE courses concurrently with being enrolled in transition courses.
- e. Fully engaging employers in the design and provision of the workplace-based programs needed to equip students with both the theoretical and practical skills required to pursue rewarding careers in the future.
- f. Launching a statewide initiative to rebrand CTE as providing valuable and value-added skills for all students and partnering with industry to develop a media campaign.
- g. Collaborating with the State’s community colleges to design a system in which high quality career and technical education programs are offered to high school students with the assistance of community colleges and these high school programs are aligned with equally high quality community college technical programs, forming a continuous course sequence leading in some programs to advanced study in university.
- h. Joining with a national network of states interested in benchmarking the best career and technical education programs in the world and in collaborating in the development of advanced systems for career and technical education, such as the Pathways to Prosperity and ConnectED.

Leaving No Student Behind

While a system of this general design has proven—all over the world—to be a very powerful tool for raising student performance to the highest levels in the world at scale, it is particularly important for students from low-income and minority families. Although many Americans think the United States is nearly unique in having a lot of poor and minority students, the United States is actually about in the middle of the distribution of all the PISA countries. About 17 percent of the U.S. population lives below the national poverty line, which is roughly the same as Shanghai, Japan, and Germany. Hong Kong (20 percent) and Singapore (26 percent) have more poverty than the United States; all of these countries score much higher than the United States on PISA. In terms of the percent of students who are immigrants, the United States is

roughly in the middle at 23 percent and Singapore is similar at 21 percent; Hong Kong (35 percent), Canada (30 percent), and New Zealand (27 percent) all have higher rates of first and second generation immigrant students, and again, score higher than the United States on PISA.

Most of these systems do not rely on multiple-choice, machine scored examinations. Most questions on their examinations are essay-based. They are therefore able to assess higher level skills and more kinds of skills than can be assessed with most of the assessments used in the United States, which gives their students a very important advantage in the global marketplace. But these top systems also publish both their exam questions and answers that earn high marks, along with an explanation, from the examiners, as to why the answer deserved high marks. In this way, the top performing countries strike a very important blow for equity, because this system has the effect of setting the same expectations for the homeless child in the center city as for the rich student in the suburbs. The standards are high and they are uniform. With examples of real student work that meets standards in front of them, students know exactly what they have to do to succeed. All of the top performing countries benchmark their academic and work ready standards to those of other top performing countries and in that way make sure that their standards are high enough to assure all students that, if they meet those standards, they will be globally competitive.

Precisely because these standards are high, the top-performers pay a lot of attention to developing strategies for catching students who start to fall behind as early as possible and getting them back on track for success.

Ontario assesses school readiness at age five. Using a tool called the Early Development Instrument, they measure physical health and well-being, social competence, emotional maturity, language and cognitive development, communication skills, and general knowledge. A little over 70 percent are judged ready; those that are not are given double-period math and/or literacy classes with specialized teachers through primary school. In addition, the Ontario authorities put a lot of effort into providing teachers with formative and diagnostic assessment tools that teachers can use to keep track of student progress and provide extra help when needed.

In Finland, all students get Individual Education Plans, based at the outset on the results of diagnostic tests given when students enter primary school. All Finnish school faculties include a special education teacher who is there to make sure that any student who needs special help gets it. During their careers in school, close to 70 percent of Finnish school children get special help at some time or other, which takes the sting out of being labelled a special education student. The vast majority of students are considered “special education” students in Finland at one time or another.

In Singapore, too, students are screened when they enter primary school. Children who need extra help are given a half-hour a day of extra reading time and four to eight additional periods of mathematics each week for the first year of primary school. At the end of the year, teachers

make a determination as to whether to keep students in the program for a second year. This program has recently been expanded to the secondary schools as well.

In all of these systems, there is a massive effort to make sure there is a surplus of high quality teachers available for every school. In almost all of these systems, extra teachers are assigned to schools serving high proportions of disadvantaged students. In many of them, there are strong incentives for the best teachers to serve in schools serving high proportions of disadvantaged students.

