Commission on Innovation and Excellence in Education

William E. Kirwan, Chair

Agenda

Session 1 and Session 2

November 30, 2017
9:30 a.m.-5:00 p.m.
120 House Office Building, Annapolis, Maryland

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

9:40 a.m. Maryland's Fiscal Outlook

- David Romans, Department of Legislative Services

10:00 a.m. Building Block 6 – Review Revised Draft Recommendations and Discuss/Finalize

11:15 a.m. Building Block 8 – Review Draft Recommendations and Discuss/Finalize

12:00 p.m. Lunch

Lunch Provided for Commissioners and Staff in Room 180

12:45 p.m. Building Blocks 3, 4, and 7 – Review Draft Recommendations and Discuss/Finalize

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

Next Meeting: Monday, December 11, 2017, 9:30 a.m.-5 p.m.

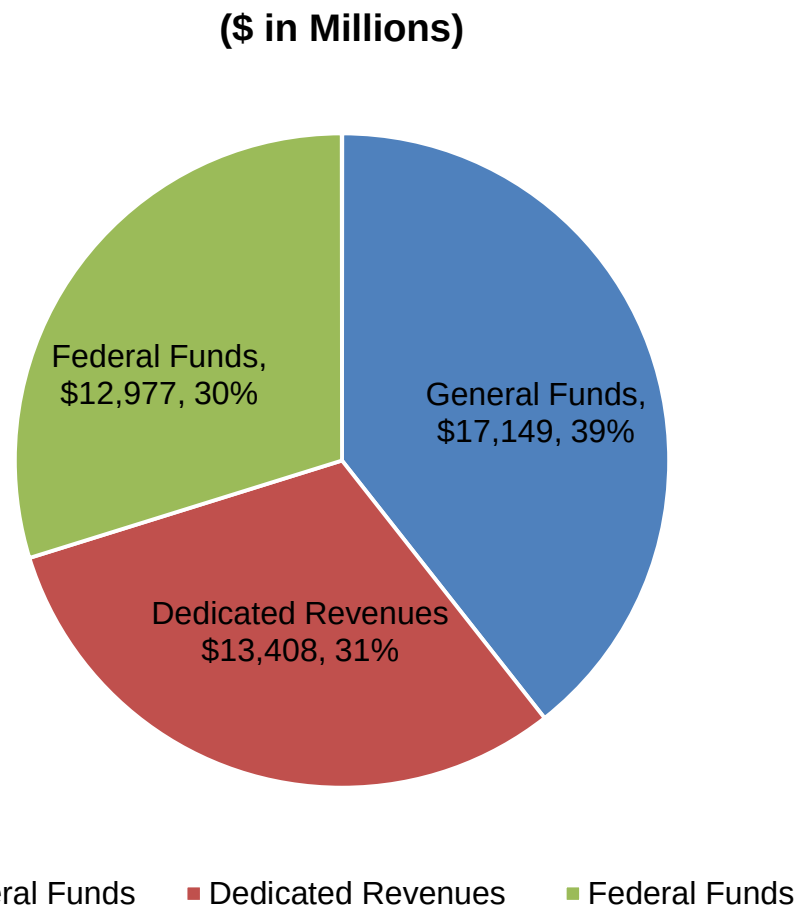
Maryland's Fiscal Outlook

Presentation to the
Commission on Innovation and Excellence in Education

Department of Legislative Services
Office of Policy Analysis
Annapolis, Maryland

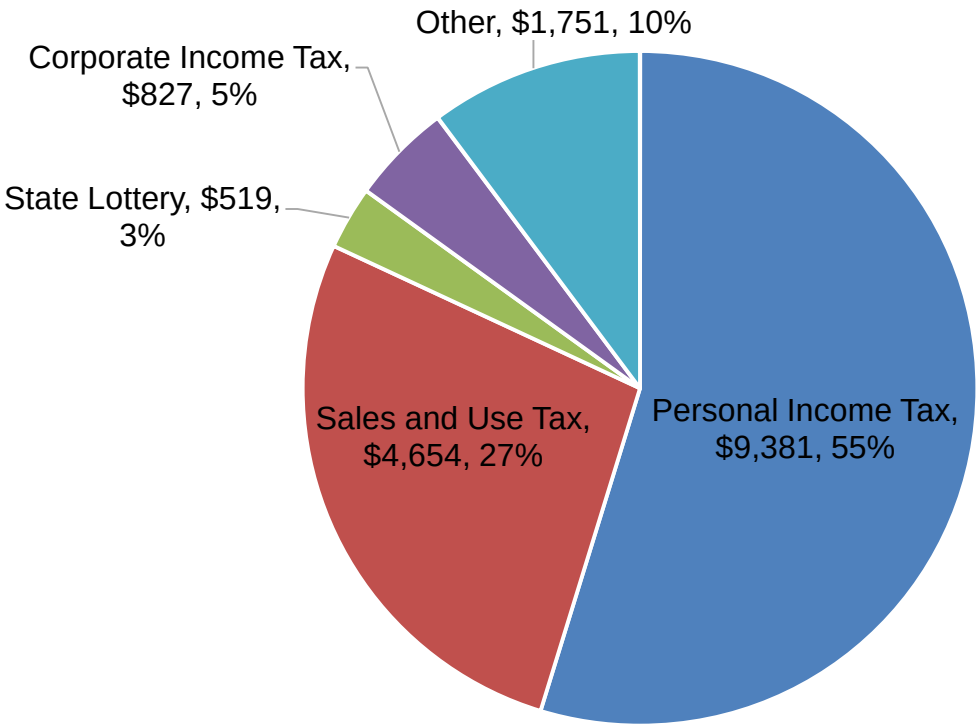
November 30, 2017

Fiscal 2018 State Budget = $43.5 Billion

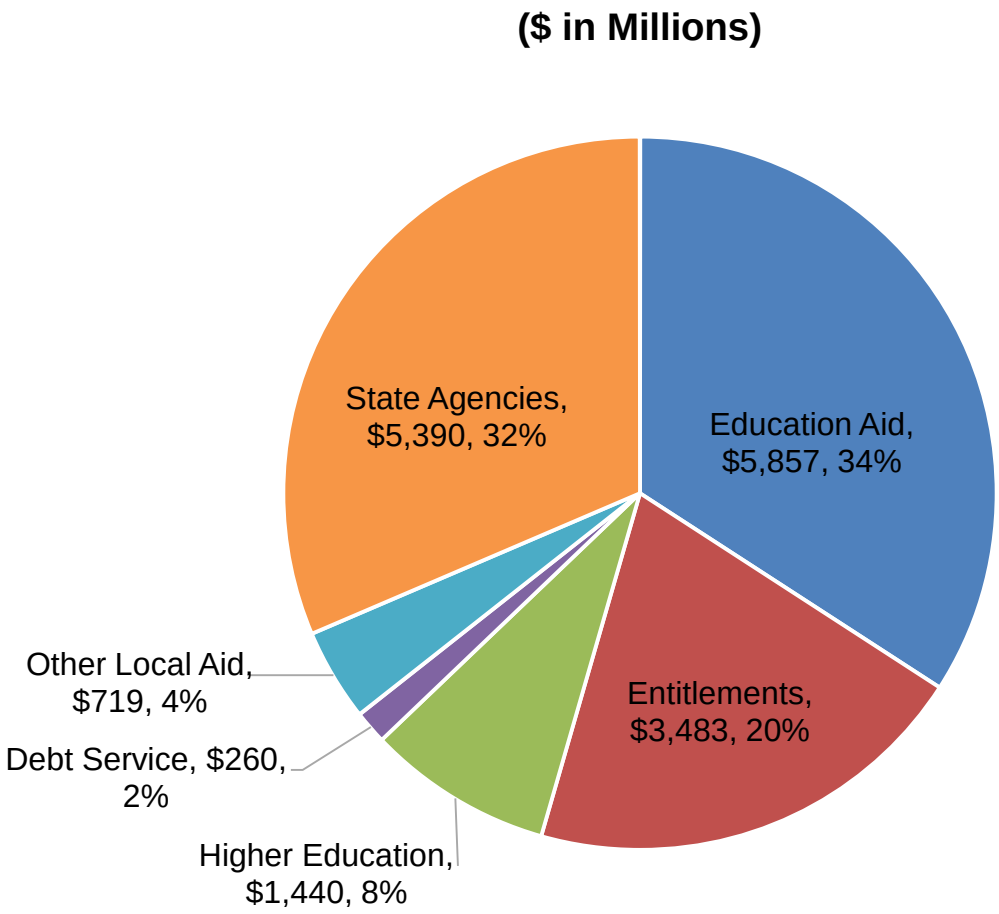


Fiscal 2018 General Fund Revenues

($ in Millions)



