



The New Blueprint for the Future of Public Education

"Re-defining Virginia's Framework for Public Education"

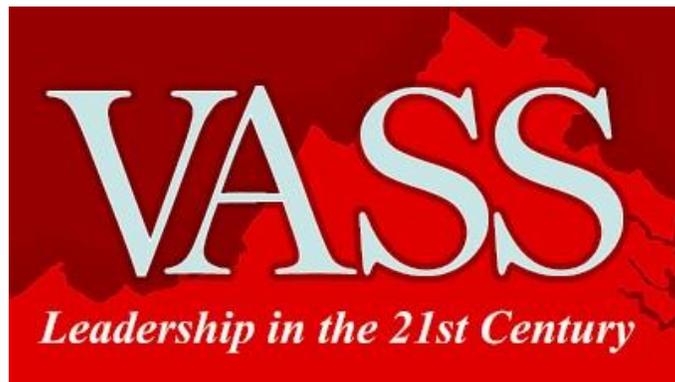


VASS

Leadership in the 21st Century

ADOPTED NOVEMBER 20, 2014

VIRGINIA ASSOCIATION OF SCHOOL SUPERINTENDENTS



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TABLE OF CONTENTS

Mission, Officers, Board, Legislative Committee, Staff	3
Blueprint Focus Area Committees	4
Blueprint Review Committee, Contributing Authors	5
Executive Summary	6
Goal 1: Curriculum/ Readiness	9
Goal, Objectives, Strategies	
Rationale	
Goal 2: Assessment	11
Goal, Objectives, Strategies	
Rationale	
Goal 3: Accountability	13
Goal, Objectives, Strategies	
Rationale	
Goal 4: Instructional Delivery	16
Goal, Objectives, Strategies	
Rationale	
Goal 5: Human Capital.....	18
Goal, Objectives, Strategies	
Rationale	
Goal 6: Funding Public Education	20
Goal, Objectives, Strategies	
Rationale	
Appendix A: Glossary	31
Appendix B: Research & Resources	40

Mission

The Virginia Association of School Superintendents (VASS) is a professional organization dedicated to the mission of providing leadership and advocacy for public school education throughout the Commonwealth of Virginia.

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The members of the Virginia Association of School Superintendents wish to thank:

James H. McMillan, Professor, Virginia Commonwealth University, for writing the rationales, research and resources for Curriculum/Readiness, Assessment, Accountability, Instructional Delivery, and Human Capital

James J. Regimbal, Jr., Principal, Fiscal Analytics, Ltd., for writing the rationale for Funding Public Education

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Executive Summary

Nothing demonstrated the interconnectedness of the world or the change in the knowledge and skill demand for employment than the recent global recession. The incongruence of today's economic realities and the knowledge, skills, and measures currently required by public schools to prepare students for their futures has precipitated new efforts to reform public education nationally as well as in Virginia. Assumptions of what students should know and be able to do, how their acquisition of knowledge and skills should be measured, and how educators should be held accountable for student learning are being analyzed as educators continue to prepare students for the shifting demands of business and higher education in an ever-changing global environment. In addition, the recent national backlash resulting from the overuse of high-stakes standardized tests for accountability purposes, has caused educators and policymakers to rethink current accountability systems and consider alternative measures of student progress and educator performance.

The *New Blueprint* represents the response of the members of the Virginia Association of School Superintendents (VASS) to these changing circumstances. It was produced after months of evaluation, discussion and consensus-building by all of Virginia's school division leaders concerning what makes the most sense in educating and preparing the Commonwealth's students for their futures.

The resulting document provides an outline of goals, objectives and strategies in six main interdependent areas, which create a map for the improvement of public education in Virginia. The prescriptions in these six focus areas work together to ensure that Virginia's public schools function more effectively and efficiently to provide the high quality of education necessary to meet the demands of our changing world. The goals and objectives in the six focus areas can be summarized in a series of belief statements:

Curriculum/Readiness

The members of the Virginia Association of School Superintendents believe that the Commonwealth's public school students must be successfully prepared for citizenship, enrollment in post-secondary education and training, employment, and/or enlistment when they graduate from high school. We further believe that in order for them to be prepared:

1. State curriculum standards should be developed that define in-depth understanding, cognitive strategies, and learning skills to apply what is learned.
2. Revisions in the state curriculum should be aligned with research-based instruction and performance assessments that both develop in-depth understanding and cognitive skills, and show how students apply knowledge and skills.
3. Incentives for local school divisions should be provided to: a) identify alternative ways for students to accrue standard credits outside of the traditional seat-time requirements and b) to identify additional opportunities to earn verified credits beyond passing end-of-course Standards of Learning (SOL) tests or State Board of Education-approved substitute tests.
4. Variability in learning time, assessments, and modes of instruction should be provided to take into account students' learning differences so that they can become proficient in the acquisition and demonstration of the knowledge and skills identified by the curriculum standards.
5. Initiatives should be planned, developed, and assessed to address essential literacy and numeracy skills.
6. Pre-K learning experiences should be expanded for all children.

Assessment

The members of the Virginia Association of School Superintendents believe that school divisions should use a variety of assessments to document and enhance student growth and achievement and to ensure that students are given sufficient opportunities to demonstrate their acquisition of required knowledge and skills. To accomplish this:

1. School divisions must be given the flexibility to measure student progress and achievement throughout the year using a variety of assessments to both document and improve student learning.
2. Flexibility in the scheduling of assessments must be created to accommodate the different learning rates of students so that they not only become proficient in acquiring required knowledge and skills, but also accelerate their learning to acquire additional knowledge, more in-depth knowledge, and enhanced skills.

Accountability

The members of the Virginia Association of School Superintendents believe that a balanced, comprehensive and fair system of accountability needs to be developed to improve postsecondary and career readiness. To do this:

1. Accountability system must be based upon multiple, varied measures of representative student performance.
2. Individual student growth and status measures must be used to evaluate schools and teachers.
3. A variety of meaningful, easy-to-understand measures must be used to hold educators accountable in addition to test scores.
4. Additional opportunities must be provided for students to meet both the standard credits and verified credits required for graduation.

Instructional Delivery

The members of the Virginia Association of School Superintendents believe that Virginia's students will benefit from instructional delivery models that are supported by evidence-based research, that are personalized to accommodate diverse learners, and sufficiently broad to maximize students' learning styles. To this end, we believe that:

1. Effective and flexible learning schedules should be designed to enhance student and teacher performance as well as to improve the use of time throughout the year.
2. Multiple paths of learning in classroom instruction for all students should be supported to acquire reading and math skills based on students' readiness, interest, learning styles, and other characteristics. Formative assessments should be used to assist teachers in differentiating instruction and implementing tiered interventions for students throughout the school year based on the students' different paths of learning.
3. Virtual and blended learning opportunities should be provided for all students to enhance personalized learning.
4. High-quality professional development for teachers and school leaders should be provided in order to expand their knowledge and practice of classroom instructional strategies that have been tested and have demonstrated success.
5. Adequate state funding and support for research-based mentoring models should be provided for all teachers during their probationary terms.
6. Pre-K learning experiences should be expanded for all children.

Human Capital

The members of the Virginia Association of School Superintendents believe that Virginia's human capital must be improved for the provision of high-quality globally-competitive public education. In order for this to occur the following must be improved:

1. Pre-service and in-service training and the recruitment and retention of Virginia's teachers, administrators, and classified staff.
2. Pre-service and in-service training and the recruitment and quality of teachers and administrators in schools in challenging environments.
3. Teacher, administrator, and classified staff performance.
4. Local and state capacity to provide professional development support for all employees.
5. The provision of incentives for innovative programs that support personalized learning.

Funding Public Education

The members of the Virginia Association of School Superintendents believe that funding for public education must be increased to ensure that the state meets its responsibility to provide public education as a core function of state government and to promote economic development in Virginia. In order to fulfill its obligation, the state government must:

1. Pay its full share for the quality of public education as required in the Standards of Quality (SOQ).
2. Improve its funding to reduce the disparity between wealthy and poor school divisions and to fund what is identified in the latest educational research as the best practices in public education.
3. Protect Virginia Retirement System (VRS) to make it a healthy defined benefit program and restore it to its fully funded status.
4. Provide multiple funding sources for school construction.
5. Require local revenue sharing agreements to carry over money in excess of required local effort.
6. Conduct a Joint Legislative Audit and Review Commission (JLARC) Study to investigate the impact, performance, and effectiveness of fiscally independent school boards.
7. Require incentive programs to become part of the SOQ (e.g., At-Risk programs, Pre-K programs, etc.)
8. Curtail the use of Lottery funds as a replacement for the SOQ or basic aid funds.
9. Support funding for high-speed Internet connectivity to all schools and communities in Virginia.
10. Provide funding for local school divisions to support teachers in their development of local alternative assessments.

It is important to understand how each of the six focus areas are connected to each other and should be considered in total when building on our present foundation for public education. Our hope is that with this *New Blueprint* and a concerted effort on the part of all stakeholders in public education, we can provide our children with successful futures.

CURRICULUM/READINESS

Goal

All Virginia students will be successfully prepared for citizenship, enrollment in post-secondary education and training, employment, and/or enlistment when they graduate from high school.

Objectives and Strategies

As the chief educational leaders of Virginia's public school divisions, we believe it is imperative that Virginia develop and commit to a shared vision of the knowledge, skills, and dispositions that students need to acquire and be able to apply to become successful learners, employees, and citizens in a global economy. State curriculum standards, assessments, instruction, and professional development must be developed and aligned with each other to ensure that every student has the maximum opportunity to be successful.

We also believe that alternative opportunities should be provided for students to demonstrate college and career readiness in order to meet the graduation requirements. Doing so will foster critical thinking, problem solving, communication and collaborative skills, and creativity to better align students' knowledge and skills with college and workforce needs.

Objective 1: Develop state curriculum standards that define in-depth understanding, cognitive strategies, and learning skills to apply what is learned.

Strategy 1A: Using the existing standards revision schedule, revise Virginia's content-oriented Standards of Learning to reflect the knowledge, skills and dispositions that are important for success in college, careers, and citizenship for students to compete and collaborate globally. Include performance standards, which will more effectively prepare students for their careers.

Strategy 1B: Request that the Board of Education and the Department of Education ask the committees of educators responsible for revising the Standards of Learning to consider fewer, but more in-depth standards that reflect essential skills in areas of communication, problem solving, and critical and creative thinking at the high levels needed for success beyond schools. The revision process for the Standards of Learning should also include opportunities for input from businesses, institutions of higher education, and citizens to ensure that the revised standards include the knowledge and skills that are most important and relevant to students' future success.

Objective 2: Align revised state curriculum with research-based instruction and performance assessments that both develop in-depth understanding and cognitive skills, and show how students apply knowledge and skills.

Strategy 2A: Ensure that the implementation timeline allows for sufficient time to incorporate into local curricula and instruction new content and skills before their inclusion in the state tests used for accountability.

Strategy 2B: Develop an accreditation rating system that allows time to meet new/revised content by establishing interim benchmarks.

Objective 3: Provide incentives for local school divisions to: 1) identify alternative ways for students to accrue standard credits outside of the traditional seat-time requirements, and 2) to identify additional opportunities to earn verified credits beyond passing end-of-course SOL tests or a board-approved substitute test. Recommend that the Board of Education establish guidelines to ensure that the quality of the curriculum is maintained in the process of providing these alternatives and opportunities.

Objective 4: Provide variability in learning time, assessments, and modes of instruction to capitalize on students' learning differences so that they can become proficient in the acquisition and demonstration of the knowledge and skills identified by the curriculum standards. [note, this overlaps with instruction]

Strategy 4A: Ensure that the state curriculum, instruction, and assessments provide for academic enrichment and acceleration, especially in the middle years.

Objective 5: Plan, develop, and assess initiatives that include curriculum, assessment, resources, and practices that address essential literacy and numeracy skills at prescribed intervals.

Objective 6: Plan, develop, and assess an expansion of Pre-K learning experiences for all students.

Rationale

Recent studies have demonstrated that performance on standardized tests alone is not a strong indicator of college and career readiness. Students need a broader array of skills in order to successfully function in and adapt to an ever-changing environment. Revisions to Virginia's Standards of Learning will be made to align state curriculum standards with the knowledge and skills required for college and career readiness, including shifting the focus of assessments to better enable the students to successfully enter college, the workforce, and compete across the world. These new skills provide opportunities for learning outside of the traditional classroom environment, but will also require time and creativity to develop these new teaching methods. Providing students with different modes of instruction will allow students of all backgrounds and learning styles the opportunity to succeed and be prepared to enter a globally focused job market or postsecondary institution.

At the preschool and elementary levels, it is critical to provide a strong foundation of high-quality education. Studies have shown that exceptional instruction at these levels has a profound impact in middle and high school learning and beyond. Expanding learning experiences that support essential literacy and numeracy skills is an important part of providing this exceptional instruction.

ASSESSMENT

Goal

School divisions will use a variety of assessments to document and enhance student growth and achievement and to ensure that students are given sufficient opportunities to demonstrate their acquisition of required knowledge and skills.

Objectives and Strategies

Objective 1: School divisions will have the flexibility to measure student progress and achievement throughout the year, using a variety of assessments, to both document and improve student learning.

Strategy 1A: Support the work of the Governor’s Innovation Committee in identifying and implementing an assessment model that includes, but is not limited to the Standards of Learning (SOL) assessments; College and Work Readiness Assessment (CWRA); student portfolios; problem-based projects; collaborative presentations; and community review of student projects/research studies.

Strategy 1B: Support funding for initiatives at the local level that demonstrate the use of effective performance-based measures of student growth and achievement, including the study of innovative practices and assessments currently in use in Virginia’s school divisions, such as authentic, portfolio, and project-based assessment. Funding should be included for professional development and for increased capacity at the Virginia Department of Education to provide technical assistance to local school divisions. Funding should provide opportunities for collaboration between local school divisions and Virginia’s institutions of higher education.

Strategy 1C: Request that the Board of Education and the Department of Education identify and disseminate best practices in the use of performance assessments by local school divisions.

Strategy 1D: Expand the availability of locally awarded verified credits to students in subjects where SOL assessments are not mandated by federal requirements. School divisions would be permitted to award verified credits to any student who has demonstrated proficiency in the content through an approved alternative assessment.

Strategy 1E: Include interdisciplinary assessments when new tests are developed to measure revised Standards of Learning.

Strategy 1F: Allow for expanded flexibility in assessing students with limited English (ELA) and students with disabilities (SPED) as it pertains to Standards of Learning assessments.

Strategy 1G: Provide a statewide data bank of common diagnostic items designed to monitor the acquisition of curriculum content and skills by students, identify strengths and weaknesses, as well as to help teachers adjust their instructional strategies to meet students’ needs.

Objective 2: Create flexibility in the scheduling of assessments to accommodate the different learning rates of students so that they not only become proficient in acquiring required knowledge and skills, but also accelerate their learning to acquire additional knowledge, more in-depth knowledge, or enhanced skills. Emphasize “on demand” testing options for students to ensure that student readiness, not a fixed testing window, determines when assessments are administered.

Strategy 2A: Provide opportunities for students in elementary and middle school levels who have failed SOL tests, but have come close to meeting the benchmarks, to retake all or parts of the tests related to specific strands, during the same test administration. Such opportunities are to be provided as options for students and parents, but students would not be required to retake failed tests. Remediation of students before retesting would be mandated.

Strategy 2B: Provide funding to give students: 1) opportunities for on-demand testing; 2) additional opportunities for retests; and 3) additional opportunities to demonstrate growth from the beginning of the school year to the end. This effort may include continued movement toward a Computer Adaptive Testing (CAT) format.