But the commitment to enabling all students to get to high standards is most apparent in the way the top-performers use their teachers' time. Much less time is spent in front of students teaching. Much more is spent in other ways. For example, one of those ways in Singapore and Shanghai is an hour a week spent by all the teachers in a regularly scheduled meeting. One of the topics at those meetings is students whose daily formative evaluation indicates are in danger of falling behind. All the teachers of that student will talk with one another to exchange ideas as to what the problem is and what might be done about it. The result might be a commitment from one teacher to talk with the student's parents or from another to conduct a diagnostic test or for another to make a change in teaching method. That team will keep checking on that student until he or she is back on track. Or the team might decide that the student needs regular tutoring to catch up and the teachers use some of the time they are not teaching during the regular school day to do that tutoring. Tutoring is not a special program with its own administration. It is a regular activity in the school, available to any student who needs it from the regular teachers, who are trained as, among other things, skilled tutors. In this way, all students, from the most gifted to those who need a lot of extra help to master the regular—but demanding—curriculum are able to do so with a minimum of labelling and a minimum of separation from the other students.

RECOMMENDATIONS

3. Maryland must, like the top-performers, measure the school readiness of all incoming kindergarteners and enable teachers to use the knowledge thus gained to create education plans for each child and for the school that reflect the professional judgment of the faculty of the school as to the measures that need to be taken to help each child get on track and stay on track to college and career readiness.
4. Maryland schools must, like Singapore, Finland, and Ontario, make whatever adjustments are needed in the normal program of the school to focus on the core needs of each child as revealed in the initial screening.
5. Maryland must provide every elementary teacher in the State and appropriate university faculty members responsible for the preparation of elementary school teachers training in tutoring techniques shown by research to be effective in teaching reading to students who enter first grade not yet ready to profit from on-grade instruction in reading and to students who remain behind in the primary grades. The ability to identify the differing needs of

struggling learners and the skill to design appropriate intervention strategies should be built into the teacher preparation programs in all schools of education across the State as well as ongoing professional development for teachers.

6. Until the policy recommendations related to teacher training in Recommendations #4 and #5 are implemented and Maryland teachers routinely have the knowledge and time to do so during the regular school day, Maryland must invest in a program to train tutors for school-age students who are significantly behind in reading in the primary grades. Minnesota has created such a program for reading and math tutors and a similar program is operating on a limited basis in Maryland.
7. Maryland must make the same kind of investment in the tools needed for high quality formative evaluation of students that the top-performers have been making, as also recommended in Recommendation #1h above, so that regular classroom teachers develop high levels of expertise in the techniques needed to recognize in real time, almost immediately, during a class, which students do not understand or misunderstand the material, and also, the tools and knowledge needed to accurately diagnose the problem and identify a solution with a high probability of working.
8. Maryland must develop policies to give regular classroom teachers the kind of time during the day away from their teaching responsibilities to work with other teachers to pool their observations of students who are experiencing trouble, to come up with solutions to those problems and together monitor student progress to make sure that the solutions are working; Maryland must also develop policies to give its regular classroom teachers much more time to tutor students who need that special attention to get on track and stay on track.

More Resources for At-risk Students

Provide More Resources for At-Risk Students so that Maryland Students Can Achieve the World-Class College and Career Readiness Standards

Resources for Schools

The following table compares the cost of educating the average elementary and secondary school student in the top performing nine countries, the United States as a whole and the states of Maryland and Massachusetts. Massachusetts is shown because it is the only state in the United States that would rank, if it were a country, among the top-performers.

| | |
|--------------------------|---------|
| Top performing countries | \$9,623 |
| United States | 12,152 |
| Massachusetts | 15,544 |
| Maryland | 14,291 |

While the cost to Maryland of educating the average student is 50 percent more than it is in the top performing countries, this does not take into consideration numerous important differences. One is that national and state accounts are not kept in the same way in the United States as they are in most other countries. For example, in most OECD countries, the competitive sports program is paid for by the municipality, not the schools, whereas that is not the case in the United States. In many highly-urbanized countries, most students take public transportation to school that is not paid for by the school district. It is also the case that benefits for school staff are accounted for differently in some countries than in others. And many of the top performing countries spend much more on general support and social, medical, dental, and other services for families with young children than the United States does, none of which is accounted for in their school budgets. In the United States, the schools bear the burden of trying to address the problems that the lack of such support in the United States causes for the schools as they try to educate students who are increasingly entering school far less ready for school than their counterparts in the countries with more generous provisions for families with young children. It is entirely possible that, once these differences in the provision of non-educational services are taken into account, the difference in expenditure could disappear. That conjecture is made more plausible by comparing per pupil expenditures in Massachusetts and Maryland, which are very similar. In this case, the accounting conventions are similar, as are the provision of services to families with young children, so one can assume that these are apples-to-apples comparisons.