Fiscal 2018 General Fund Budget = $17.1 Billion



Fiscal 2019 Baseline Budget Forecast Assumptions

Baseline Budget Concepts

- The baseline budget is an estimate of the cost of government services in the next budget year based on a set of assumptions.
- Assumptions include that current laws, policies, and practices are continued; federal mandates and multi-year commitments are observed; legislation adopted at the prior session is funded; and full-year costs of programs, rate increases, and any other enhancements started during the previous year are included.
- Employee compensation costs include:
  - a general salary increase of 1.0% effective July 2018, and funding for employee increments;
  - employee and retiree health insurance savings as a result of high fiscal 2017 ending fund balances and a new pharmacy contract inflation (-5.7%); and
  - employee retirement costs (0.3%).
- The higher education grant is calculated assuming a 3.0% tuition increase.

Caseload Assumptions

	FY 2017	FY 2018	FY 2019	% Change FY 2018-2019
Pupil Enrollment*	845,861	852,520	857,885	0.6%
Medicaid	895,389	920,251	938,880	2.0%
Children's Health	144,294	147,180	150,123	2.0%
Expansion under Affordable Care Act	290,718	313,976	329,674	5.0%
Temporary Cash Assistance	50,901	46,699	44,298	-5.1%

* Data for fiscal 2017, 2018, and 2019 reflect September 2015, September 2016, and September 2017 (est.) full-time equivalent enrollments.

General Fund: Recent History and Outlook Fiscal 2017-2019

($ in Millions)

	2017 Actual	2018 Working	2019 Baseline
Funds Available			
Ongoing Revenues	$16,664	$17,139	$17,639
Balances and Transfers	630	259	303
Short-term Revenues	66	15	0
Total Funds Available	**$17,361**	**$17,413**	**$17,942**
Appropriations, Deficiencies, and Cost Containment			
Net Ongoing Operating Costs and Deficiencies	$16,934	$17,394	$17,980
One-time Spending/Reductions	-49	-112	-61
Pay-as-you-go Capital	62	10	78
Appropriations to Reserve Fund	155	10	196
Total Spending	**$17,102**	**$17,302**	**$18,193**
Cash Balance/Shortfall	**$259**	**$111**	**-$251**
Structural			
Balance (Ongoing Revenues Less Operating Costs)	**-$269**	**-$255**	**-$340**
Ratio (Ongoing Revenues/Operating Costs)	**98.4%**	**98.5%**	**98.1%**
Estimated Rainy Day Fund Balance – June 30	**$832**	**$858**	**$882**

Drivers of General Fund Operating Budget Growth

Fiscal 2019

($ in Millions)

Medicaid	$206
Education/Library Aid	178
State Employee COLA and Merit Pay Increases	123
State Agency Expenses/Other	105
Local Aid	24
Total Operating Spending Growth	**$635**
Ongoing General Fund Revenue Growth	**$500**

Maryland Revenue Forecast

($ in Millions)

Source	FY 2017 Actual	FY 2018 Estimate	% Change over FY 2017	FY 2019 Estimate	% Change over FY 2018
Personal Income Tax	$9,019.3	$9,380.7	4.0%	$9,764.9	4.1%
Sales and Use Tax	4,539.3	4,654.9	2.5%	4,787.4	2.8%
State Lottery	484.3	519.5	7.3%	522.8	0.6%
Corporate Income Tax	795.6	827.3	4.0%	873.5	5.6%
Business Franchise Taxes	228.4	232.2	1.6%	198.1	-14.7%
Insurance Premiums Tax	328.7	326.3	-0.7%	350.0	7.2%
Estate and Inheritance Taxes	227.9	198.5	-12.9%	184.1	-7.3%
Tobacco Tax	387.0	381.6	-1.4%	378.3	-0.8%
Alcohol Beverages Tax	32.5	32.9	1.2%	33.3	1.3%
Other [1]	545.4	516.8	-5.2%	521.5	0.9%
Subtotal	***$16,588.5***	***$17,070.7***	***2.9%***	***$17,613.9***	***3.2%***
Transfer Tax	$62.8	$46.0	-26.7%	$0.0	n/a
GAAP Transfer	47.4	0.0	n/a	0.0	n/a
Extraordinary Revenues [2]	0.0	15.0	n/a	0.0	n/a
Total General Fund Revenues	**$16,698.7**	**$17,131.7**	**2.6%**	**$17,613.9**	**2.8%**
Education Trust Fund	**$451.2**	**$487.1**	**7.9%**	**$507.9**	**4.3%**
Grand Total	**$17,149.9**	**$17,618.7**	**2.7%**	**$18,121.8**	**2.9%**