Rationale

Recent developments in the ability of large-scale assessments to provide a more balanced, flexible approach to documenting as well as improving student learning suggest that modifications in Virginia’s assessment system will be needed to meet the growing demand for well-documented, enhanced rigor of student learning. While Virginia continues to be a leader in the use of standards-based assessments for accountability, the need for an enhanced vision of how assessment can provide valid data for multiple purposes is clear and well documented. Specifically, there is a need to pivot from the use of assessment solely for holding schools and teachers accountable for what students know to using assessment data to improve teaching and learning of all students, regardless of their level of knowledge and skills. The assessment system needs to be designed to support teaching and learning. This will require a more balanced assessment system with a greater emphasis on using different types of assessments that encourage and confirm learning from a variety of perspectives, as well a greater flexibility in scheduling that will allow greater personalization of student learning.

A critical aspect of assessment is being able to both demonstrate growth in all areas of learning and provide data that teachers can easily access to improve instruction. This includes assessments of deep learning, application, and competencies needed to thrive in increasingly complex careers. To this end, VASS supports the development of an assessment model that will provide the structure and incentives that will meet this goal. The current approach that emphasizes compliance with meeting standards needs to expand to provide multiple forms of data at different times during the year. This will allow schools to more effectively use data to improve learning outcomes as well as document growth of all students.

ACCOUNTABILITY

Goal

Develop a balanced, comprehensive, and fair system of accountability that improves student postsecondary and career readiness.

Objectives and Strategies

Objective 1: Base accountability on multiple, varied measures of representative student performance.

Strategy 1A: Support the state's establishment of a balance between using standardized assessments and other measures that determine what students know and can do.

Strategy 1B: Further reduce the number of state standardized assessments and in lieu of the assessments that are eliminated, use locally developed assessments or other existing assessments (i.e. Virginia Placement Test) for accountability purposes.

Strategy 1C: Provide for autonomy and flexibility for school divisions to develop and apply local alternative assessments.

Strategy 1D: Provide funding for pilots that can demonstrate the effective use of locally developed assessments that substitute for state standardized tests.

Strategy 1E: Revise the Standards of Accreditation (SOA) to include opportunities for the use of other assessments in the school accreditation system in addition to the SOL assessments and other substitute assessments that currently comprise the Virginia Assessment Program.

Strategy 1F: Utilize statistically representative, randomized samplings of students rather than the entire student population for the purpose of determining accountability results.

Objective 2: Use individual student growth as well as status measures to evaluate schools and teachers. This will provide better information to recognize appropriate growth in student learning, and will help identify how instruction can be improved.

Strategy 2A: Revise the Standards of Accreditation to add accreditation ratings that recognize the progress of schools that do not meet the accreditation benchmarks, but have significantly improved their pass rates and which recognize schools that did not meet accreditation benchmarks, but have demonstrated significant growth for the majority of students. For example, schools that have not met the 70% or 75% pass rate benchmark required for full accreditation, but have demonstrated significant improvement in their pass rates might be rated as "provisionally accredited – significant progress demonstrated." Schools that have not improved their overall pass rates, but have demonstrated growth on statewide reading and/or mathematics tests for a majority of their students might receive a rating of "provisionally accredited – significant student growth." The Board of Education should develop guidelines to ensure clarity and consistency.

Strategy 2B: Revise the Standards of Accreditation to add an appeals process for schools that: 1) are not fully accredited; 2) do not demonstrate significant improvement in their pass rates; and 3) do not demonstrate significant growth on the state assessments for their students. Such an appeals process would allow schools that do not achieve one of these three ratings, but meet other criteria as defined by the Board of Education to appeal their rating. The Board of Education should develop guidelines on eligible schools and acceptable evidence.

Strategy 2C: Revise the Standards of Accreditation to provide flexibility in how often schools are accredited. Schools might be accredited annually, every three years, or every five years based on their past accreditation statuses. Schools that do not achieve full accreditation would be permitted to request that their accreditation rating be recalculated the following year. Pass rates on the state-mandated assessments would continue to be posted annually on the School Performance Report Card.

Objective 3: Use a variety of meaningful, easy-to-understand measures, in addition to test scores, to hold educators accountable. For example, additional measures might include student graduation rates; extra-curricular offerings; participation in co-curricular activities; parent satisfaction; faculty licensure and qualifications; external awards and recognitions earned; and school safety data.

Strategy 3A: Include these measures on the School Performance Report Card as well as contextual information such as community demographics, economic development, and state and federal funding.

Objective 4: Provide additional opportunities for students to meet both the standard credit and verified credits required for graduation.

Strategy 4A: Request legislation and associated funding to allow local school divisions to pilot alternative ways for students to demonstrate competency and to earn standard credits outside of the traditional Carnegie units.

Strategy 4B: Request legislation and associated funding to allow for local school divisions to pilot alternative assessments that will provide additional opportunities for students to earn verified credits.

Strategy 4C: Revise the Standards of Accreditation to modify the criteria associated with the locally awarded verified credits and expand their availability to students. School divisions would be permitted to award verified credits to students who have demonstrated proficiency in the content through an alternative assessment without the requirement that students take and fail the SOL assessments prior to being considered for a locally awarded verified credit.

Rationale

School and educator accountability has appropriately changed from a focus on input variables, such as per pupil expenditure and teacher qualifications, to measures of student outcomes. While it is important to maintain an emphasis on student performance as the primary indicator of school success, experience in Virginia and across the nation now suggests that it is necessary to develop a more balanced system of accountability that uses multiple measures of success that target all areas needed for career and postsecondary readiness, and that will lead to improvement in student learning. This change is essential to provide the best comprehensive set of indicators that the public and policy-makers can use to accurately understand student learning, and that educators can use to improve student learning.

Key components of an effective accountability system include the use of multiple measures of student achievement in all important areas, accurate and fair indicators of student progress, flexibility that will accommodate student differences and local resources, and the input of local communities. There is little justification for relying on single test scores to make accountability decisions. Our accountability system must be expanded to include multiple measures that differ in format and structure. This will require research on how a range of measures can be used efficiently and effectively. Valuing multiple measures will reduce the negative consequences of “test-prep” and will promote a focus on more authentic assessments that emphasize and capture the full spectrum of skills needed for college and work readiness success (e.g., deeper understanding, creativity,

perseverance, decision-making, strategic learning, and use of resources). In turn, results of these measures will provide helpful diagnostic information that can be used to improve instruction. An emphasis on student growth is important for fairness and designing instruction that best addresses learning weaknesses. It is clear that students' achievement progress is dependent on where students begin, with respect to current levels of achievement and background factors. This starting point must be included in evaluating what schools and teachers are able to accomplish. It is not simply a matter of getting to the finish line; it is also how far students have traveled. This recognizes the importance of progress for all students. The challenge is to develop and implement fair approaches to measuring progress. Value-added and other statistically-oriented growth modeling are helpful but also have significant limitations, and need to be supplemented with other data.

Enhanced flexibility in accreditation ratings is needed that recognizes growth while mitigating burdensome procedures and requirements. Without changes in the rating system, schools will continue to focus solely on reaching benchmarks. An appeals process promotes greater recognition of individual division circumstances and encourages the use of measures that go beyond tests. Just as schools have many goals, the accreditation system needs to be designed to promote the use of many indicators that reflect those goals.

INSTRUCTIONAL DELIVERY

Goal

Virginia's students will benefit from instructional delivery models supported by evidence-based research that are personalized to accommodate diverse learners and broad enough to maximize students' learning styles.

Objectives and Strategies

Objective 1: Design effective learning schedules that enhance student and teacher performance, and that improve the use of time through a more flexible school schedule.

Strategy 1A: Provide flexibility for school divisions with respect to school starting dates and provide support to extend the school year to meet individual student needs such as year-round school or extended year models.

Strategy 1B: Support competency-based instructional models that allow students to progress through school at their own pace while they master specific skills. These models can provide credit for educational experiences that occur outside the traditional school program/day.

Objective 2: Support multiple paths of learning in classroom instruction for all students to acquire reading and math skills based on their readiness, interest, learning styles, and other characteristics. Formative assessments should be used to assist teachers in differentiating instruction and implementing tiered interventions for students throughout the school year based on their different paths of learning.

Strategy 2A: Increase professional development for localities to implement and expand tiered instructional methods. Increase funding for reading and math specialists to support classroom teachers in providing tiered intervention as part of the tiered instructional delivery.

Objective 3: Provide virtual and blended learning opportunities for all students to enhance personalized learning.

Strategy 3A: Provide adequate funding to school divisions to support virtual and blended learning programs with materials, hardware, software, space, Internet connectivity, and personnel so that all schools, regardless of size, can offer a rich integration of technology tools and technological processes beyond the challenges of time, space, and fiscal capacity.

Objective 4: Provide high-quality professional development for teachers and school leaders in order to expand their knowledge and practice of effective classroom instructional strategies that have been tested and have demonstrated success.

Strategy 4A: Fund professional development opportunities for teachers to expand and improve their knowledge of: 1) evidence-based instructional strategies, project-based learning, essential literacy, and numeracy for students beyond second grade; 2) academic enrichment and acceleration opportunities for grades 4–8; and 3) challenging and accelerated curriculum pathways in math, science, and world languages for high school and post-secondary education.

Strategy 4B: Provide time for teachers to practice, self-reflect, and collaborate with peers and school leaders.

Objective 5: Provide adequate state funding and support for research-based mentoring models, statewide, to be implemented and required for all teachers during their probationary term.

Objective 6: Plan, develop, and assess an expansion of Pre-K learning experiences for students.

Strategy 6A: Provide adequate funding to support professional development in the realm of Pre-K and assure networking opportunities for Pre-K staff across the Commonwealth of Virginia.

Rationale

The ultimate goal of effective instruction is to enhance student performance. This goal is reached when teachers have the knowledge, skills, resources, and information about students that will enable them to provide instruction that addresses the needs of each student and tailor instruction that will motivate and maximize learning progress for all. This model of teaching focuses on how instruction can be matched to individual students' abilities, knowledge, goals, interests, background, learning styles, and other factors, that need to be taken into consideration in the design of instructional experiences. Recently, the term "personalized learning" has been used to describe this approach, although some use personalized learning more specifically to suggest that some kind of virtual experience is included. Other related terms that emphasize a similar perspective include "differentiated instruction," "individualized instruction," or "tiered instruction."

There are many instructional styles that can be used for personalized learning, but it is critical to have adequate resources, support structures, and professional development for schools and teachers to be able to move toward more ubiquitous implementation of this model of instruction. This includes allowing flexibility in the use of school time and schedules, new ways of grouping students, seamless integration of instruction with assessment, mentoring models for professional development, and effective use of technology. Ultimately, the goal is to transition our model of instruction from "one-size-fits-all," a longstanding approach in which all or most students are provided with the same instruction, to flexible, evolving, and adaptive instructional experiences that are able to engage students meaningfully and accelerate students' learning by encouraging each student to learn at his or her own pace. Digital-based learning experiences are essential to implement this goal. This includes established online and blended instructional approaches, as well as more recent technology-enhanced learning strategies that include the use of mobile devices, social networking, and BYOD (Bring Your Own Device).

VASS is committed to enhancing what we call teachers' pedagogical data literacy. Pedagogical data literacy is the ability of teachers to identify, gather, interpret, and use data to plan and evaluate instruction. This capacity of teachers, using data diagnostically to discern student needs, preferences, strengths, and weaknesses, is critical to personalized instruction and needs to be supported. Together with more structural, organizational changes, enhanced pedagogical data literacy is essential to more effective instruction.

HUMAN CAPITAL

Goal

Improve Virginia's human capital for the provision of high-quality, globally-competitive public education.

Objectives and Strategies

Objective 1: Improve recruitment and retention of teachers, administrators, and classified staff in Virginia.

Strategy 1A: Increase salaries and benefits of all teachers, administrators, superintendents and classified staff so that Virginia will be in the top of its competitive market and in the top 10% in the nation.

Strategy 1B: Pursue a more secure retirement future for Hybrid participants through investment opportunities designed to increase the VRS return to participants.

Strategy 1C: Provide programs and incentives within the Virginia Teaching Scholarship Loan Program (VTSL) to encourage students to become teachers. Support efforts to increase enrollment in, and completion of, teacher education programs within colleges and universities. Broaden the eligibility criteria and award procedures available through VTSL.

Strategy 1D: Support locally-developed differentiated compensation models that are based on the successful application of research and resulting student performance gains.

Strategy 1E: Establish a Commonwealth database of education candidates to aid in the recruitment and employment of qualified school personnel.

Objective 2: Improve the recruitment and quality of teachers and administrators in schools in challenging environments.

Strategy 2A: Request that Virginia General Assembly provide the following based on the recommendations in the *Report of the VSBA Task Force on Schools in Challenging Environments*: (1) loan forgiveness for teachers and principals in accredited with warning or accreditation denied schools; (2) bonuses for teaching in schools that are accredited with warning or accreditation denied; (3) housing incentives; (4) tuition assistance for teachers extending certifications to critical needs areas; (5) participation in Virginia Retirement System Plan 1; and (6) ten additional days in the teaching contract in high poverty schools.

Objective 3: Improve teacher, administrator, and classified staff performance.

Strategy 3A: Recommend that the Board of Education and the Department of Education provide assistance during implementation of a fair and uniform evaluation system that provides for timely reporting of student achievement data and other performance indicators to be used as the basis for teacher and administrator evaluation.

Strategy 3B: Recommend to the State Council of Higher Education for Virginia (SCHEV) and the Advisory Board for Teacher Education and Licensure (ABTEL) that all teacher candidates have a supervised in-class student teaching experience prior to employment and licensure.

Strategy 3C: Recommend to the Board of Education that a study be conducted to review the practice of granting teacher continuing contract status as a local option.

Strategy 3D: Strengthen the relationship and communication between higher education teacher preparation programs and public school divisions.

Objective 4: Build local and state capacity to provide professional development support for all employees.

Strategy 4A: Support the development of comprehensive professional learning initiatives, planning, and actions for teachers and administrators with a focus on all aspects of assessment and accountability.

Strategy 4B: Fund virtual resources and instructional technology for professional development on instructional delivery/assessment practices to improve student achievement.

Strategy 4C: Emphasize professional development using instructional technology to improve student achievement.

Strategy 4D: Support the establishment of regional training and research centers to promote innovative pedagogical methodologies in cooperation with Virginia colleges and universities.

Objective 5: Provide incentives for innovative programs that support personalized learning.

Strategy 5A: Allow SOQ flexibility for school divisions that are piloting and/or implementing personalized learning.

Rationale

It is undeniable that the quality of education students receive is dependent on having high quality teachers and staff who continually improve their performance. The recruitment, cultivation and retention of high quality teachers, administrators, and classified staff are integral to the success of Virginia's public education program. The core of education is teaching and learning, and the teaching-learning connection works best when school divisions have highly effective teachers working with every student every day. Simply put, excellence in an education system cannot exceed the excellence of its teachers. Teachers have the challenging task of meeting the educational needs of a diverse student population, and compensation, support, professional development, and effective evaluation systems are necessary to sustain and improve their efforts.

To enhance the pool of highly qualified candidates for teaching and administrative positions several strategies need to be implemented, including increased financial support and incentives, particularly in staffing low performing schools, better articulation with college and university teacher preparation programs, and support for novel approaches to identify and train new personnel. To continue to enhance the quality of teachers and staff, appropriate professional development is needed, as well as differentiated compensation to encourage and reward meritorious performance. Teacher and staff morale is low; professional development needs to address this issue both for improving current teacher and staff performance, and to attract talented, dedicated individuals to careers as educators. Immediate and long-term objectives should be to improve recruitment, retention, performance, and professional development so that current and future Virginia educators and support staff can attain their greatest potentials.

FUNDING PUBLIC EDUCATION

Goal

Increase funding for public education to ensure that the state meets its responsibility to provide public education as a core function of state government and to promote economic development in Virginia.

Objectives and Strategies

Objective 1: Require the state to pay its full share for the quality of public education as required in the Virginia Standards of Quality (SOQ).