Maryland ranks 11th in per pupil spending in the United States, but drops to 19th when adjusted for regional cost differences, even though Maryland's median income is the highest in the nation. The average of spending in the benchmark states of Massachusetts, New Jersey, and New Hampshire is \$2,200 per student more than Maryland, which includes state, local, and federal funds. Maryland does not do well on measures of funding equity. Although Maryland has the highest weight in the country for low-income students in its funding formula, the State spends 4.9 percent *less* money (state and local) on poor school districts than on wealthy ones, making it the state with the 15th most regressive funding system in the nation. By contrast, Massachusetts spends 7.3 percent *more* money on students in low-income districts.

Student Performance

Maryland is spending roughly the same as top performing systems, somewhat less than the benchmark US states, and more on wealthy schools than poor schools. How does that translate to student academic performance?

The performance of Massachusetts' school children is comparable to the performance of students in the top performing countries, which is far superior to the performance of Maryland's students. In the latest Programme of International Student Assessment (PISA) results, if Massachusetts were a country it would have ranked among the very top performing systems in the world in science (6th highest) and in reading (2nd only to Singapore) and 18th in math. This compares to the U.S. rankings of 23rd in reading, 39th in math, and 25th in science. Maryland does not participate in PISA as a country, so there are no comparable data. However, the most recent results from the National Assessment of Educational Progress (NAEP) show that in 2015, Massachusetts led the nation on NAEP in 4th grade reading and math and 8th grade math; on 8th grade reading, it tied for 2nd place with Vermont (both a single point below New Hampshire). Maryland ranked roughly in the middle of states on NAEP (29th in 4th grade math, 26th in 4th grade reading, 25th in 8th grade math) with the exception of 8th grade reading, where Maryland ranked 18th.

While Massachusetts' performance on NAEP is among the best in the country, still only about 50 percent of Massachusetts' students are performing at or above proficiency. Looking at overall performance is important, but the gaps in performance between different subgroups of students are what truly measure the equity of a school system. Here Maryland and Massachusetts' performance is similar, though not positive. To compare one state to another NAEP provides an apples to apples comparison. The 2015 NAEP 8th grade mathematics assessment shows a gap of 32 points between Maryland students who are eligible for the national school lunch program (a measure of poverty) compared to those who aren't. When looking at the race of students there is a gap of 34 points between white and African-American students and 23 points for Hispanic students in Maryland. For all of these subgroups, the gap in Massachusetts is equal to or larger than in Maryland. In all cases Maryland's gap is larger than the national gap. The gaps in 8th grade reading and 4th grade reading and math are slightly less, but still significant. **GAP FOR SPECIAL EDUCATION STUDENTS TO BE ADDED**

Taking a deeper dive into Maryland student performance, Maryland participates in the Partnership for Assessment of Readiness for College and Careers (PARCC) assessments for federally-mandated testing in most grade levels and subjects. The goal is that all, or nearly all, students are proficient. The most recent data from 2017 shows that just under half (49.3 percent) of students taking the English 10 exam received a proficient score (4 or 5) indicating college and career readiness. Further, there are racial and socioeconomic gaps in student performance. For example, while 67.5 percent of white students and 77.5 percent of Asian students were proficient, only 29.0 percent of African American students and 34.3 percent of Hispanic students were proficient. And only about one-quarter of low-income students, English language learners, and special education students were proficient. (It should be noted that when further breaking down the English language learners and students with disabilities to

just those students who did *not exit* these at-risk categories, the performance dropped to 2.7 percent for ELL and 9.7 percent for students with disabilities.) These negative performance gaps have widened since the 2016 administration of PARCC. Similar results are seen in the Algebra I PARCC assessment, with only 36.5 percent of total test takers scoring proficient.

Data from the OECD shows that, in the industrialized countries, there is little correlation between how much is spent on schooling and student achievement. Further, OECD has found that once total spending on a child's education (first through tenth grade) reaches \$50,000, how any additional funding is spent is more important than how much more is spent.