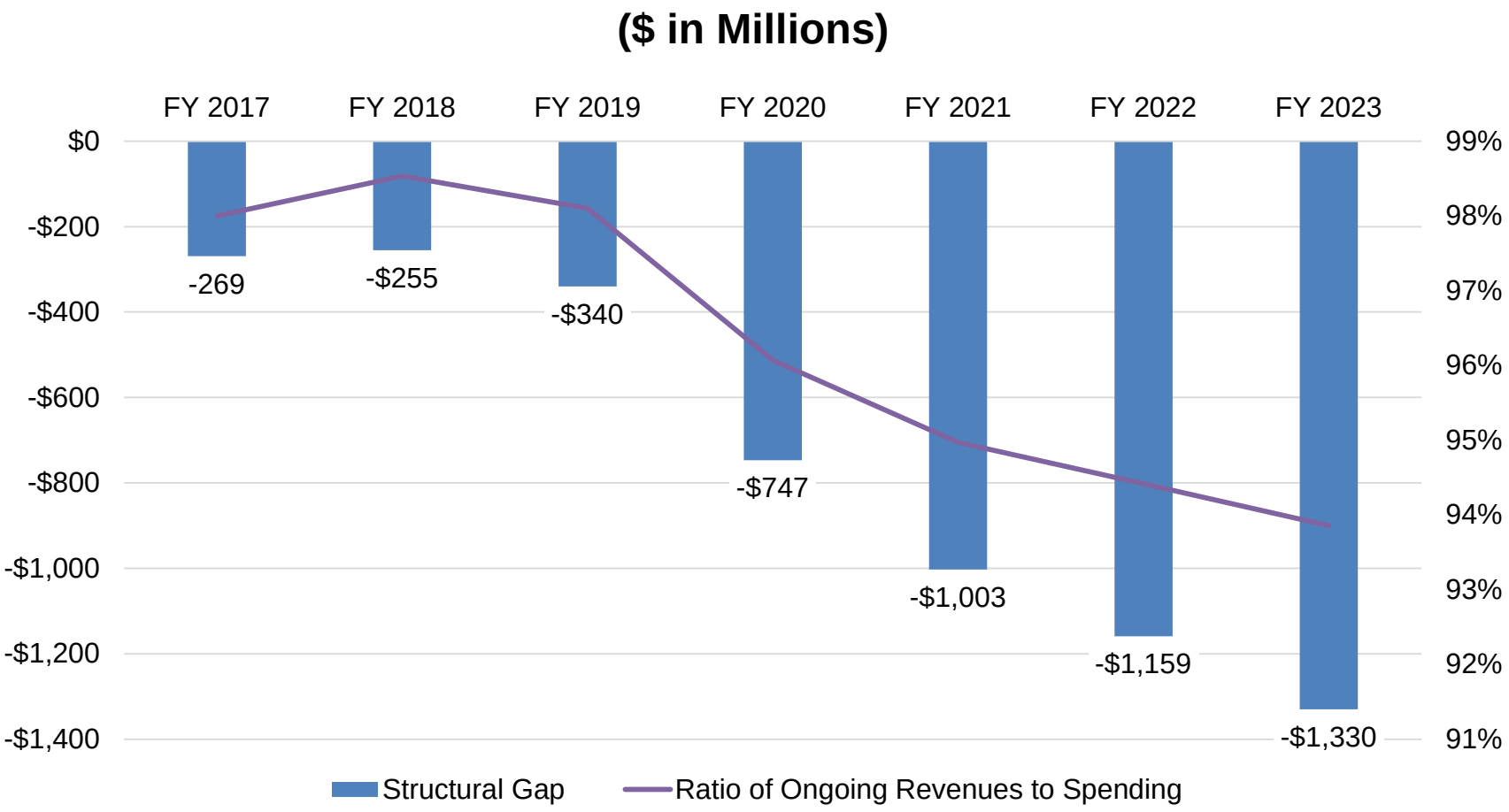
GAAP: generally accepted accounting principals

[1]Includes revenues from the courts, hospital patient recoveries, interest earnings, and other miscellaneous revenues.