Strategy 1A: Review and update the SOQ to ensure that it reflects the actual costs and unmet needs of providing quality education.

Strategy 1B: Enact a rebenchmarking policy that does not exclude all federal funds.

Strategy 1C: Use the current state budget categories and redefine existing categories including “Administration and Attendance,” to better distinguish school-level leadership and recognize its direct impact on learning.

Strategy 1D: Re-examine state mandates and resulting cost burdens placed on local school divisions with the intent that all mandates passed by the General Assembly would be fully funded.

Strategy 1E: Revise the Virginia Preschool Initiative funding formula to reflect the actual cost of providing preschool services.

Objective 2: Improve state funding to reduce the disparity between wealthy and poor school divisions and to fund what is identified in the latest educational research as the best practices in public education.

Strategy 2A: Conduct a Joint Legislative Audit and Review Commission (JLARC) Study to evaluate state funding disparities and distribution.

Strategy 2B: Remove the Federal Deduct from the current funding formula.

Strategy 2C: Request that the Virginia General Assembly establish a formalized plan to restore funding cuts made since 2008-09 (including removal of the cap on support staff) and increase overall support for public education in the Commonwealth of Virginia.

Strategy 2D: Request that the Virginia General Assembly create special funds as well as expand current funds to support broadband and technology infrastructure at challenged schools with special attention to rural and low performing school divisions.

Objective 3: Protect Virginia Retirement System (VRS) to make it a healthy defined benefit program and restore it to its fully funded status.

Strategy 3A: VRS funds must not be utilized to offset proposed expenditures in other areas.

Strategy 3B: Provide VRS funding that more accurately reflects the VRS Board’s recommended actuarial rate.

Strategy 3C: Consider proposals that adequately fund VRS.

Objective 4: Require that the state provide multiple funding sources for school construction.

Strategy 4A: Reinstate the Literary Loan Program with increases from \$7.5 million to \$12 million for each approved project.

Strategy 4B: Provide direct state aid funding for school maintenance and construction projects.

Strategy 4C: Establish state-provided debt service opportunities for local education agencies.

Strategy 4D: Explore and establish new state-supported and initiated sources for school construction.

Objective 5: Require local revenue sharing agreements to carry over money in excess of required local effort.

Objective 6: Conduct a Joint Legislative Audit and Review Commission (JLARC) Study to investigate the impact, performance, and effectiveness of fiscally independent school boards.

Objective 7: Require incentive programs to become part of the SOQ (e.g. At-Risk programs and Pre-K programs).

Objective 8: Curtail use of Lottery funds as a replacement for the SOQ or basic aid funds.

Objective 9: Support funding for high-speed Internet connectivity to all schools and communities in Virginia.

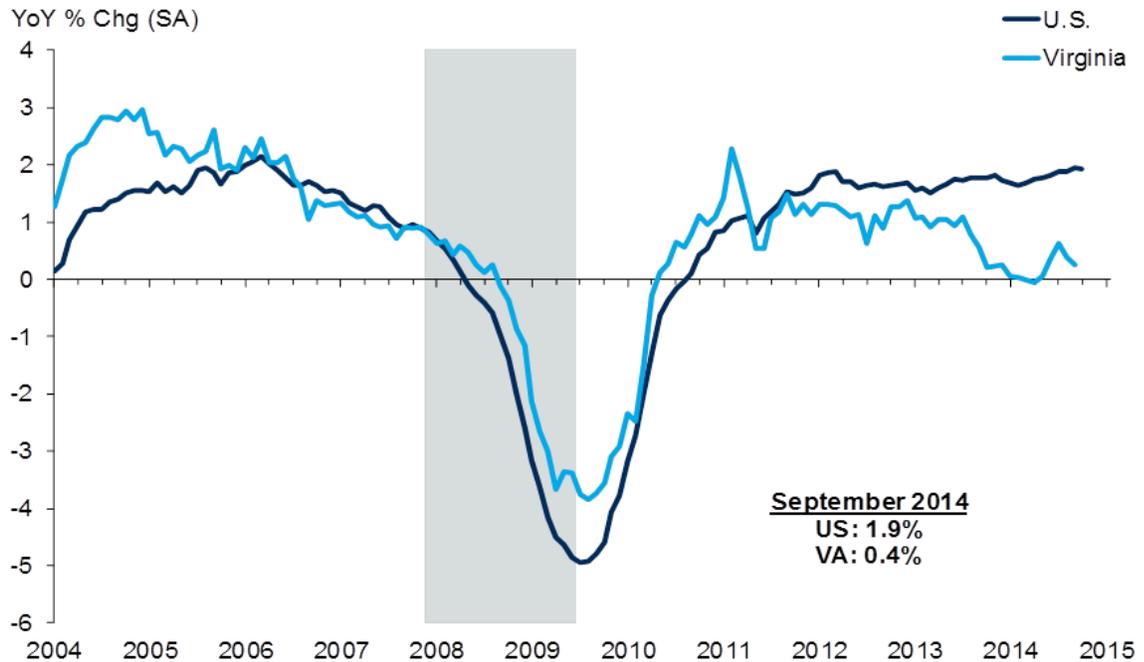
Objective 10: Provide funding for school divisions to support teachers in their development of local alternative assessments.

Rationale

A fundamental re-thinking of how the state finances its K-12 public education system is required for Virginia to maintain its standing as having one of the best K-12 education systems in the country. State aid to public education has been inadequate and declining since the 2009 recession. Major state K-12 budget cuts since 2010 have not been restored and a new round of state reductions may be coming. According to JLARC's most recent report on state spending, Virginia ranks 39th in per pupil state support for K-12 public education. Policymakers must understand that education is the foundation for economic growth in the 21st century. Our competitors are not standing still. New investment in Virginia's education system is critical to our economic future.

The near-term economic and financial outlook for Virginia has worsened. While the good news is the United States' economy has improved, the bad news is Virginia's economy has deteriorated since 2013 with much slower employment growth. Virginia relies on federal funding (44% is defense spending) for as much as 20 percent of its economy and federal spending in Virginia is declining.¹ Defense spending declined by 7 percent in federal fiscal year 2013 and another 5 percent in 2014.² The impact of these federal reductions on Virginia's economy has been profound. Employment growth has stalled (see graph on next page), high-paying defense contracting jobs have declined, and tax revenues have suffered. State general fund revenues declined by 1.6 percent in fiscal year 2014 and are currently forecast to only increase by 2.9 and 2.7 percent in fiscal year 2015 and fiscal year 2016.

Virginia's Employment Growth Has Slowed³



Since February 2014, the state has reduced its 2014-16 general fund budget outlook by \$2.4 billion. Already enacted state K-12 budget reductions removed all but the base re-benchmarking increases planned for the 2014-16 biennium. While K-12 public education has so far fared better in the 2014-16 budget reductions than most other areas of the budget, there is still \$49.8 million (fiscal year 15) and \$272 million (fiscal year 16) in budget reductions needed, plus \$100 million in still unidentified executive management savings in fiscal year 2016. A relatively small core of agency budgets having already taken the brunt of budget reductions, and large portions of the GF budget are off-limits to cuts (i.e., Medicaid, debt service, rainy day funds, car tax reimbursements, etc.). Therefore, unless state general fund revenue growth improves markedly, it is likely K-12 funding will be reduced further for fiscal year 2016 during the 2015 General Assembly Session.

The longer-term ability for the state to meaningfully increase appropriations for K-12 public education is also problematic given current policies. Hundreds of millions of dollars of general fund budget reductions in the 2014-16 biennium are one-time in nature, or were not intended to be permanent - including sweeping up all unspent balances, use of non-general funds, indiscriminate funding reductions to local government, and cuts to higher education base funding levels. In addition, the state is relying on \$235 million in rainy day funds in fiscal year 2016 to fund ongoing operating expenses. Constitutional requirements also mandate that the state must make a rainy day fund deposit of \$156 million in fiscal year 2017 just for achieving its 2.9 revenue target in fiscal year 2015. Without significant revenue growth beyond current forecasts (and above required rainy day fund deposits), the state will be starting the 2016-18 budget cycle with a nearly \$1 billion structural imbalance to fill before even thinking about restoring previous budget reductions, or adding funding to K-12 programs or teacher salaries.

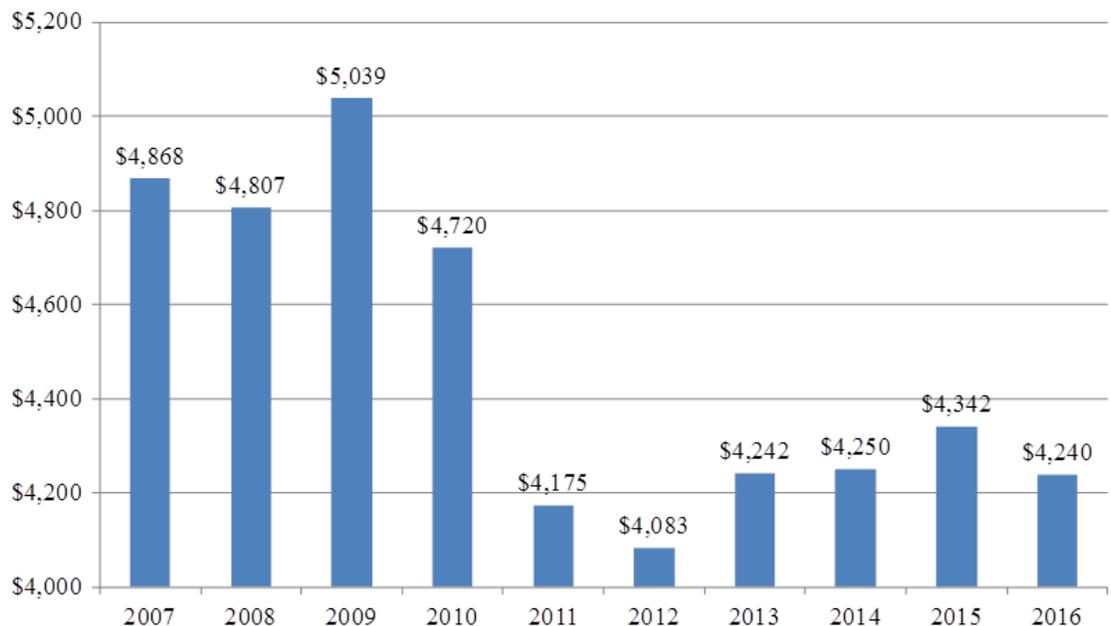
¹<http://jlarc.virginia.gov/reports/Rpt455.pdf>

²CBO Monthly Budget Reviews

³https://www.richmondfed.org/research/regional_economy/reports/fifth_district_economic_indicators/index.cfm

State direct aid appropriations for K-12 have grown little, if at all, for some time – even taking into account the 2004 state tax increases. In their 2013 review of state spending, JLARC reported that over the ten year period from 2004-13 total state direct aid appropriations to K-12 grew just 39 percent, with general fund K-12 direct aid appropriations growing only 27 percent.⁴ In its latest 2014 draft state spending report, JLARC reports that over the latest ten year period from 2005-14 total state direct aid appropriations to K-12 grew only 25 percent, with general fund K-12 direct aid appropriations growing only 13 percent.⁵ Since the 2009 recession, state K-12 funding has actually declined. State direct aid K-12 appropriations in fiscal year 2009 were \$7.1 billion (all funds)/\$5.6 billion (GF), and in fiscal year 2014 were only \$6.8 billion (all funds)/\$5.2 billion (GF). State aid for K-12 has dropped even more when viewed in the context of inflation-adjusted per pupil spending (see graph below) – from \$5,039 in fiscal year 2009 to \$4,250 in fiscal year 2014 (all funds, 2007\$).

Inflation-Adjusted State Per Pupil K-12 Funding Reveals Large Declines in State Aid (2007 \$ - All State Appropriated Funds)



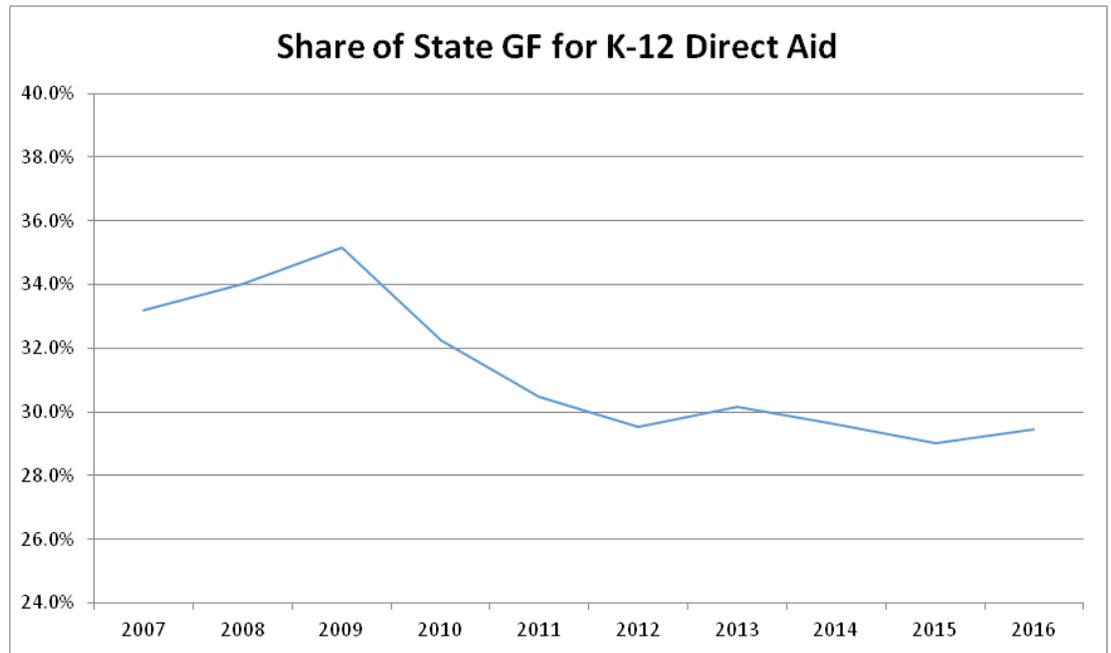
So where does Virginia get the resources to invest in education? Virginia needs to look at its tax base. Over the last several decades, whenever revenues grew above trend, our policymakers permanently reduced the general fund tax base. The 2004 \$900 mil./yr. tax increase has been more than offset by numerous tax reductions, such as the car tax reduction (\$950 mil./yr), age subtraction (\$300 mil./yr), food for home consumption sales tax relief (\$220 mil./yr), low income tax relief (\$200 mil./yr), estate tax repeal (\$150 mil./yr), insurance premiums transfer to transportation (\$130 mil./yr), land preservation tax credit (\$100 mil./yr), coal tax credits (\$80 mil./yr), corporate taxable income change to a single sales factor (\$60 mil./yr), and dozens of other smaller, but still substantial tax loopholes and preferences. Virginia has also traditionally exempted services and non-profits from the state sales tax. Virginia cannot afford all of these tax preferences. Choices need to be

⁴<http://jlarc.virginia.gov/reports/Rpt449.pdf>

⁵<http://jlarc.virginia.gov/reports/Rpt462.pdf>

made between investing for our education future, or providing special interest tax preferences and loopholes.

State K-12 funding reductions have reduced K-12 funding from 35 percent of the general fund in fiscal year 2009 to below 30 percent in fiscal year 2014 and beyond (see graph below).



The state's reduction in funding for K-12 has occurred through numerous policy changes since fiscal year 2009 (see table below). Most of the policy changes have resulted in reduced state funding for school "support" personnel and administrative and employee benefits. The reality is that local school divisions have to continue to provide the same or an even greater level of programs and services to meet the state demands to improve accountability and school performance.