Support for High Need Students

Among the eight states using a single weight in their formula for special education students, as Maryland does, five apply a higher weight than Maryland. At about 12 percent of students statewide, Maryland's special education enrollment is about average for the United States but more than double the special needs identification rates of the top-performers in the world. It is imperative to build an instructional system with an early warning system that identifies students as soon as they begin to fall behind and provides the necessary supports to get them back on track *before* they fall too far behind grade level. This is what the top-performers do. Investing in this strategy should reduce the number of students who are identified as in need of special education services in the future.

All of the international top-performers assign extra teachers to work with high need students. Finland and Singapore assign all schools learning-support teachers who work with small groups of students in classrooms to provide them with extra help to stay on-track in class. Ontario assigns literacy and numeracy support teachers to all schools and additional teachers to secondary schools where there are high numbers of students at-risk of not graduating. These extra teachers work with students under the direction of the classroom teacher with the aim of helping these students succeed in the specific work for that class. This is different than what is typically done in the United States where students are rarely pulled out of class to work with specialists and, even when they are, the schools most often use an "intervention" program that is not necessarily aligned with the classroom curriculum. After school support is most often provided by paraprofessionals, again, with little coordination with classroom work.

In addition to assigning more teachers to at-risk students, many of the top-performers have explicit policies to ensure that these students are taught by the most qualified and/or highest quality teachers. For example, both Singapore and Shanghai assign well regarded teachers and school leaders to help low performing schools and teachers. It is an expectation that many educators on higher levels of Shanghai's career ladder will teach for a time in lower performing or rural schools, either as part of the Empowered Management Schools process that shares school staff collaboratively across high and low performing schools or as part of a temporary rotation into a low performing school full time. It is very hard, if not impossible, for teachers to move up the career ladder in Singapore and Shanghai unless they have taught disadvantaged students. While Finland does not have a specific policy to assign high-quality teachers to high-

need schools, there are financial incentives for teachers to work in rural and high-need schools. In addition, many teachers teach in rural areas initially, as jobs in the cities are more competitive. In effect, this helps to distribute high-quality teachers throughout the country. In addition to these specific policies, all of the top performing jurisdictions have much higher entry standards for the profession, which ensures a higher quality bar for teachers across the system.

RECOMMENDATIONS

The Commission will cost out the policy recommendations made in this preliminary report over the first few months of 2018. Until that work is completed, the Commission cannot make recommendations on the amount of the base funding in the formula or the weights to be applied to that base for at-risk students. The Commission is prepared now to make the following recommendations, which will guide the Commission as it develops its final report:

1. The basic structure of the State's funding formulas as created by the Thornton legislation — uniform base funding with additional weights for specified categories of disadvantaged students based on a calculation of adequate funding — should be preserved and updated.
2. Funding must be distributed according to the needs of students both among school districts — and within school districts — so that students who need additional services and supports are receiving them.
3. Funding must also be distributed equitably, with greater resources going to the less wealthy jurisdictions.
4. For the purpose of costing out the preliminary recommendations, the weight for special education students should be increased. The results from the costing out should be implemented as a place holder until an in-depth study by experts can be conducted and provided to the Governor and legislature, which should include differentiated weights based on the severity of a student's disability.
5. A new weight for schools with high concentrations of students living in poverty should be added. An analysis of what this additional weight should be and whether the weight should be differentiated among levels of high poverty will be conducted and included in the Commission's final report.
6. Wraparound services for at-risk students and their families must be significantly increased so that all students have the opportunity for academic success. These services must include incorporating a service coordinator at each school above a certain poverty level to coordinate services provided by public and private agencies and expanding the community schools strategy. The physical and mental health needs of students and their families must also be addressed as well as the need for

expanded learning time such as after-school and summer programs. To the extent that existing providers cannot meet the needs of students, the concentration of poverty factor in Recommendation #4 should provide the funding to support these services.