[2]The Budget Reconciliation and Financing Act of 2017 (Chapter 23) distributed casino revenues that would normally go to the Small, Minority, and Women-owned Businesses Account to the general fund in fiscal 2018 and to the Education Trust Fund in fiscal 2019.

Source: Board of Revenue Estimates

Structural Budget Gap Forecast to Grow



General Fund Spending Growth by Component

($ in Millions)

	FY 2019 Forecast	FY 2023 Forecast	$ Growth	Avg. Annual % Change
Ongoing Revenues	$17,639	$20,316	$2,677	3.6%
Ongoing Spending	17,980	21,646	3,666	4.7%
Structural Gap	**-$341**	**-$1,330**	**-$989**	
Spending Detail				
Mandates/Entitlements				
Education Aid	$6,032	$6,936	$904	3.6%
Entitlements	3,775	5,044	1,269	7.5%
Employee Retirement	438	542	104	5.5%
Debt Service	221	537	316	24.9%
Other Mandates	907	1,138	231	5.8%
Total	**$11,373**	**$14,197**	**$2,824**	**5.7%**
State Agencies & Higher Education	$6,607	$7,449	$842	3.0%

Building Block #6: 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

SUMMARY OF GAP ANALYSIS AND RECOMMENDATIONS

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% in Massachusetts, 46% in New Hampshire, and 42% in New Jersey. The average of all teachers' salaries in Maryland is $66,482. This also lagged behind other professions by up to 40% in 2015. This compares to up to 16% in Massachusetts, 31% in New Hampshire, and 26% in New Jersey.

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 and 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.

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, and that system has been implemented in only a few school districts. The National Board for Professional Teaching Standards and the National Center for Education and the Economy are exploring developing a national framework for a career ladder that would be piloted in select states.

RECOMMENDATIONS

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 (LEAs, MSDE, collective bargaining units, school boards, etc.)
    b. Once established, all new K-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 number of ladder steps, the title and the broad criteria for placement on each ladder step and 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: a "Master Teacher" track that allows highly effective teachers to stay in the classroom with appropriate compensation and an administrative track that gives teachers the chance to become assistant principals and principals after they have demonstrated the capacity to be successful teachers.
    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.

2. Once a career ladder is fully developed and implemented, increases in compensation for Maryland teachers must be tied in significant measure to their position and advancement on the career ladder. 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. The career ladder should be designed to complement and facilitate the implementation of the high performance work organization in the schools (see #4 below)

3. Once the Commission's recommendations are fully implemented, the gap in compensation between teachers and high-status professions requiring comparable levels of education, such as nurses, certified public accountants and architects should be significantly reduced if not completely eliminated, and eliminated in due course

    a. The closing of the gap 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
    b. In the interim, Maryland needs to systematically phase-in salary increases for teachers over the next 4 or 5 years. Teacher compensation in Maryland is below the average salaries in two of the three states used by the Commission in its benchmarking work. During the phase-in period and while Maryland is phasing in 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. Current salary levels combined with working conditions are having a negative impact on recruitment and retention of teachers. In particular, perilously few Maryland students are opting to pursue teaching careers. Between 2005 and 2015, roughly 60% of the newly hired teachers are from out of state. Moreover, during the same time frame, roughly one-third of the teachers that Maryland public and private universities do produce are not hired by Maryland public schools. This either means they do not stay in the State as they launch their careers or they begin their careers teaching in a private school. Further, roughly half of the teachers produced by a Maryland *public* four–year institution do not teach in a Maryland public school. In fact, roughly 30% of these graduates either aren't employed as a teacher, aren't working at all, or work out of state. The remaining 20% are employed by a Maryland private school.
    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, county by county, to determine prevailing rates of beginning and average compensation in the high status professions to provide benchmark salaries in order to achieve Recommendation 3a.