<u>Major State K-12 Funding Policy Changes Since 2009</u>	<u>Session</u>	<u>Biennial SMil.</u>
Cap Funding for Support Positions	2009	(\$754)
Eliminate School Construction Grants	2009	(\$55)
Adjust Health Care Participation Rates	2010	(\$269)
Eliminate Equipment, Travel, Misc. Expenses From SOQ Calculation	2010	(\$244)
Include \$0 Values in Linear Weighted Avg Calculation	2010	(\$79)
Eliminate Lottery Support for School Construction	2010	(\$67)
Drop Lowest Tier From K-3 Class Size Calculation	2010	(\$36)
Extend School Bus Replacement Cycle From 12 to 15 Yrs	2010	(\$19)
Eliminate Enrollment Loss Assistance	2010	(\$16)
Eliminate Non-personal Inflation Update (not originally intended as permanent, partially offset in 2012-14 biennium)	2012	(\$109)
Reduce Nova COCA for support positions	2012	(\$28)
Use Kindergarten as Proxy for 4-yr-old Pre-K Count	2012	(\$27)
Total Major Policy Changes Since 2009		(\$1,703)

While state aid for public education has been dropping both in nominal and real terms, and as a share of the state's general fund, the state's Board of Education has been recommending increases in the definition of the Standards of Quality. Unfortunately, the General Assembly has not provided the funding to adopt these changes (see table below).

	<u>Year First Recommended</u>	<u>FY 2014 Est. \$ Mil</u>
A full-time principal for each elementary school	2003	\$8.0
A full-time assistant principal for every 400 students in the school	2003	\$70.6
One reading specialist for every 1,000 students in K-12	2003	\$51.3
One mathematics specialist for every 1,000 students in K-8	2006	\$35.0
A data manager-test coordinator for every 1,000 students in K-12	2006	\$51.3
Reducing speech-language pathologist caseloads from 68 to 60	2003	\$5.3
Total Annual Unfunded BOE Recommended SOQ Changes		\$221.5

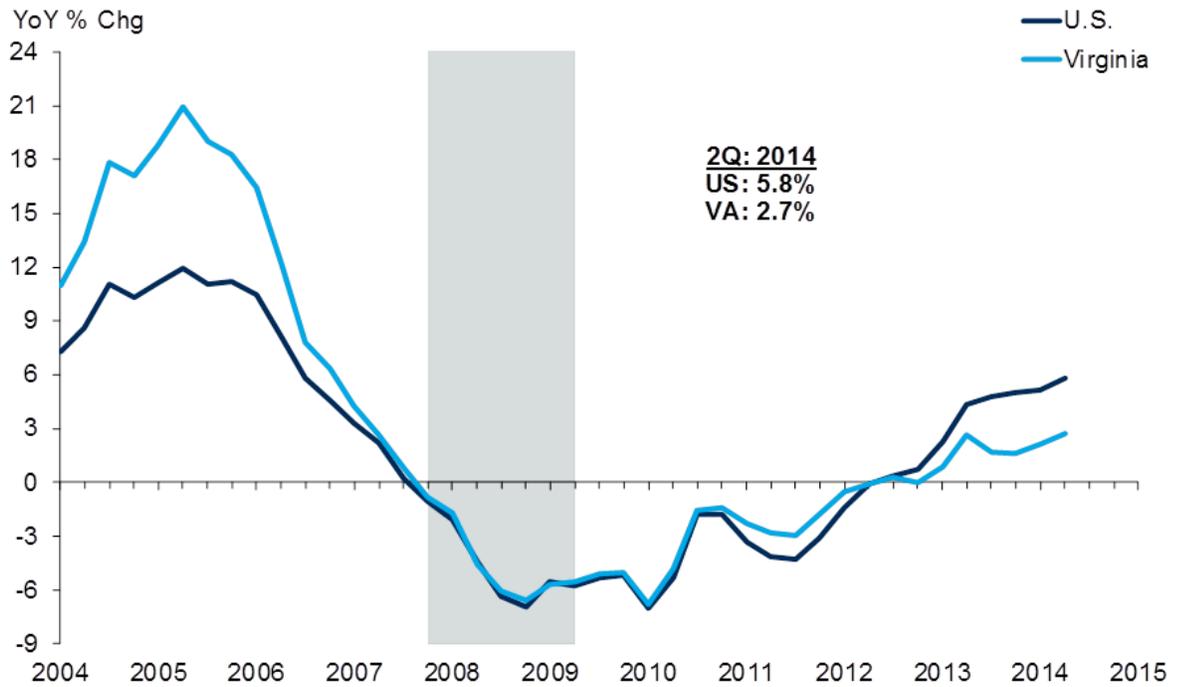
With reduced state support, the burden of providing adequate funding has fallen to the localities. However, localities already shoulder a much larger portion of K-12 expenditures than intended by state policy. Under the definitions of the state's Standards of Quality, the localities are expected to pay 45 percent of total costs. In reality, localities fund 56 percent of the total state-local cost of public education.⁶ The Virginia Department of Education reported that localities had to budget \$3.55 billion in fiscal year 2013 above their state required local effort (RLE) to maintain real world school systems.⁷ The reality is that school divisions spent 108 percent more than required by the state in fiscal year 2013.

⁶http://www.doe.virginia.gov/statistics_reports/supts_annual_report/index.shtml, Table 15

⁷[http://leg2.state.va.us/dls/h&sdocs.nsf/By+Year/RD212011/\\$file/RD21.pdf](http://leg2.state.va.us/dls/h&sdocs.nsf/By+Year/RD212011/$file/RD21.pdf)

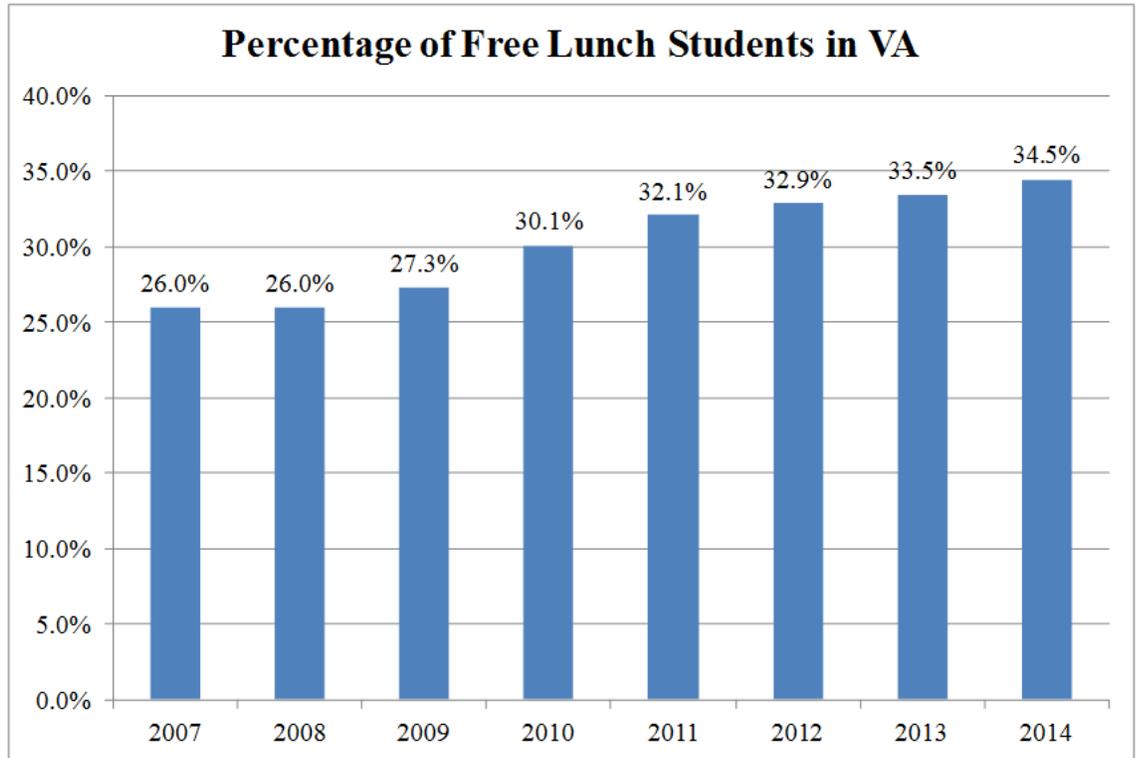
It is problematic to expect localities to shoulder an even higher burden of funding K-12 public education than they already do. Real estate values continue to be depressed in Virginia compared to the recovery in the U.S. as a whole (see graph below). As a result, local government revenues remain depressed – increasing only 2 percent in fiscal year 2013 – and with little prospect for even average growth rates in future years without significant tax rate increases.

House Price Index⁸



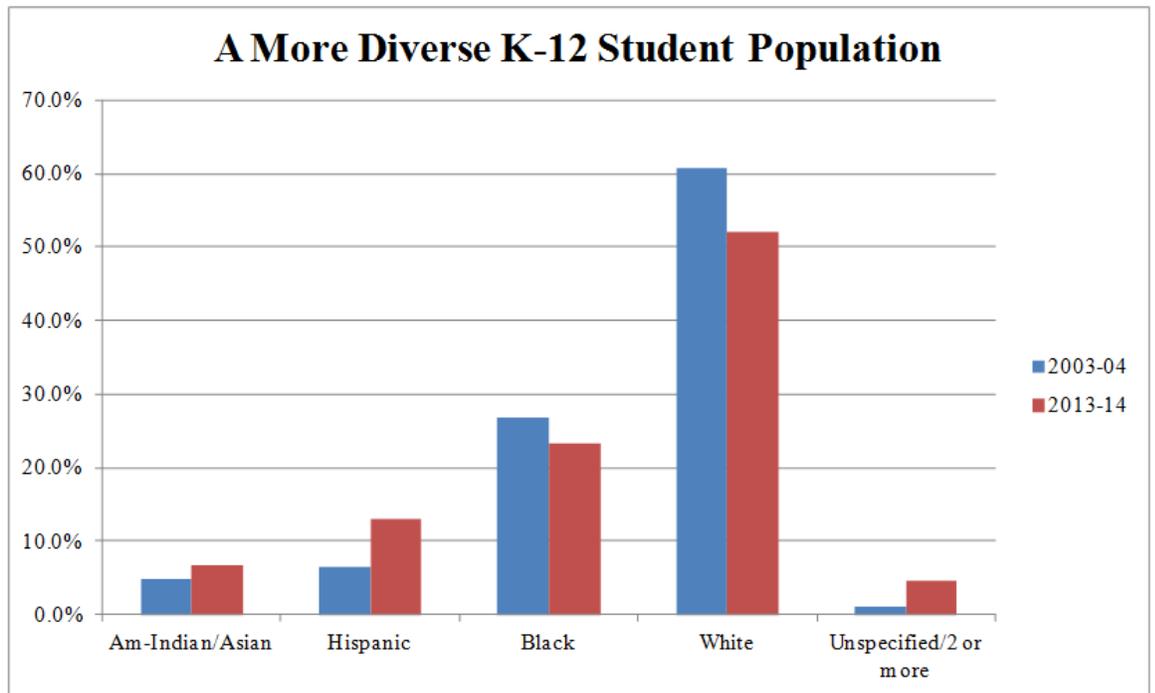
K-12 Public Education Needs Are Growing

At the same time that state K-12 funding has declined, the number of at-risk students in Virginia schools has significantly increased. More than one-third of K-12 students are now free lunch eligible (see graph below), with another seven percent reduced-price lunch eligible.⁹



⁹<http://www.doe.virginia.gov/support/nutrition/statistics/index.shtml>

Virginia’s K-12 public schools are also becoming more racially diverse, with the largest increases occurring in the Hispanic and Asian student populations (see graph below).



These more economically-challenged and diverse student populations increase the challenge of meeting more stringent testing and graduation requirements. State requirements for improving school and student performance have increased. SOL tests, graduation requirements, and school accreditation standards have become more rigorous. School accreditation ratings reflect student achievement on SOL tests and other approved assessments in English, history/social science, mathematics and, science. Ratings are based on the achievement of students on tests taken during the previous academic year or on a three-year average of achievement. 577 Virginia public schools, or 32 percent of all schools, are not fully accredited. 2014-15 school accreditation ratings are listed below:

Fully Accredited	1249
Provisionally/Conditionally Accredited	23
Accredited with Warning	541
Accreditation Denied	13

There is still a yawning achievement gap in Virginia for at-risk students. In the 2013-14 school year, there was a 20-30 point achievement gap for economically-disadvantaged students (see table below). As a result, 36 “Priority” and 73 “Focus” schools have been identified based on overall reading and mathematics achievement and graduation rates in the case of high schools. Priority schools are among the lowest five percent performing schools and must engage a state-approved turnaround partner to help implement an improvement model. Focus schools have specific needs for improvement and must employ a state-approved coach to help implement intervention strategies to meet achievement goals. Most underperforming schools are subject to these and other intervention strategies as a consequence of not meeting accountability standards.

The Achievement Gap Persists 2013-14 SOL Pass Rates

	English	Math
Asian	87	90
White	82	80
Hispanic	65	67
Black	59	60
Economically Disadvantaged	59	61
Limited English Proficiency	54	62

The good news is that even with these challenges Virginia’s public schools are showing improvement. On-time graduation rates have increased 8.6 percent since fiscal year 2008. The class of 2014 graduated almost 90 percent within four years, and more than 50 percent graduated with an advanced diploma.¹⁰ While it’s difficult to compare SOL English scores with previous years due to the more stringent SOL tests instituted for the 2012-13 school year, SOL math scores are comparable. Math scores have steadily improved for all subgroups over the last several years (see table below). However this improvement will not continue without adequate funding and resources.

SOL Pass Rates Improve for Math

	2011-12	2012-13	2013-14
Asian	87	88	90
White	75	77	80
Hispanic	61	64	67
Black	52	55	60
Economically Disadvantaged	54	57	61
Limited English Proficiency	59	59	62

¹⁰http://www.doe.virginia.gov/statistics_reports/graduation_completion/cohort_reports/index.shtml

Summary

There is a fundamental mismatch in Virginia between the performance expectations and goals for K-12 public schools and the amount of state funding provided to meet our high expectations. State funding has been significantly reduced since the last recession and has not been restored. Given the performance of Virginia's economy and resulting state tax revenues over the last year, there is the threat of further reductions in fiscal year 2016.

Local governments have been hard pressed to make up the funding reductions from the state. Localities already provide more than double what is required to match state K-12 appropriations. Local revenues remain stressed from the slow recovery of the real estate market in Virginia.

Our school system is becoming more diverse. The recession also contributed to the rising number of at-risk students. The number of free and reduced lunch economically-disadvantaged students has risen by over eight percent since 2008 to about 41 percent of all K-12 students in Virginia. These students have traditionally been harder to teach as reflected in their substantially lower SOL scores.

At the same time, Standards of Learning, and accreditation and graduation requirements have become more stringent. Expectations and requirements for closing the achievement gap with at-risk students have also risen. While progress has been made in recent years in closing the achievement gap, it will take resources, quality teaching, and leadership to completely close the achievement gap and attain our ultimate goal of a quality education for all students in order to successfully compete in the global economy of the 21st century.

Virginia's economy has become dependent on federal spending. Reductions in federal spending, particularly in defense, have dramatically lowered the growth in our economy. Everyone recognizes that Virginia needs an economic transformation. Public policymakers in Virginia need to understand that transforming our economy requires a more qualified workforce – and that requires more resources.

Hard choices about priorities also need to be made about how our state resources can meet our education needs. Virginia's tax code is littered with tax preferences for special interests. Restoring proper balance to Virginia's tax base is the first step toward adequately funding public education. Without the necessary resources, it is tough to expect our school systems to meet the needs of our diverse population and to train the highly qualified workforce required for the 21st century economy.

¹The same JLARC report cited a 112 percent increase from 2004-13 in total state appropriations for "financial assistance to public ed - SOQ". The funding sources and definitions for the state's Standards of Quality (SOQ) have changed since FY 2004, making a 10 year comparison for "SOQ" spending irrelevant to state aid for K-12. Primarily, the state sales tax distribution based on school-age population is not included in FY 2004 SOQ funding while it is included in FY 2013.