7. While ensuring adequate services and supports are provided for high concentrations of students living in poverty is critical, the State and school systems must also consider strategies for the de-concentration of poverty in schools, utilizing research that shows that beyond a certain level, students learn better in socioeconomically diverse schools.
8. Maryland must ensure that high quality teachers are teaching in high needs schools and provide additional learning opportunities for struggling students.
9. Maryland must implement strategies to identify any special needs a student may have as early as possible and address those needs as quickly as possible. As has been demonstrated in high performing systems, this will eventually result in reducing the number of students who are identified as needing special education and enable the State to target special education resources to those with severe cognitive disabilities. By doing what is necessary to improve both the readiness for school of children coming into kindergarten and through targeted support students receive once in school, the scale of the services reserved for special education students in upper grades can be reduced.
10. For students who continue to struggle and are not on track for college and career readiness despite early intervention, more intensive support must be provided, including one-on-one tutoring and additional instructional supports, including expanded learning time such as an extended school day and/or school year.
11. Currently the funding that *school systems* receive for at-risk students is based on their need for additional resources to be successful and have an opportunity to meet State standards. Targeted funds should follow at-risk students to allow for the allocation of additional teachers and other resources to schools and students using the results from an early warning system that identifies students who are not on track. The Commission recognizes that schools systems need some flexibility in allocating funds to schools to reflect local strategies, initiatives, and school system needs. Required school-level expenditure reporting by federal law beginning in 2019 will, at a minimum, provide more transparency in how school systems are allocating funds to schools within their system. This data will allow for analysis of school-level spending patterns between and among school systems. The Commission will continue to explore this issue and make specific recommendations in its final report.

12. The State must ensure that students have access to other professionals in school that provide assistance with a student's social and emotional well-being (e.g., school counselors, school psychologists) and that these professionals receive professional development in order to stay abreast of current behavioral and other intervention strategies. This staffing should be informed by appropriate staffing standards and phased-in throughout the implementation period as determined in the final report with higher poverty schools receiving these additional resources first.
13. The State should study the possibility of adopting social and emotional learning standards and cultural competency standards to give students the non-academic skills needed to be college and career ready.

Governance and Accountability

Institute a Governance System to Develop Powerful Policies and Implement Them at Scale

Clear, Internationally Benchmarked Goals, Which are Coupled to Coherent, Aligned Policies, Enacted through a Close Coupling between Policy and Practice

All the top performing countries have ministries of education either at the state or national level. These ministries have no analogue to any unit of government in the United States. They are generally responsible for education at all levels, prekindergarten, elementary and secondary education, and higher education. In most cases, these ministries sit at the top of a civil service structure for education that starts with classroom teachers and support personnel and moves up in a hierarchy to the top civil servant in the ministry. Master teachers and principals are paid about the same. They report to district and regional officials, who are paid more, who in turn report to the central ministry staff, who are paid more, and they report to the permanent secretary, who is the highest paid professional educator in the system. The ministry officials are widely regarded as the nation's leading experts on education matters. The ministries are typically assigned many functions that in the United States are assigned to separate bodies, such as licensing and standard-setting bodies. In most of these countries, policy direction for education is provided in a parliamentary system led by a minister who is a member of the majority in Parliament and can, therefore, be assured of the backing of the prime minister and the legislature.

Increasingly, the ministries of education have high-level units whose only job is to benchmark the standards, policies, and practices of the other top performing nations, especially the changes the top-performers are making to cope with the rapid changes in technology that are in turn creating major challenges in the nature of jobs and the economy. Most of these countries have well-worked-out systems to take this kind of intelligence and use it to plan big changes in the direction of national education policy. These plans usually involve widespread involvement of the public and education professionals in their preparation and the plans usually also include detailed implementation strategies. Indeed, it is usually the case that as much effort goes into the preparation for implementation as goes into the development of the plan itself. Because the system is an integrated, hierarchical civil service system, program planning is tightly coupled to implementation planning and implementation planning is tightly coupled to actual implementation. Because leadership for these changes in direction is provided by the party in power, the changes being planned and carried out by the civil service have the backing of the whole political structure.

None of this is true in Maryland, nor in any state in the US. PreK through 12 spending and accountability are highly decentralized. School superintendents do not report to state department of education officials. The Chief State School Officer (i.e., State Superintendent) is not the highest paid professional educator nor is there a reporting line that goes from master teacher and principal up through the hierarchy to the Chief State School Officer. Responsibility for running the higher education system and the preK to 12 system is widely distributed. In the US, policies and practices of the world's leading systems are not routinely benchmarked. Many different bodies have independent authority for specific parts of the education system and not infrequently work at cross purposes with one another. The system for governing education in Maryland, like the system throughout the United States, can best be described as highly

fractionated. In practice, only Massachusetts among US states, at a particular point in time, was able to create a coalition that bridges this kind of fractionation to create and implement a highly coherent major change in policy and practice. That fleeting effort to overcome a weak governance structure was then followed, years later, by changes in the structure made by a determined governor, changes that unified previously entirely separate governing structures under one roof. This structure remains in place today.