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 typical 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.

RECOMMENDATIONS

4. 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

    a. 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. The magnitude of the reduction in teachers' class time and the cost of implementation requires further study by the Commission in the coming months and will require difficult choices, balancing the magnitude of new funding available to reduce classroom time and increase teacher compensation against class sizes, school facility space issues, and the capacity to repurpose current spending patterns. This study should include a cost analysis of phasing in reduced teaching time first for new teachers, followed by all new teachers, then all teachers, prioritizing schools serving high concentrations of students living in poverty at each phase. A cost analysis of adopting a statewide students-to-teacher ratio standard—with smaller ratios for schools in areas of concentrated poverty—should also be conducted that would allow for teacher collaboration time without jeopardizing individualized instruction. Such an analysis should show cost estimates for benchmarking against the ratios in the Commission's three benchmark states: Massachusetts, New Jersey, and New Hampshire.

b. In order to effectively use this additional collaborative time, teachers should receive training on 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.

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 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 Masters degrees, 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

5. 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. The IHE–LEA collaboratives recommended in BB #5 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.

6. 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. Seed funds should be committed for collaborative partnerships between universities and LEAs 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.

Building Block: #8: Create a leadership development system that enables school leaders to create and manage high performance schools effectively

GAP ANALYSIS

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.

Building Block #8: Create a leadership development system that enables school leaders to create and manage high performance schools effectively

RECOMMENDATIONS

1. Maryland should establish a set of aligned policies to bring the initial education and training of new school leaders, including principals and district administrators, 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. Among these policies should be the following:
   a. Require the state to include a career ladder system for school leaders in the career ladder system it creates for teachers, described in Building Block #6. A series of steps for school and district leaders, which should be built on top of the fully–proficient step for teachers in the career ladder structure, thus assuring that all 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 also require that individuals who wish to ascend the career ladder for school leaders spend significant time serving and demonstrating success in leadership positions at schools with large proportions of low-performing schools or at schools with large achievement gaps between subgroups of students. 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. Require the state to 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.
   c. Require the universities wishing to offer graduate level courses in school administration for certification to 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; and 3) their curriculum will

give the students in these program the knowledge and skills needed to successfully implement the recommendations made in this report

d. The university-school district collaboratives described in Building Block #5 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 teachers 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, skill, 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.

ISSUES TO BE RESOLVED WITH RESPECT TO LEADERSHIP CAREER LADDERS:

1. Should the career ladder for school leaders be a branch of the ladder for school teachers? This would mean that the only way to become a school principal would to first be certified as a highly proficient teacher, which is what the top performing countries do.

2. Assuming there is a statewide framework for a leadership ladder system, which of the following should be decided at the state level and which at the district level: Number and names of steps on the ladder? Criteria for advancing up the ladder? The roles in the schools and system that a person at each step of the ladder will have (assuming that teacher's compensation will be negotiated locally)?

3. Assuming the career ladder for teachers encompasses teacher leaders (defined as teachers who lead teacher instructional teams, mentor newer teachers, lead teacher research efforts, or chair subject matter or grade level teams), should "school leaders" include anyone that plays other leadership roles in the schools such as assistant principals, principals and principals responsible for other principals?

4. Should Maryland expand the Promising Principal Academy beyond 48 candidates per year or should Maryland, before making this decision, compare that strategy with other strategies for developing school leaders capable of implementing the Commission's program on both cost and quality?

Building Blocks #3, #4 and #7: Building a curriculum and instructional system that will get all but the most severly disabled Maryland students to world-class standards for college and career readiness.

GAP ANALYSIS

A System that Prepares Students for College and Careers

The top-performing countries typically use state-wide or nation-wide 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 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 US.

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 US has built a real system that encompasses all of these attributes.

Career and Technical Education

Unfortunately, career and technical education 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 US that follow an academically rigorous career and technical education model, including 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.

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 (JFF), in collaboration with the Harvard Graduate School of Education (HGSE) 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 9 state members: AZ, CA, DE, GA, IL, MA, MO, NY, and TN.

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 CA, IL, MI, NY, OH, TX, and WI. 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.