Appendix A

Glossary of Terms

Curriculum/Readiness

college and career readiness – a student’s level of preparation for entry into the workforce and college.

state curriculum standards – benchmark content established by the state, defining what students should be taught.

performance standards – benchmarked content, defining what skills students should be taught.

local curricula – content established by each local community, defining what students should be taught.

accreditation rating system – a method of establishing a value of benchmarked school performance.

interim benchmarks – progress check (typically in the form of an assessment) to measure progress toward goals.

standard credits – units of measurement symbolizing the successful completion of high school courses.

verified credits – high school credits that have been confirmed as “earned” with the verification of a student passing a corresponding end-of-course assessment.

seat-time requirements – a mandate that a certain amount of time be required for credit bearing courses.

end-of-course SOL tests – assessments at the end of selected high school credit-bearing courses, where verified credits can be earned with passing scores.

State Board of Education approved substitute tests – alternatives to the SOL tests that have been approved by the state’s governing body.

variability in learning time – allowance of variations in the amount of time allocated for learning activities as opposed to seat time requirements.

academic enrichment – opportunities for students to expand learning beyond the curriculum by connecting the curriculum to broader or deeper concepts.

academic acceleration – students who learn at a pace faster than their peers or programmatic decisions made to facilitate student learning at a faster pace than the general population.

essential literacy – development of basic reading and language arts concepts and skills.

numeracy skills – development of basic mathematical concepts and skills.

Pre-K – academic instruction for students under the age of five years old in a school setting that is not Kindergarten or at a higher level.

Assessment

student growth – the change in student achievement for an individual student between two or more points in time.

student achievement – student demonstrated mastery of certain knowledge and/or skills as measured by a particular assessment.

student portfolios – a type of assessment that is a collection of student work and artifacts that demonstrate mastery of course and/or subject knowledge and skills. The collection should include evidence of student reflection and self-evaluation, guidelines for selecting the portfolio contents, and criteria for judging the quality of the work included in the portfolio (Venn, 2000, pp. 530-531).

problem-based projects – forms of inquiry-based instruction that are frequently utilized in mathematics to engage students in the investigation and resolution of real-world problems.

performance-based assessments/measures – assessment strategies that go beyond standardized and multiple choice tests, designed to estimate a child’s knowledge, understanding, ability, skill and/or attitudes. Performance-based assessments typically include, but are not limited to: exhibitions, investigations, demonstrations, written or oral responses, journals, and portfolios.

authentic assessments – assessments which ask students to perform real-world tasks. Student will typically have to employ critical thinking and problem-solving skills to successfully address the challenge presented. Student performance on a task is typically scored on the basis of a list of desired outcomes (known as a rubric).

portfolio assessments – assessments that are systematic collections of student work and artifacts that demonstrate mastery of course and/or subject knowledge and skills.

project-based learning/assessments – teaching approaches that engage students in sustained, collaborative real-world investigations. Projects are organized around a driving question, and students participate in a variety of hands-on tasks that seek to meaningfully address this question. (Buck Institute).

alternative assessments – assessments that are used primarily to determine what students can and cannot do, in contrast to what they do or do not know. In other words, an alternative assessment measures applied proficiency more than it measures knowledge. There are multiple types of alternative assessments, of which performance assessment is one.

interdisciplinary assessments – assessments that measures student performance on content and/or skills across content areas.

locally awarded verified credits – a process that allows local school divisions the option to provide students with verified credits in order to meet graduation requirements. Currently, local school divisions can award locally awarded verified credits to students in the areas of science, social science/history, and career and technical education in order to meet graduation requirements. In order to qualify for this credit, students must meet established criteria.

common diagnostic items – a collection of assessment items that can be utilized to pre-assess students on content and skills.

“on demand” testing – testing that allows for flexibility to assess students when they are ready to be tested on required content rather than testing students according to an established testing window that does not account for student readiness.

strands – the content assessed on each of the Standards of Learning (SOL) tests is organized by strands. For example, the mathematics assessment addresses several strands that include areas such as number and number sense, computation and estimation, and measurement.

Computer Adaptive Testing (CAT) – tests taken using a computer program that adjust the difficulty of test questions based on student responses.

rubric – a description of the criteria for success and levels of achievement for a task. Rubrics are used during instruction to help students maximize and improve the quality of their work as well as scoring tools for multiple types of alternative assessments. (see Performance Assessment).

balanced assessment system – an assessment system that employs multiple types of assessments so that: (1) achievement and growth are taken into account; (2) assessments are matched to learning goals (both core content mastery and skills for success in the modern world); and (3) the need for accountability measures is met, but not at the expense of meaningful information that informs classroom instruction.

Accountability

standardized assessments – testing instruments that are the same in terms of the numbers and types of questions, the time they are administered and to whom; they are used to determine what students know and to compare results between students, schools, and districts on a statewide basis.

Virginia Placement Test – the test used by Virginia Community Colleges to place students in English and math classes.

pilot programs – small scale experiments or studies that are used to determine how large-scale experiments or studies might work.

Standards of Accreditation (SOA) – criteria established by the Virginia Board of Education to ensure that an effective educational program is established and maintained in Virginia’s public schools to provide an essential foundation of educational programs of high quality in all schools for all students; encourage continuous appraisal and improvement of the school program for the purpose of raising student achievement; foster public confidence; assure recognition of Virginia’s public schools by other institutions of learning; and establish a means of determining the effectiveness of schools.

statistically representative, randomized samples – subsets of statistical populations that accurately reflect the members of the entire populations and are chosen by chance. In a classroom of 30 students in which half the students are male and half are female, a representative, random sample would include six students - three males and three females – chosen by chance.

accreditation benchmarks – the percentages of students passing state standardized tests given in particular grades that determine if schools meet the prescribed academic standards established by the Virginia Board of Education for credentialing the schools.

pass rates – the percentages of students passing Virginia’s state standardized tests.

full accreditation – the designation of a school and/or school district in Virginia when the school’s and/or district’s students meet the pass rates prescribed by the Virginia Board of Education on all of the Standards of Learning Assessments and other tests in English, history/social science, mathematics and science that are taken by the students during the previous academic year or reflect a three-year average of achievement.

School Performance Report Card – the method used by the Virginia Department of Education to inform the public of the progress of schools in raising student achievement and enhancing the learning environment; School Performance Report Cards include data on student achievement by grade, subject, and student subgroup and information on other indicators of school quality such as accountability ratings, attendance, program completion, school safety, and teacher quality.

co-curricular activities – programs and learning experiences that complement, in some way, what students are learning in school – e.g. experiences that are connected to or mirror the academic curriculum.

competency – student’s attainment of a specific skill or learning outcome, which may be considered as one unit of a larger learning goal and which may be determined by a number of different methods and demonstrated at any time.

Carnegie Units – time-based references for measuring educational attainment; 120 hours of class or contact time with an instructor over the course of a year at the secondary level.

Instructional Delivery

instructional delivery models – examples of high quality classroom instruction that reflect the unique learning needs of the students. For example, students who are visual learners learn best when concepts and skills are introduced and taught using hands-on materials and visual images.

evidence-based research – research that demonstrates successful, meaningful, and practical real life information that provides foundational support to the best practices for student learning.

flexible learning schedules – calendar year and day-to-day classroom schedules that reflect the learning needs of our students. For example, in localities that choose an annual school calendar based on the instructional needs of the students, an individual school would set the daily schedule to adhere to the State Standards of Accreditation, yet utilize flexibility in determining the instructional blocks of time allotted for varying subject areas and based on students’ learning needs.

competency-based instructional models – instruction that relies on teaching students a set of skills and/or concepts that can be demonstrated to assure mastery of such skill.

multiple paths of learning – a variety of instructional and learning activities provided in succession to address the unique and personal learning needs of students.

formative assessments – assessments that are given during the time frame that a skill or concept is introduced and can indicate the degree of understanding on behalf of the student. Formative assessments, such as quizzes, do nows, and/or exit slips can inform the teacher as to the students’ level of understanding.

differentiating instruction – varied approaches to teaching skills or concepts that address the individual learning needs of students.

tiered interventions – instruction delivered to students that varies on several dimensions related to the nature and severity of the student’s difficulties.

tiered instructional methods – procedures or techniques used by teachers that vary on several dimensions depending on the nature and severity of the student’s difficulties. Instructional methods are customized to reflect a student’s degree of understanding of a particular skill or concept.

virtual learning – utilizing online and/or web based instructional methods and/or programs to broaden and customize the opportunities for course work available to students.

blended learning – combining the class setting with online opportunities for learning a particular concept or skill. Students and teachers connect “face to face” and are partners in learning via the online setting.

personalized learning – an approach to teaching and learning that addresses the unique needs of individual students; customized education.

evidence-based instructional strategies – instructional strategies that have a “record of success”; instructional techniques that are utilized to assure the best possible opportunity for learning a particular skill set or concept and are directly supported by research.

academic enrichment – learning opportunities for students to acquire deeper and richer knowledge and skills.

acceleration opportunities – options for learning that allow students to move more quickly through their course work; learning options that are not constrained by the variable of time.

accelerated curriculum pathways – sequences of courses or learning activities that address students’ individual learning needs and allow them to acquire prescribed bodies of knowledge and/or skills more quickly.

research-based mentoring models – examples of successful relationships and practices demonstrated by experienced individuals who assist those with less experience; the success of which is supported by research.

Human Capital

Human Capital – the collective skills, knowledge, or other intangible assets of individuals that can be used to create educational value for student learners, their employers, or their community with the overarching goal of substantially improving instructional practice, and the effectiveness of classroom teachers and administrators.

pre-service training – refers to activities which take place before a person takes a job which requires specific training, such as before a teacher ‘enters service’ for the school year. In this publication, the expressions “pre-service education” or “pre-service training” are used to refer to any structured activity aim at developing or reinforcing knowledge and skills before an educational professional enters the profession or continues to gain professional competence.

in-service training – refers to training of persons already employed, e.g. educators working in the capacities of teachers, administrators, or other educational professionals.

classified staff – refers to hourly employees who are in positions that earn overtime compensation for any hours worked in excess of 40 hours per week. Examples of classified employees are maintenance and custodial employees, cafeteria servers, clerical staff, and certain technicians.

Hybrid Employees – employees that are covered by the Virginia Retirement System Hybrid Plan if they were hired on or after January 1, 2014, have never participated with a VRS or ORP plan, or have cashed out their VRS or ORP account. This plan is comprised of both a defined benefit (DB) portion and a defined contribution (DC) portion. Employees are required to contribute four percent of their annual salary into the DB portion of their retirement account.

Virginia Teaching Scholarship Loan program (VTSL) – the purpose of the Virginia Teaching Scholarship Loan program is to provide financial support to students who are preparing to teach in one of Virginia’s critical shortage teaching areas. The critical shortage teaching areas are determined annually through the Supply and Demand Survey for School Personnel, based on data received by school divisions in Virginia.

locally developed differentiated compensation models – locally designed systems of payment for work based on an individual’s duties prescribed by his or her position and/or his or her performance of those duties.

schools in challenging environments – schools in challenged environments often encounter stressors on families (i.e. work hours, neighborhood conditions, and housing quality) that place obstacles on student learning.

teacher continuing contract status – state law establishes a “continuing contract” for experienced public school teachers. This protects teachers from arbitrary termination between school years, or without notice or opportunity to contest a recommendation to dismiss the teacher for good cause. However, continuing contract is not lifetime tenure. Teaching positions can be eliminated and continuing contracts terminated if student enrollment declines, subjects or classes are eliminated, or school funding is cut.

comprehensive professional learning initiatives – professional development plans for teachers and administrators that address organizational goals as well as individual needs.

innovative pedagogical methods – learning approaches that define in a new way how knowledge is assimilated, produced and used in a manner that can create innovative thinking among student learners.

Funding Public Education

Virginia Standards of Quality – the Constitution of Virginia requires the Board of Education to prescribe standards of quality for the public schools of Virginia, subject to revision only by the General Assembly. These standards, found in the *Code of Virginia* §§ 22.1-253.13:1 through 22.1-253.13:9, are known as the Standards of Quality (SOQ) and encompass the requirements that must be met by all Virginia public schools and divisions.

The recognized costs of meeting these standards are funded primarily on a per student basis for funding categories such as special education, English as a second language, gifted education, funding for basic aid, teacher benefits, and others. Each locality shares responsibility with the state for funding a portion of these SOQ costs based on each locality’s ability to contribute to public education.

rebenchmarking policy – costs that are recognized and funded by the standards of quality funding model are updated every two years through a process known as rebenchmarking. This process is intended to determine the current costs of meeting the minimum standards of quality prescribed by the Constitution of Virginia and General Assembly. Examples of costs that are updated include teacher salaries and fringe benefits, and required ratios of teachers and other staff to serve each student. The updated costs are used to determine the total costs of meeting the Standards of Quality and state funding is adjusted accordingly.

state budget categories – a local school board budget includes accounts for revenues and expenditures involved in the day-to-day operation of the division. Revenues are received from the federal, state, and local governments. Expenditures are budgeted and reported in the Annual Superintendents Report within approved state categories (i.e., instruction, administration, attendance, health, pupil transportation, operations & maintenance, debt service, technology, etc.).

Virginia Preschool Initiative funding formula – the Virginia Preschool Initiative provides programs for at-risk four-year-old children. Funding is distributed based on an allocation formula providing state funding of \$6,000 per student for each unserved at-risk four-year-old (number of funded students). The state provides funding of no more than 50% of this \$6,000 allocation depending on each locality’s ability to contribute to public education as measured by its composite index.

Joint Audit and Review Commission (JLARC) – JLARC is the oversight agency of the Virginia General Assembly, established to evaluate the operations and performance of state agencies and programs. This oversight function includes the SOQ funding model that is used to deliver funding to public education.

Federal Deduct – the state deducts federal revenues from the costs of providing education determined by the Standards of Quality funding model to determine the portion of costs that the state recognizes. The remaining costs are funded by the state and locality based on the locality’s ability to pay these costs.

incentive programs – Optional programs that are funded above and beyond those funded by the Standards of Quality. Incentive programs are voluntary programs, but in order to receive state funds divisions must agree to meet additional requirements, such as certifying they will offer the specific program. Examples include: Governor’s Schools, special education programs, Compensation Supplement.

basic aid funds – the primary source of funding for school divisions that is provided through the Standards of Quality Funding formula.

cap on support staff – the Standards of Quality funding model determines the recognized and ultimately the funded costs of providing education within a locality. The model first determines the recognized cost of meeting the Standards of Quality requirements. There is a cap on the recognized costs of one support staff for every 4.03 instructional positions. The total of these recognized costs is funded partly by the state and partly by the locality.

Literary Loan Program – the Literary Fund is a permanent and perpetual school fund established in the Constitution of Virginia. Revenues to the Literary Fund are derived primarily from criminal fines, fees, and forfeitures, unclaimed and escheated property, unclaimed lottery winnings, and repayments of prior Literary Fund loans. The Literary Fund provides low-interest loans for school construction, grants under the interest rate subsidy program, debt service for technology funding, and support for the state’s share of teacher retirement required by the Standards of Quality.

alternative assessments – legislation in the 2014 General Assembly amended § 22.1-253.13:3.C of the Code of Virginia to eliminate several Standards of Learning (SOL) tests. Each school board shall annually certify that it has provided instruction and administered an alternative assessment, consistent with Board guidelines, to students in grades three through eight in each Standards of Learning subject area in which a Standards of Learning assessment was not administered during the school year.

debt service opportunities – Debt service refers to long-term debt incurred by the local governing body to support school boards’ capital projects. Annual payments are budgeted within either the school board’s or the governing body’s operating budget for the period of time to pay off the debt. Debt service opportunities would be the capacity of the local governing body to incur additional debt, either by policy or within financial resources, for the purpose of funding additional capital projects.

local revenue sharing agreement – Adopted agreement between the governing body and the school board on how locally generated revenue will be allocated between school operations and county/city services. This agreement is optional and can often create a more cooperative tone between the governing body and the school board during budget deliberations.

fiscally independent school boards – School boards that are autonomous in generating local revenue through taxation, in conjunction with federal and state resources, to support school operations.