The question for Maryland is how it can move to an education system that gets results comparable to those achieved by the top-performers with the highly decentralized governance system it has. That will require the State to find a way to get the same kind of coherence and power from its system as policy is made and implemented without transforming its governance structure to do it. An innovative approach to education governance will have to be found to accomplish this task.

Bridge to Excellence Master Plans

All of these issues came to the fore in 2002, when the legislature passed the Bridge to Excellence in Public Schools Act, translating the Thornton Commission recommendations into law. Then, as now, the core challenge was finding a way to connect school finance to a broad education reform program that would enable the students in the State to reach very ambitious new performance targets.

The new school finance formulas created by the Act were used to calculate how State education aid would be distributed to Maryland school districts. After that, it was up to the districts to decide how to use the money. School systems were required to submit “Master Plans”, essentially five-year strategic plans that described how the additional education aid would be spent to improve student achievement. The State Superintendent was given authority to review and approve the master plans, require revisions to plans, and to withhold State aid if the plan was unsatisfactory or if sufficient progress in improving student achievement was not being made.

In theory, then, Thornton included a system for holding school districts accountable for the way they used the considerably increased funds they would be getting. This was a crucial feature of the Thornton plan, especially in light of the OECD finding, referred to previously, that above a total of US\$50,000 spent on a student’s education from the first grade through the end of grade 10, there is very little correlation between how much money is spent and increases in student performance across systems. In other words, above a certain funding level, *how* the money is spent is at least as important as how much is spent. If that is true, then Maryland must find a way to hold the schools and districts accountable for spending the money in a way that is highly likely to produce the expected result in student performance.

Master plans were reviewed by the State, but MGT of America found in a 2008 State-mandated report entitled, *An Evaluation of the Effect of the Increased State Aid to Local School Systems Through the Bridge to Excellence Act*, that while there were modest student gains over the

2003–2008 phase-in of the Act, most districts and schools were not implementing changes in policy and practice for which there is clear evidence of effectiveness. Further, MGT found that the accounting systems used by districts did not track how the additional aid was spent. Thus, while the master plan approach was innovative at the time, and in theory held school systems accountable for the use of education aid, it did not work as had been intended. Such a system will only work if there are published criteria for review that are related to what research tells us about what will work, and the entity charged with reviewing and approving the plans and their implementation has the capacity and the authority to tie resource allocations to successful implementation of the plans. Up to the present, MSDE has only had the capacity to review master plans primarily for compliance with the specific statutory requirements of the Bridge to Excellence Act and the Every Student Succeeds Act (previously No Child Left Behind and other federal statutes).

As noted previously, the top performing countries are getting substantially better results at a cost no greater than Maryland's current cost. They are able to do this not only because they have more effective interventions, but because they have a different *system* of education. "System" does not refer simply to the arrangement of schools, districts, and central national or state agencies nor does it refer to an organization chart of the system or any part of it. It means the contents of each of the 9 Building Blocks and the way those building blocks are connected to each other in a way that, in the top performing countries, leads to the operation of the whole in which each part and element of the whole system supports all the others in a harmonious and mutually reinforcing way. In such systems, the policies are designed to provide positive incentives to all the actors to work hard to achieve what the public wants for students and also provides the capacity in the schools and elsewhere needed to achieve those goals. That is what is meant by system. One of the most important findings from international comparative research on education is that it is difficult if not impossible to get consistently high student performance without a design for governing education that has the capacity and authority needed to create and maintain such a system.

RECOMMENDATIONS

1. The Commission believes there must be a strong system of accountability in the implementation of its recommendations. In particular, a meaningful portion of new funding must be subject to the approval of specific plans to implement the Commission's recommendations and must be subject to demonstrated progress towards greater student success. The Commission's final report will further address this issue as well as the appropriate entity or entities to monitor implementation of the Commission's recommendations.
2. Maryland should become part of the network of nations, states, provinces, schools, and districts in the OECD PISA survey, so that it can compare itself to over 100 leading education systems around the world on both the achievement of its students and the strategies that governments at every level are using to get high achievement and high equity.

3. At the end of the implementation period of the Commission's recommendations, an evaluation of whether the Commission's goals have been achieved and their effectiveness should be required.