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 US is nearly unique in having a lot poor and minority students, the US is actually about in the middle of the distribution of all the PISA countries. About 17% of the US population lives below the national poverty line, which is roughly the same as Shanghai, Japan, and Germany. Hong Kong (20%) and Singapore (26%) have more poverty than the US; all of these countries score much higher than the US on PISA. In terms of the percent of students who are immigrants, the US is roughly in the middle at 23% and Singapore is similar at 21%; Hong Kong (35%), Canada (30%), and New Zealand (27%) all have higher rates of first and second generation immigrant students, and again, score higher than the US 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 evaluations 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.

Building on Maryland's Assets

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

Maryland was among the first states to develop the Maryland College and Career Ready standards built on the Common Core State Standards and measured by the PARCC tests that are aligned with the Common Core. At present, students are expected to reach that standard by the end of their junior year. It is also the case that Maryland has a different standard that all students are required to reach, and a defined set of state 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 nearly all 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.

Maryland was one of the first states to implement a school readiness model for entering kindergarteners in the early 2000s. Every entering kindergartener was assessed using the model. The model was recently replaced with the Kindergarten Readiness Assessment (KRA), which is aligned with Maryland's College and Career Ready standards. Presently, the KRA is given only to a sample of entering kindergarteners unless the school and teachers agree that all kindergarteners will be assessed. This will be discussed further under Building Block #1.

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.

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.

Perhaps the greatest challenge for Maryland and other US 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% 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%, 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 U.S.) 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

A SYSTEM THAT PREPARES STUDENTS FOR COLLEGE AND CAREERS

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 year at which nearly all students are expected to acquire levels of mathematics and English literacy needed for success 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. Setting a date certain (e.g., ten years after the enabling legislation is passed) by which all but the most severely disabled students will be expected to meet this standard and schools will be held fully accountable for their success in helping students reach this standard

    c. Requiring all Maryland high schools, by a date certain, to offer rigorous pathways toward college and careers for students who are on track for college and career readiness by the end of 10th grade, including a high school upper division program consisting of the IB Diploma Program, the AP Diploma program, University of Cambridge Diploma Program or a program of similar academic rigor; a program consisting of all the courses 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

d. 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)

e. 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 end-of-course exams in the event that PARCC is no longer available

f. Incorporating science 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

g. 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

h. Requiring all community colleges to enroll students that achieve the 10th grade standard in credit–bearing coursework without remediation

i. Setting a standard that students enrolling in 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

j. Constructing curriculum frameworks for all required subjects not already completed, and using the curriculum frameworks to write sample course syllabi for each required subject in each required content area

k. Writing sample essay-based examinations matched to each syllabus, to the extent required

l. Collecting examples of student work 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

CAREER AND TECHNICAL EDUCATION SYSTEM

2. While building on the progress that Maryland has made in this arena, the state must work hard to match the achievements of those countries that are in the lead in this arena by:

a. Creating an advisory group of leading Maryland employers, state economic development officials, relevant experts and Maryland educators at both the elementary and secondary and higher education levels to 1) advise the MSDE on its career and technical education programs, 2) benchmark the best such systems in the world, including Singapore and Switzerland, and, on the basis of that benchmarking, 3) analyze the requirements of a Maryland economy that could provide broadly shared prosperity to the state and deriving from that economic vision the kinds of skills the Maryland workforce would need to fulfill that vision, 4) evaluate Maryland's existing CTE program based on what is learned from the best systems and the needs of Maryland employers, and 5) 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
b. Developing the skill standards—including those for 'soft' skills— students will need to meet in the future that should be driving today's career and technical education programs
c. Fully engaging employers in the design and provision of the workplace-based programs needed to equip students with both the theoretical and practical skills needed to pursue rewarding careers in the future
d. Collaborating with the State's community colleges to design a system in which very 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
e. 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

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 (see Building Block #1 for more details)

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, including double periods of basic math and English literacy, before and after school tutoring, etc.

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. This should include, but not be limited to, instruction in Reading Recovery and Response to Intervention. The ability to identify the differing needs of struggling learners and the skill to design appropriate intervention startegies should be built into the teacher preparation programs in all schools of education across the state

6. Until such time as 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, 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 and 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 that teachers in the top performing countries have 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 (see Building Block #6 for details)