Appendix B

Research & Resources

Curriculum/Readiness

Applied Knowledge for Career / Higher Education Readiness

Virginia is committed to developing and aligning state curriculum standards, assessments, instruction, and professional development to ensure that every student has the maximum opportunity to be successful. It is no longer sufficient for students to demonstrate competence on standardized tests that measure their ability to succeed in a local economy; it has become paramount for American students to acquire the knowledge, skills, and dispositions that will enable them to successfully enter college, the workforce, and compete across the world. According to a Weldon Cooper Center paper (Carter and Gunter, 2010) workplace skills considered “much more important now” include adaptability, flexibility, critical thinking, problem solving, and information technology application. So-called “noncognitive” skills and dispositions are integral to successful preparation for college and career, and need to be addressed. Kyllonen, Lipnevich, Burrus, & Roberts, (2014). Darling-Hammond, Wilhoit, and Pittenger (2014) state that “our current strategies are not sufficient to ensure that, indeed, every child will be enabled to learn the higher-order skills that they need to acquire to succeed in today’s world. The fuller array of deeper learning outcomes students need to acquire include the skills and dispositions needed to foster critical and creative thinking, problem solving, collaboration, multiple modes of communication, uses of new technologies, the capacity to learn to learn, and the social-emotional intelligence that fosters a growth mindset and supports resilience and resourcefulness” (p. 4). Successfully implementing and assessing these skills requires multiple measures and methods of instruction.

Aligning the revised standards with this broader array of skills enables students to compete and collaborate globally, preparing them for higher education and/or careers. Historically, college and career readiness were defined separately, with students being held to different standards depending on which path they chose. The American College Testing (ACT) program’s influential study, “Ready for College and Ready for Work: Same or Different” showed that all students should be held to a common academic foundation, whether the student plans to attend college or enter the workplace (ACT, 2006, p. 1). Although each student has individual traits that will define their ultimate career path and should be cultivated for each individual student, the revised common Standards of Learning will provide a foundation that crosses disciplines and enables students to perform entry level work in higher education and/or careers when they graduate from high school. “A program of instruction at the secondary school level should therefore be designed to equip all students with the full range of necessary foundational knowledge and skills and help them set high aspirations and identify future interests” (Conley 2014, Page 51). In order to accomplish this, the revised state curriculum must be aligned with effective instruction and assessments that measure what students can and cannot do, in addition to assessments that measure what students do or do not know. Standards of Learning assessments must be combined with different forms of formative and summative assessments, in order to capture and nurture students’ skills.

Resources - Applied Knowledge for Career / Higher Education Readiness

Darling-Hammond, L., & Wentworth, L. (2010). *Benchmarking learning systems: Student performance assessment in international context.* Stanford, CA: Stanford University, Stanford Center for Opportunity Policy in Education. Retrieved from: <http://edpolicy.stanford.edu/sites/default/files/publications/benchmarking-learning-systems.pdf>

High-performing nations integrate curriculum, instruction, and assessment to improve both teaching and learning. As a large and increasing part of their examination systems, they use open-ended performance tasks and school-based assessments to give students opportunities to develop 21st century skills: the abilities to find and organize information to solve problems, frame and conduct investigations, analyze and synthesize data, and apply learning to new situations. This paper illustrates how several nations integrate these assessments into the curriculum to create stronger learning for both students and teachers, resulting in higher and more equitable achievement.

American College Testing (2006). *Ready for College and Ready for Work: Same or Different.* Retrieved from: <http://www.act.org/research/policymakers/pdf/ReadinessBrief.pdf>

Our new finding has important implications for U.S. high school education. It suggests that all high school students should be educated according to a common academic expectation that prepares them for both postsecondary education and the workforce. This means that all students should be ready and have the opportunity to take a rigorous core preparatory program in high school, one that is designed to promote readiness for both college and workforce training programs.

Conley, D. T. (2014). *Getting ready for college, careers and the common core: What every educator needs to know.* San Francisco, CA: Jossey-Bass

The challenge, as laid out in this book, is to get these students more actively involved in thinking about and planning their own futures and then take more ownership of their learning—in essence, taking more control over their lives. (p. 265)

Conley, D. T. & French, E. M. (2014). Student ownership of learning as a key component of college readiness. *American Behavioral Scientist*, 58(8), 1018-1034.

The world that today's young people are entering is one that will continue to change rapidly and that will make demands on them to be true lifelong learners. Their ability to take ownership of their learning will be key to their success not only in school but throughout their lives. (p. 1031)

Darling-Hammond, L., Wilhoit, G., & Pittenger, L. (2014). Accountability for college and career readiness: Developing a new paradigm. *Education Policy Analysis Archives*, 22(86).

The gauge of a new system should be the outcomes it enables. True accountability should allow schools to be both responsible for high-quality professional practice and responsive to students' needs within the context of their families and communities. An effective accountability system should give students, parents, and governments confidence that schools are focused on what matters most and capable of helping each child connect to a productive future. (p. 31)

Kyllonen, P. C., Plpnevich, A. A., Burrus, J. & Roberts, R. D. (2014). Personality, motivation, and college readiness: A prospectus for assessment and development. *ETS Research Report Service*, 2014(1), 1-48.

We review numerous studies showing that personality and motivational factors are related to educational outcomes, from early childhood to adulthood. We discuss various methods for assessing noncognitive factors, ranging from self-assessments to performance tests. We consider data showing that personality and motivation change over time and find that particular interventions have proven successful in changing particular personality facets, leading to increased achievement. In a final section we propose a strategy for implementing a comprehensive psychosocial skills assessment in middle and high school, which would include setting proficiency standards and providing remedial instruction. (p.1)

Expansion of Pre-K Learning Experiences

School readiness for children entering kindergarten has been a key policy initiative for years, with evidence that has established that high-quality preschool programs can improve readiness for school, particularly students at risk of academic failure, and can, if properly implemented, have positive effects on later grade academic performance, placement into special needs categories, grade retention, and later success in life (Barnett, Jung, Youn, & Frede, 2013; Claessens & Enget, 2013). The effect of preschool learning is now needed for all students given the more academic nature of kindergarten. Readiness is achieved by more than teaching knowledge and skills. It is important to embed readiness in what is known about child development, the individual needs of children, and “the social and cultural contexts in which they live” (Brown, p. 555). Stakeholders’ views of school readiness need to be clarified and appropriate follow-through with children from Pre-K programs should be implemented to evaluate the long-term impact of the programs. While Virginia’s Preschool Initiative (VPI) has been successful in targeting some students, it is necessary to expand the availability of high-quality preschool programs so that all students are adequately prepared for kindergarten and beyond.

Finally, VASS recognizes that high-quality preschool programs are needed for all students. It is clear that as the academic emphasis in early grades has increased all students need opportunities to develop readiness skills that will allow them to be successful and not fall behind.

Resources - Expansion of Pre-K Learning Experiences

School readiness.(2014). Richmond, VA: Council on Virginia’s Future. <http://vaperforms.virginia.gov/indicators/education/schoolReadiness.php>

High-quality preschool programs support school readiness. Longitudinal studies of high-quality early childhood programs find increased test scores, decreased rates of being held back a grade in school, and decreased placement in special education among low-income children. Longer-term studies also find increased high school graduation and decreased crime and delinquency rates.

Barnett, W.S., Jung, K., Youn, M-J., & Frede, E. C. (2013). Abbott preschool program longitudinal effects study: Fifth grade follow up. New Brunswick, NJ: National Institute for Early Education Research, Rutgers – The State University of New Jersey. <http://nieer.org/sites/nieer/files/APPLES%205th%20Grade.pdf>

New Jersey’s Abbott Preschool program is of broad national and international interest because the Abbott program provides a model for building a high-quality system of universal pre-K through public-private partnerships that transform the existing system. The program offers high-quality pre-K to all children in 31 New Jersey communities with high levels of poverty and about a quarter of the state’s children. ...The 4th and 5th grade APPLES follow-up finds that Abbott preschool programs increased achievement in Language Arts and Literacy, Math, and Science.

Our estimates indicate that two years of pre-K beginning at age three had larger persistent effects on achievement than did one year of pre-K. The magnitude of the test score gains from one year are equivalent to roughly 10 to 20 percent of the achievement gap between minority and white students. The gains from two years are equivalent to 20 to 40 percent of the achievement gap. ...The Abbott Preschool program also is found to decrease grade retention and special education placement rates. (pp. 1-2)

Barnett, W. S., Carolan, M. E., Squires, J. H., & Brown, C. K. (2013). *The state of preschool 2013: State preschool yearbook*. New Brunswick, NJ: National Institute for Early Education Research.

The 2013 *Yearbook* seeks to improve the public's knowledge and understanding of state efforts to expand the availability of high-quality education to young children in the 21st century. The National Institute for Early Education Research has developed the *State Preschool Yearbook* series to provide information on the availability and quality of services offered through these programs to children at ages three and four and serve as a resource to policymakers and educators seeking to start all young learners on the right foot. (Retrieved from <http://nieer.org/yearbook>)

Brown, C. (2013). Reforming preschool to ready children for academic achievement: A case study of the impact of pre-K reform on the issue of school readiness. *Early Education and Development*, 24, 554-573.

Policymakers' preschool reforms that are to prepare young children for school success have sparked important conversations within the field of early childhood education over how these programs are to ready young children for school. This article presents findings from a case study that examined this issue of school readiness across a collection of pre-K programs. Doing so illustrates how preschool reforms can impact early childhood stakeholders' understanding of school readiness, what it is they do with their students in their programs, and why. (p. 554)

Claessens, A., & Engel, M. (2013). How important is where you start? Early mathematics knowledge and later school success. *Teachers College Record*, 115, 1-29.

We find that early math skills predict reading, math, and science achievement as well as grade retention from kindergarten through eighth grade. Results show that kindergarten math skills in pattern recognition, measurement, and advanced number are most predictive of eighth-grade outcomes overall and for subgroups including students who enter school with low math skills. The importance of these math skills for subsequent achievement increases or is maintained over time. (pp. 1-2)

Assessment

Use of Assessment to Measure and Improve Student Progress

Research has established the importance of the use of assessment to provide diagnostic information that can be used by teachers and students to improve learning (Orland & Anderson, 2013). The important distinction is between what is called "summative" assessment and "formative" assessment. Summative assessment is used to document student learning and is typically standards-based. Formative assessment uses data diagnostically as students learn to identify progress, indicating current status, misconceptions, and misunderstandings that are addressed to move students ahead. This requires assessment data that are actionable, that teachers can use while students learn. Studies show that when data are used in this way, for teacher decision-making, not only is learning improved, instruction can be tailored to the student, depending on what progress has already been made. Research has confirmed that instruction that can be designed to reach students at their current level of understanding or learning rate is most effective in promoting growth. This includes being able to accommodate students with limited English (ELA) and students with disabilities (SPED). The key is having flexibility with administering the right kind of assessment that provides information in a time frame that allows further instruction.

Support for more formative assessment can be provided by the state by making available to teachers diagnostic assessments that can be used when needed to measure student learning and identify weaknesses and strengths, as well as by dissemination of best practices for using alternative assessments.

Resources - Use of Assessment to Measure and Improve Student Progress

Orland, M., & Anderson, J. (2013). *Assessment for learning: What policymakers should know about formative assessment.* San Francisco: WestEd.

Formative assessment results in data-rich classrooms, as skillful teachers, through a variety of interactions with their students, continually elicit information about what students do and do not understand. . . . Teachers provide students with actionable feedback . . . by linking the assessment process directly with the process of teaching and learning in classrooms, formative assessments adds the “balance” to a balanced assessment system in which different measures implemented at different times produce data for different participants in the educational system. (p. 4)

Gordon Commission on the Future of Assessment in Education (2013). A public policy statement. Gordon Commission, Educational Testing Service, Retrieved November 4, 2014, from http://gordoncommission.org/rsc/pdfs/gordon_commission_public_policy_report.pdf

Assessments must fully represent the competencies that the increasingly complex and changing world demands. The best assessments can accelerate the acquisition of these competencies if they guide the actions of teachers and enable students to gauge their progress. To do so, the tasks and activities in the assessments must be models worthy of the attention and energy of teachers and students. The Commission calls on policymakers at all levels to actively promote this badly needed transformation in current assessment practice. . . . Accountability is not the problem. The problem is that other purposes of assessment, such as providing instructionally relevant feedback to teachers and students, get lost when the sole goal of states is to use them to obtain an estimate of how much students have learned in the course of a year. It is critical that the nation’s leaders recognize that there are multiple purposes of assessment and that a better balance must be struck among them. The country must invest in the development of new types of assessments that work together in synergistic ways to effectively accomplish these different purposes. (p. 7)

Use of a Variety of Assessments with Flexible Administration

It is clear that assessment drives instruction and learning, that what is assessed is what is emphasized in the nature of instruction and student outcomes (Wei, Schultz, & Pecheone, 2012). It is imperative that students know how to apply knowledge for critical thinking, decision-making, problem solving, and other analytical tasks. Studies have shown that “alternative” assessments (alternative to current accountability test formats), such as portfolios, performance-based projects, and other more authentic assessments, engage students in constructing products that demonstrate competence. This includes flexibility in how and when ELA and SPED students are assessed, and how students can demonstrate proficiency in content with approved alternative assessments.

Resources: Use of a Variety of Assessments with Flexible Administration

Wei, R. C., Schultz, S. E., & Pecheone, R. (2012). *Performance assessments for learning: The next generation of state assessments.* Palo Alto, CA: Stanford Center for Assessment, Learning, & Equity (SCALE), Stanford University.

Performance-based assessments require students to use high level thinking to perform, create, or produce something with transferable real-world application... Evidence from high-performing schools from across the nation supports the idea that rigorous performance assessments can support students' successful completion of high school and enrollment in college... [our study provides] important insights about the real-world application of research-based principles of formative assessment and how a state initiative can use research-based and educative assessment practices to move teaching and learning forward. (p. 5-7)

Darling-Hammond, L. (Ed.). (2014). *Next generation assessment: moving beyond the bubble test to support 21st century skills*. San Francisco: Jossey-Bass. A Wiley Brand.

In this book noted authors show how performance assessment is needed to support deeper learning, build systems of performance assessment, and summarize experiences of states and other nations that have implemented performance assessment.

Accountability

Use of Multiple Measures of Achievement

Using multiple measures of achievement for accountability has been recommended by many policy experts (Darling-Hammond, Wilhoit, & Pittenger, 2014; Midulecky & Christie, 2014). Their recommendations are based on research that shows both the disadvantages of using a single measure and the advantages of using multiple measures. First, accountability of schools and teachers that focus solely or predominately on student test scores from end-of-year tests has resulted in many unintended negative consequences. Much research has documented these negative effects, such as “test-prep” instruction that results in inflated, invalid test scores, instruction limited to what is covered on tests, cheating, an emphasis on helping “borderline” students, an emphasis on lower-level learning, and disproportionately negative effects on low-performing minority students (Blazer, 2011).

Second, when several measures are used to assess the same or similar academic goals, validity of the conclusions based on the data is enhanced when the findings converge. Not only are mistakes more likely to be avoided by not relying on a single measure (e.g., inappropriate classification), using several measures better accommodates student learning styles and backgrounds, providing fairer results.

Resources - Use of Multiple Measures of Achievement

Blazer, C. (2011). Unintended consequences of high-stakes testing. Information Capsule. Volume 1008. Retrieved from <http://eric.ed.gov/?id=ED536512>.

This Information Capsule reviews research conducted on the unintended consequences of high-stakes testing programs, such as narrowing of the curriculum, higher levels of student test anxiety, and increased pressure on teachers. In addition, high-stakes tests have been found to have a disproportionately negative impact on low-performing, low-income, and minority students. Although the majority of unintended consequences are negative, researchers have found that high-stakes tests have some positive effects on education, including increased teacher professional development, better alignment of instruction with state content standards, more effective remediation programs for low-achieving students, and increased use of data to inform instruction. (p. 1)

Darling-Hammond, L. Wilhoit, G., & Pittenger, L. (2014). Accountability for college and career readiness: Developing a new paradigm. *Education Policy Analysis Archives*, 22(86).<http://epaa.asu.edu/ojs/article/view/1724/1334>

When evaluating schools, multiple measures of student learning can be coupled with other indicators of important education outcomes, such as,

- students' social-emotional competence, responsibility, citizenship, etc.;
- teachers' professional contributions to the professional team and the school as a whole, as well as evidence of individual practice; and
- school graduation rates, attendance, evidence of school climate (through surveys of teachers, students, and parents), rich curriculum opportunities, indicators of college and career readiness, and measures of successful transition to postsecondary learning and work. (p. 8)

Mikulecky, M. & Christie, K. (2014). *Rating states, grading schools: What parents and experts say states should consider to make school accountability systems meaningful*. Denver, CO: Education Commission of the States.

Use of Growth Indicators

The logic of using student growth in learning for accountability has been supported by many, and is logically reasonable. While there is little disagreement about the use of growth indicators, there is much debate about what measures should be used and how results should be analyzed and interpreted. Research on the use of growth measures for accountability, so-called “value-added” modeling, has been extensive. Proponents of growth modeling contend that sophisticated statistical modeling is the most accurate approach for accountability because it “controls” for entering student ability by comparing actual to predicted achievement. However, because this approach relies almost exclusively on single test score indicators and is unable to control for many factors that affect student learning as it occurs during the year (e.g., nonrandom assignment of students to classes, instability from class to class and year to year for the same teacher, student migration, principal support), many researchers contend that the results often lead to inaccurate conclusions, often misclassifying teachers, with deleterious consequences. There is general agreement that the use of statistically complex valued-added indicators based on a single type of measurement needs to carefully consider technical limitations and unintended consequences (Braun, Chudowsky, & Koenig, 2010; Gabriel & Lester, 2013), and is best used with other indicators of progress (Harris, 2011).

Resources - Use of Growth Indicators

Baker, E. L., Barton, P. E., Darling-Hammond, L., Haertel, E., Ladd, H. F., Linn, R. L., Ravitch, D., Rothstein, R., Shavelson, R.J., & Shepard, L. A. (2010). Problems with the use of student test scores to evaluate teachers. EPI Briefing Paper# 278. *Economic Policy Institute*. Retrieved from <http://www.epi.org/publication/bp278/>.

Berliner, D. C. (2014). Exogenous variables and value-added assessments: A fatal flaw. *Teachers College Record*, 116(1), 1-31.

I conclude that value-added assessments do not now and may never be stable enough to be used in evaluating teachers.” (p. 1)

Braun, H., Chudowsky, N., & Koenig, J. (2010). *Getting value out of value-added: Report of a workshop*. Washington, DC: Center for Education, Division of Behavioral and Social Science Education, National Research Council and National Academy of Education, The National Academies Press.

Value-added methods involve complex statistical models applied to test data of varying quality.

Accordingly, there are many technical challenges to ascertaining the degree to which the output of these models provides the desired estimates. Despite a substantial amount of research over the last decade and a half, overcoming these challenges has proven to be very difficult. (p. xii)

Darling-Hammond, L., Amrein-Beardsley, A., Haertel, E. H., & Rothstein, J. (2011). Getting teacher evaluation right: A background paper for policy makers. *National Academy of Education & American Educational Research Association*. Retrieved from http://www.aera.net/Portals/38/docs/News_Media/AERABriefings/Hill%20Brief%20-%20Teacher%20Eval%202011/

With respect to value-added measures ... current research suggests that high-stakes, individual level decisions, as well as comparisons across highly dissimilar schools or student populations, should be avoided....such measures should only be used in a low-stakes fashion.” (p. 10)

Gabriel, R., & Lester, J. N. (2013). Sentinels guarding the grail: Value-added measurement and the question for educational reform. *Education Policy Analysis Archives*, 21(9), <http://epaa.asu.edu/ojs/article/view/1165/1045>

We argue that the absence of a single, monolithic explanation of the effectiveness in teaching makes a single, accurate, and objective tool for measuring it part of the realm of science fiction, rather than reality ... Methodological concerns do not support the use of VAM to generate individual teacher effect scores annually. (p. 21)

Harris, D. (2011). *Value-added measures in education: What every educator needs to know*. Cambridge, MA: Harvard Education Press.

Use of Varied Measures

Students' academic performance, as measured by conventional testing, provides a single view of learning. To promote the development of all important learning goals, especially those related to college and career readiness skills, researchers and policy makers have proposed using alternative measures, such as authentic performance tasks, performance-based assessments, projects, and other tasks that more closely resemble what students will actually have to do and what dispositions they need to perform those skills (Darling-Hammond, Wilhoit, & Pittenger, 2014). In addition, multiple measures provide a more accurate overall message for policy makers and the public. A recent, extensive review by the Education Commission of the States (Midulecky & Christie, 2014) of school report cards identifies elements that need to be considered so that the reports are clearly understood and actionable. Essential components included aligning indicators with causes and interventions, using growth measures of academic growth, achievement gap closure, and the use of multiple measures of college and career readiness.

Resources - Use of Varied Measures

Baker, E. L., Barton, P. E., Darling-Hammond, L., Haertel, E., Ladd, H. F., Linn, R. L., Ravitch, D., Rothstein, R., Shavelson, R.J., & Shepard, L. A. (2010). Problems with the use of student test scores to evaluate teachers. EPI Briefing Paper# 278. *Economic Policy Institute*. Retrieved from <http://www.epi.org/publication/bp278/>.

Although standardized test scores of students are one piece of information for school leaders to use to make judgments about teacher effectiveness, such scores should be only a part of an overall comprehensive evaluation... Any sound evaluation will necessarily involve a balancing of many factors that provide a more accurate view of what teachers in fact do in the classroom and how that contributes to student learning. (pp. 1-2)

Darling-Hammond, L. Wilhoit, G., & Pittenger, L. (2014). Accountability for college and career readiness: Developing a new paradigm. *Education Policy Analysis Archives*, 22(86). <http://epaa.asu.edu/ojs/article/view/1724/1334>

It is also clear that our current strategies are not sufficient to ensure that, indeed, every child will be enabled to learn the higher-order skills that they need to acquire to succeed in today's world. The fuller array of deeper learning outcomes students need to acquire include the knowledge, multiple modes of communications, uses of new technology, the capacity to learn to learn, and the social-emotional intelligence that fosters a growth mindset and supports resilience and resourcefulness. (p. 4).

Ehren, M. C. M., & Hatch, T. (2013). Responses of schools to accountability systems using multiple measures: The case of New York City elementary schools. *Educational Assessment, Evaluation, and Accountability*, 25, 341-373.

Several scholars therefore express the need for multiple measures in accountability systems to hold schools to account for broader goals and prevent fixation of schools on a small number of quantifiable indicators... These multiple measures may include cognitive outcome measures, noncognitive outcome measures, and other direct measures of educational practices. These multiple measures are expected to motivate schools to focus on a broader set of goals and to better connect to concerns such as student engagement in learning and instructional quality ... to mitigate undue influence of single measures. (p. 342).

Mikulecky, M. & Christie, K. (2014). *Rating states, grading schools: What parents and experts say states should consider to make school accountability systems meaningful*. Denver, CO: Education Commission of the States.

Instructional Delivery

There is considerable research that has documented evidence-based best instructional practices. The challenge is providing support, resources, and professional development to enable teachers and school leaders to be able to use these practices in instruction.

Flexible School Scheduling

Flexible school scheduling includes both calendar and number of days of instruction as well as adaptability to how individual school days are supported. Schools structure the 180-day school year in a number of ways. Most districts conduct the school year from fall to spring, with an 8-10 week summer break, while a small number of districts and individual schools within districts break the school year up into quarters (year-round schooling). In Virginia, approximately half of the school districts begin the school year prior to Labor Day. While some countries with a longer school year show higher student achievement on international tests (e.g., Japan, Germany and New Zealand average 197 days), the research on American schools has shown that only targeted increased instructional time using certified teachers is effective for improving student achievement, particularly for low achieving students (Kidron & Lindsay, 2014). Evidence is available to show how increased learning time can improve both academic and social-emotional outcomes, but programs need to be tailored to the needs, resources, and circumstances of individual school divisions.

Resources – Flexible School Scheduling

Kidron, Y., and Lindsay, J. (2014). The effects of increased learning time on student academic and nonacademic outcomes: Findings from a meta-analytic review (REL 2014–015). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Appalachia. Retrieved from <http://ies.ed.gov/ncee/edlabs>

This report summarizes a review of rigorous research studies on increased learning time. Findings across studies have been combined using meta-analysis techniques.

- Increased learning time programs improved literacy and math achievement when instruction was led by certified teachers, though the effects were small.
- Effects varied by type of instruction. Programs that used a traditional instruction style improved literacy and math achievement. Programs that used an experiential learning instruction style improved student social-emotional skills. In both cases the effects were small.
- Increased learning time improved the literacy achievement of students performing below standards and the social-emotional skills of students with attention deficit/hyperactivity disorder. (p. 1)

Patall, E. A., Cooper, H., & Allen, A. B. (2010). Extending the school day or school year: A systematic review of research (1985-2009). *Review of Educational Research, 80*, 401-436. After a comprehensive search of the literature, 15 empirical studies of various designs conducted since 1985 were found. The literature revealed that (a) designs are generally weak for making causal inferences and (b) outcomes other than achievement are scarcely studied.

That said, findings suggest that extending school time can be an effective way to support student learning, particularly (a) for students most at risk of school failure and (b) when considerations are made for how time is used. Of note, the strongest research designs produced the most consistent positive results. (p. 401)

Griffith, M. (2011). What savings are produced by moving to a four-day school week? Denver, CO: Education Commission of the States. Retrieved from <http://www.ecs.org/clearinghouse/93/69/9369.pdf>.

Due to the current economic downturn, policymakers have been looking for budgetary options that allow for reductions in expenditures without impacting student achievement. One cost-cutting policy that some states and districts have adopted is to keep instructional time the same but shorten the school week. A recent policy brief from ECS found that approximately 120 districts in 17 states have made the move to a four-day school week. But the question still exists — what cost savings, if any, are produced? This report shows what savings a district might realistically expect to realize when moving to a four-day week.

Dixon, A. (2011). Focus on the alternative school calendar: Year-round school programs and update on the four-day school week. Atlanta, GA: Southern Regional Education Board. Retrieved from http://publications.sreb.org/2011/11S01_Alt_Cal.pdf.

Because of the unique characteristics of school districts, it is impossible to produce a cost savings estimate applicable to all schools. However, using national finance data supported by information from individual districts, ECS has determined that the average district could produce a maximum savings of 5.43% of its total budget by moving to a four-day week. In addition, it was found that districts that moved to a four-day week have experienced actual savings of only between 0.4% and 2.5%. While these savings might seem small, they have often proved large enough for districts to make the move and reduce their school week by one day.

Virtual and Blended Instruction

The research is clear that online and blended learning, as well as other digital learning tools (e.g., social network learning, mobile device learning), can be as effective or more effective in promoting student learning than face-to-face instruction alone. Studies suggest that the advantages of online and blended learning are considerable when effectively implemented, and that adequate support for

virtual and blended learning programs is needed. Online and blended/hybrid instruction courses can potentially reduce the cost of instruction while raising student achievement. A recent comprehensive meta-analysis of research literature found that online and blended/hybrid instruction are at least as effective as, and in some cases more effective than, traditional, face-to-face instruction (Means, Yoyama, Murphy, & Baki, 2013). This research suggests that the advantages of online and blended learning are considerable when effectively implemented, and that adequate support for virtual and blended learning programs is needed. Many studies indicate that without adequate resources, infrastructure, support, and professional development, virtual and blended instruction is more of a promise than reality. Technology needs must be carefully and comprehensively identified and addressed for all schools.

Resources - Virtual and Blended Instruction

Means, B., Toyama, Y., Murphy, R., & Baki, M. (2013). The effectiveness of online and blended learning: A meta-analysis of the empirical literature. *Teachers College Record*, 115(6), 1-29.

The corpus of 50 effect sizes extracted from 45 studies meeting meta-analysis inclusion criteria was sufficient to demonstrate that in recent applications, purely online learning has been equivalent to face-to-face instruction in effectiveness, and blended approaches have been more effective than instruction offered entirely in face-to-face mode. The test for homogeneity of effects found significant variability in the effect sizes for the different online learning studies, justifying a search for moderator variables that could explain the differences in outcomes. The moderator variable analysis found only three moderators significant ... Effects were larger when a blended rather than a purely online condition was compared with face-to-face instruction; when the online pedagogy was expository or collaborative rather than independent in nature; and when the curricular materials and instruction varied between the online and face-to-face conditions. This pattern of significant moderator variables is consistent with the interpretation that the advantage of online conditions in these recent studies stems from aspects of the treatment conditions other than the use of the Internet for delivery per se. (p. 1)

Whitehead, B. M., Kemsem, D./ F. N., & Boschee, F. (2013). *Planning for technology: A guide for school administrators, technology coordinators, and curriculum leaders* (2nd ed.), Thousand Oaks, CA: Corwin.

The role and use of newly emerging technologies has had a massive impact on changing how learning happens. We have shifted to concepts like mobile learning, digital learning, social network learning, and BYOD (Bring Your Own Device). To enhance ... excellence, current and future school leaders need an all-encompassing vision of how technology can help transform teaching and learning at all levels. (p. x)

Personalized Learning

Personalized learning is the latest among several initiatives, including differentiated instruction, tiered instruction, Response to Intervention, and learning progressions, that research supports as a promising approach to be able to customize instruction to meet the learning needs of each student (Childress & Benson, 2014). Fundamental to these models of instruction is the contention that student learning experiences need to be tailored not only to readiness and learning styles, but also to interests and levels of engagement, effectively differentiated to accelerate learning along a continuum of proficiency leading to more sophisticated understanding and enhanced skills. This approach is able to keep all students motivated, even in mixed-ability classrooms (Huebner, 2010), by providing grouping, individualized assignments, and increased instructional interventions as needed. For students who may struggle with learning, personalized learning such as Response to Intervention can be implemented to provide services of increasing instructional attention and intensity. This approach is especially important for Pre-K learning to ensure adequate readiness.

Accelerated learning is ideal for higher-ability students.

With personalized learning, assessment is used in an ongoing manner to provide feedback to teachers and students about what has been learned, what further learning is needed, and what instruction will facilitate achievement. As summarized in the Assessment section, so-called formative assessment has a strong research base that shows how such ongoing, integrated and targeted assessment improves student learning and motivation.

Resources – Personalized Learning

Childress, S., & Benson, S. (2014). Personalized learning for every student every day. *Phi Delta Kappan*, 95(8), 33-38.

Personalized learning must be held to a high standard of evidence about what works and what doesn't. With Gates foundation support, the RAND Corporation is addressing five research questions in a multiyear study that currently includes more than 40 personalized learning schools... Over the next few years this study will generate rich information about personalized learning schools... In the meantime, we're seeing early evidence that personalized learning approaches have the potential to not only accelerate student learning but also to give young people the skills to navigate their own learning. (p. 38)

Colangelo, N., Assouline, S. G., Marron, M. A., Castellano, J. A., Clinkenbeard, P. R., Rogers, K., Calvert, E., Malek, R., & Smith, D. (2010). Guidelines for developing an academic acceleration policy. *Journal of Advanced Academics*, 21(2), 180-203.

As an educational intervention, academic acceleration is decidedly effective for high-ability students. The research support for acceleration that has accumulated over many decades is robust and consistent and allows us to confidently state that carefully planned acceleration decisions are successful. Both grade-based and content-based acceleration are effective interventions in academic and social-emotional domains for high-ability students. (p. 180)

Huebner, T. A. (2010). Differentiated instruction. *Educational Leadership*, 67(5), 79-81. Although experts and practitioners acknowledge that the research on differentiated instruction as a specific practice is limited ... solid research does validate a number of practices that provide the foundation of differentiation. These practices include using effective classroom management procedures; promoting student engagement and motivation; assessing student readiness; responding to learning styles; grouping students for instruction; and teaching to the student's zone of proximal development (the distance between what a learner can demonstrate without assistance and what the learner can do with assistance) ... Moreover, a growing body of research shows positive results for full implementation of differentiated instruction in mixed-ability classrooms. (p. 79)

Missett, T. C., Brunner, M. M., Callahan, C. M., Moon, T. R., & Azano, A. P. (2014). Exploring teacher beliefs and use of acceleration, ability grouping, and formative assessment, *Journal for the Education of the Gifted*, 37(3), 245-268.

Few academic interventions for gifted students have generated more empirical support than acceleration and ability grouping, and formative assessment is advocated as a tool that educators can use to appropriately integrate accelerative practices and ability grouping into the classroom... This qualitative study sought to explore how teacher expectations about student ability influenced teacher use of accelerative practices, ability grouping, and formative assessment. The findings indicate that the availability and use of formative assessments, coupled with high teacher expectations about student ability, support teacher use of best practices in pacing and grouping strategies. (p. 245)

High Quality Professional Development

The quality of instruction provided to students is directly and significantly related to the expertise of teachers, which in turn depends on how well teachers continue to grow and improve their instructional skills. Research has established that, in general, effective professional development is characterized by a strong content focus, alignment with curriculum standards and school policies, and the use of collaborative teams. With recent attention on the use of student test score data and indicators of student growth, the current need is to effectively integrate teacher evaluation systems with professional development focused on data literacy. Much like instruction should be personalized for students, professional development should be tailored to the needs of individual teachers. This suggests that professional development needs to be focused on individual teacher self-reflection, renewal, and growth. With electronic advancements, including online resources and virtual learning communities, it is now possible to meet individual needs with computer-mediated content that is accessible and convenient. Models for such professional development are now emerging; the pace of adopting such an approach needs to be supported. Virtual learning communities provide an effective method of delivery that combine individualization, electronic resources, and collaboration. Similar to professional learning communities, which research suggests are effective for professional development, virtual learning communities have great potential for expanding professional networks by exposing teachers in a non-threatening manner to new ways of thinking and improving their instructional skills.

Resources - High Quality Professional Development

Twining, P., Raffaghelli, J., Albion, P., & Knezek, D. (2013). Moving education into the digital age: The contribution of teachers' professional development. *Journal of Computer Assisted Learning*, 29(5), 426-437.

Rapid developments in IT continue to affect both discipline knowledge and pedagogical possibilities in ways that must influence teachers' professional learning for employing IT as a constituent part of learning experiences rather than as a specific topic. The resultant changes in pedagogy often align better with new understandings of how education could move into the digital age. (p.434)

Ruzek, E. A., Hafen, C. A., Hamre, B. K., & Pianta, R. C. (2014). Combining classroom observations and value added for the evaluation and professional development of teachers. In T. J. Kane, K. A. Kerr, and R. C. Pianta (eds.). *Designing teacher evaluation systems: New guidance from the Measures of Effective Teaching Project*. (pp. 205-233). San Francisco: Jossey-Bass, John Wiley & Sons, Inc.

School district administrators and state officials are faced with the challenging task of creating teacher evaluation systems that distribute teachers across a continuum of effectiveness and provide comprehensive and actionable information.

We contend that these systems must incorporate both observational measures of instruction and measures of student achievement gains that are attributable to teachers (value added). Using value-added data and scores on the Classroom Assessment Scoring System (CLASS) from the first year of the MET project, we present four strategies that districts might employ to create categories of teacher effectiveness. We consider the implications of each strategy on teacher evaluation and the allocation of professional development resources for the continued improvement of classroom instruction and student learning. (p.205)

McConnell, T. J.; Parker, J. M.; Eberhardt, J.; Koehler, M. J.; Lundeberg, M. A. (2013). Virtual professional learning communities: Teachers' perceptions of virtual versus face-to-face professional development. *Journal of Science Education and Technology*, 22(3), 267-277.

Research suggests that professional development that engages teachers in instructional inquiry over an extended time through collaborative professional learning communities (PLCs) is effective in improving instruction and student achievement. ... With help from a facilitator, [Virtual PLC] groups developed a relationship similar to other groups meeting face-to-face as part of the same professional development program... The findings suggest that teachers perceive videoconferencing as an effective tool for facilitating PLCs when distance and time are practical barriers to face-to-face meetings. Practical considerations for developing and facilitating virtual PLCs are also discussed. (p. 267).

Mandinach, E. B. (2012). A perfect time for data use: Using data-driven decision making to inform practice. *Educational Psychologist*, 47(2), 71-85.

As previously noted, the use of data by educators is not new. Teachers and administrators have been using data for a long time. Teachers have been accumulating all sorts of data about their students, typically in less than systematic ways over time. That said, there is a growing recognition that the use of data to inform practice must be systematized and enculturated. Teachers need to integrate data and experience to inform their practice. Just as patients expect their physicians to use data from which to make medical diagnoses, so too should educators be expected to use concrete evidence from which to determine instructional or administrative actions. (p. 74)

Human Capital

Improve Recruitment and Retention

Both recruitment of new teachers and retention of current teachers (either within a specific school or within the profession in general) are challenges to developing an effective teacher workforce, particularly in our high-stakes testing environment. There are many motivating factors for teachers who choose to change schools or professions, including salary (Ingersoll and Perda, 2009). For teachers who remain in the profession, again salary is one of many motivators, but often not the main motivator (Adamson & Darling-Hammond, 2011). Further, some researchers argue that the overall incentive structure for educators is “fragmented and uncoordinated,” resulting in piecemeal policies that may not systematically form a coherent plan for salaries and benefits (Podgursky and Springer, 2011). However, recent research suggests that salary can be an effective motivator (Henry, Bastian, & Smith, 2012). This issue needs further study.

Resources – Improve Recruitment and Retention

Adamson, F. & Darling-Hammond, L. (2011). Addressing the inequitable distribution of teachers: What it will take to get qualified, effective teachers in all communities? Stanford Center for Opportunity Policy in Education. Retrieved from: http://www.warreninstitute3.org/images/download/053112_Addresssing-the-Inequitable-Distribution-of-Teachers.pdf

Increases in teacher wages have been found in several studies to be associated with increased student achievement—presumably because more capable teachers can be recruited and retained. (p.5)

Henry, G. T., Bastian, K. C., & Smith, A. A. (2012). Scholarships to recruit the “Best and brightest” into teaching: Who is recruited, where do they teach, how effective are they, and how long do they stay? *Educational Researcher* 41(83), 83-90.

Competitive scholarships attract individuals with significantly higher academic credentials into the teaching profession. ... Teachers who received the merit-based scholarships remained teaching in public schools for five years or longer at significantly higher rates than other teachers. (p.90)

Ingersoll, R.M., and Perda, D. (2009). The mathematics and science teacher shortage: Fact and myth. CPRE Research Report #RR-62 The Consortium for Policy Research in Education. Retrieved July 19, 2011 from <https://www.csun.edu/science/courses/710/bibliography/math%20science%20shortage%20paper%20march%202009%20final.pdf>.

The objective of this study is to empirically reexamine the issue of mathematics and science teacher shortages and to evaluate the extent to which there is a supply-side deficit—a shortage—of new teachers in these particular fields. The data utilized in this investigation are from three sources—the Schools and Staffing Survey and its supplement, the Teacher Follow-Up Survey; the Integrated Postsecondary Educational Data System; and the Baccalaureate and Beyond Survey, all conducted by the National Center for Education Statistics.

The data show that there are indeed widespread school staffing problems—that is, many schools experience difficulties filling their classrooms with qualified candidates, especially in the fields of math and science. But, contrary to conventional wisdom, the data also show that these school staffing problems are not solely, or even primarily, due to shortages in the sense that too few new mathematics and science teachers are produced each year.

Podgursky, M., and Springer, M. (2011). Teacher compensation systems in the United States K-12 public school system, *National Tax Journal*, 64 (1), 165–192. Retrieved July 19, 2011 from [http://ntj.tax.org/wwtax/ntjrec.nsf/009a9a91c225e83d852567ed006212d8/a03692bdaadff66f8525784e007713ce/\\$FILE/A07-Springer.pdf](http://ntj.tax.org/wwtax/ntjrec.nsf/009a9a91c225e83d852567ed006212d8/a03692bdaadff66f8525784e007713ce/$FILE/A07-Springer.pdf).

This paper provides a review of the current teacher compensation system and examines the structure of teacher compensation in the U.S. K-12 public education system. Teachers salaries are largely set by schedules that are neither performance-related nor market-driven, and have significant consequences on school staffing and workforce quality. The second section summarizes the recent literature on compensation reform, with an emphasis on studies using experimental or quasi-experimental designs to evaluate the impact of programs on student achievement and teacher outcomes. A final section offers observations on prospects for future research and reforms.

Shields, R. A. & Lewis, C. (2012). Rethinking the value proposition to improve teaching effectiveness. *Education Resource Strategies*. Retrieved from: <http://www.erstrategies.org/cms/files/1378-value-proposition.pdf>

Not only does getting compensation right contribute to attracting, retaining, and motivating a high-performing workforce, it may also spur higher performance. Daniel Pink in *Drive* suggests that, “Effective organizations compensate people in amounts and in ways that allow individuals to mostly forget about compensation and instead focus on the work itself.” He asserts that not getting it right keeps compensation front and center and inhibits creativity, ultimately unraveling performance. (p. 6)

Improve Teacher, Administrator, and Classified Staff Performance

Improvement of the performance of teachers, administrators, and classified staff is best supported by an evaluation system that recognizes and rewards meritorious performance. Research has confirmed that effective evaluation includes multiple indicators across time (Darling-Hammond, 2014). A recent study of teacher evaluation in Chicago schools found that it is critical to use results to identify weaknesses but also to help transform weaknesses into strengths (White, Cowhy, Stevens, & Spote, 2012). This study also found that evaluator capacity to provide assistance was important to receiving actionable feedback. Research suggests that student performance can

and should be used as part of a set of criteria for teacher evaluation, and to a lesser extent, for administrators and other staff (Darling-Hammond, 2013). While the Education Commission of the States (2010) concludes that using merit pay as incentives for teachers is not well researched, there is sufficient evidence of positive use of this approach that further study and pilot programs are warranted.

Resources - Improve Teacher, Administrator, and Classified Staff Performance

Darling-Hammond, L. (2013). Getting teacher evaluation right: What really matters for effectiveness and improvement. New York: Teachers College Press.

We should think about teacher evaluation as part of a teaching and learning system that creates a set of coherent, well-grounded supports for strong teaching throughout the profession.... This system should include five key elements:

1. Common statewide standards for teaching that are related to meaningful student learning and are shared across the profession;
2. Performance-based assessments, based on these standards, guiding state functions, such as teacher preparation, licensure, and advanced certification;
3. Local evaluation systems aligned to the same standards, for evaluating on-the-job teaching based on multiple measures of teaching practice and student learning;
4. Aligned professional learning opportunities that support the improvement of teachers and teaching quality; and
5. Support structures to ensure properly trained evaluators, mentoring for teachers who need additional assistance, and fair and timely decisions about personnel actions. (pp. vii-viii)

The currently touted strategy of using value-added methods to calculate student test score gains attached to individual teachers has been found to be far less reliable and accurate than many researchers hoped and most policymakers have assumed. Other strategies that use multiple sources of evidence about student learning are essential to get a fair gauge on what a teacher has accomplished with his or her students. (pp. viii-ix)

Darling-Hammond, L. (2014). One piece of the whole: Teacher evaluation as part of a comprehensive system for teaching and learning. *American Educator*, 38(1), 4-13, 44.

Criteria for an Effective Teacher Evaluation System

- Teacher evaluation should be based on professional teaching standards.
- Evaluations should include multifaceted evidence of teacher practice, student learning, and professional contributions.
- Evaluators should be knowledgeable about instruction and well trained in the evaluation system.
- Evaluation should be accompanied by useful feedback, and connected to professional development opportunities.
- The evaluation system should value and encourage teacher collaboration.
- Expert teachers should be part of the assistance and review process.
- Panels of teachers and administrators should oversee the evaluation process. (p. 12)

Education Commission of the States. (2010). Teacher merit pay: What do we know?, *The Progress of Education Reform*, 11, 1-4. Retrieved July 19, 2011 from <http://ecs.org/clearinghouse/86/40/8640.pdf>.

Merit pay programs for educators — sometimes referred to a “pay for performance”— attempt to tie a teacher’s compensation to his/her performance in the classroom. While the idea of merit pay for classroom teachers has been around for several decades, only now is it starting to be implemented in a growing number of districts around

the country. One example of the increased interest for merit pay systems can be seen in the recent increased funding level for the federal Teacher Incentive Fund (TIF). The TIF program, which is run through the United States Department of Education (USDOE), provides funding to school districts to help them implement merit pay systems. The USDOE has increased funding for the TIF program this year by more than four-fold — from \$97.3 million to \$437 million. But with all of this increased interest and funding for merit pay programs — what if anything do we know about the costs versus the benefits of these systems?

White, B. R. , Cowhy, J., Stevens, W. D., & Sporte, S. E. (2012). Designing and implementing the next generation of teacher evaluation systems: Lessons learned from case studies in five Illinois Districts. Chicago: The University of Chicago Consortium on Chicago School Research. www.siue.edu/ierc/pdf/2012_Teacher_Evaluation_Policy_Brief1.pdf
The majority of teachers and principals ... were accepting of the fact that linking student growth to teacher evaluation was imminent, Thus, they were more concerned about the strategies and supports that would be put in place accompanying these systems in order to overcome these perceived weaknesses and make the growth component as fair and formative as possible. Teachers throughout the case study districts advocated using multiple measures to evaluate student growth, including student portfolios, teacher-created curriculum-specific assessments, and locally normed assessments, along with standardized, nationally normed tests. (p. 20)

Provide Professional Development Support

Successful professional development is directly related to high quality, multi-faceted teacher evaluation. Feedback from a variety of sources is important, so that teachers and administrators can understand in which areas they need to focus for improvement. As Virginia's Standards of Learning are unique, it is important that Virginia develop its own professional development opportunities, in collaboration with Virginia colleges and universities, to support the improvement and success of its teachers. Professional development needs to be personalized, with adequate technical resources (see Instructional Delivery section).

Resources - Provide Professional Development Support

Darling-Hammond, L. (2013). Getting teacher evaluation right: What really matters for effectiveness and improvement. New York: Teachers College Press.

Four features of professional development that pay off:

- Professional development should be intensive, ongoing, and connected to practice.
 - Professional development should focus on teaching and learning of specific academic content.
 - Professional development should be connected to other school initiatives.
 - Professional development should build strong working relationships among teachers.
- (pp. 102-105)

Darling-Hammond, L. (2014). One piece of the whole: Teacher evaluation as part of a comprehensive system for teaching and learning. *American Educator*, 38(1), 4-13, 44.
Despite the current focus on in-service evaluation, a highly skilled teaching force results from developing well-prepared teachers from recruitment through preparation via ongoing professional development. (p. 6)

Also see Instructional Delivery section for resources.