

Testimony
2014 Joint Legislative Hearing
Elementary and Secondary Education Committee
Craig Apple, Sheriff, Albany County
F. Michael Tucker, President, Center for Economic Growth
Michael Hall, Major General (Ret.), Air Force
January 28, 2014



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Thank you, Members of the Committee, for giving us the opportunity to testify today.

We are members of Fight Crime: Invest in Kids, America's Edge, and Mission: Readiness—a family of organizations known as Council for a Strong America that leverage the voices of unique and often unexpected messengers in support of proven investments in children.

I am Albany County Sheriff Craig Apple and I am a member of Fight Crime: Invest in Kids, with a membership of more than 260 law enforcement leaders and crime survivors across the State. I am here today to talk about Pre-K and afterschool programs.

We thank policymakers for elevating these issues. Programs have long been underfunded and fail to serve a majority of children. It is time to commit adequate resources to both initiatives and provide access to high-quality programs to all children in this State—especially those most at-risk.

The Pre-K-crime connection is simple: pay now or pay later. We currently spend \$2.8 billion a year on the incarceration of about 66,000 people. A solid investment in Pre-K would lead to better performance in school, fewer high school dropouts and, ultimately, fewer crimes committed and a reduction in the number of prisoners. **While we applaud the Governor for his commitment to universal, full-day, high-quality Pre-K, his proposed \$100M investment for the first year of implementation falls short of our Executive Budget request of \$225M. We ask**

for at least \$225M from the State, to support local districts to add new high-quality, full-day Pre-K seats.

The same holds true for afterschool. A real investment will make a big difference in the lives of thousands of children, who will find stability and skill-building in high-quality programs. **We are asking for an investment of \$9M in a quality infrastructure in 2014-15, in preparation for five years of investment beginning with \$160M in 2015-16.**

That's the key—these programs must be high-quality and we must invest the appropriate resources in them to ensure this. As my colleague Mike Tucker will tell you, businesses understand quality and we must insist on it for our children.

I am Mike Tucker, President of the Center for Economic Growth. I am also a member of America's Edge, a group of 150 business leaders across New York State. As Sheriff Apple said, businesses work hard to provide quality products. And any investment in early learning—whether it's in Pre-K or child care—must ensure the highest quality. If it does not, we not only do our children a disservice, but we will not receive a suitable return on investment.

That return is \$1.86 for every \$1 spent in the early learning sector—more than the revenues from construction (\$1.86), retail trade (\$1.83), manufacturing (\$1.72), transportation (\$1.72) and utilities (\$1.53). And that's money that stays in local communities. I urge you to keep that in mind as you work with your colleagues on economic development strategies across the State.

In addition to early learning, I am here today to talk about business leaders' commitment to models along the education continuum that help students develop the skills needed in the private sector while also increasing student engagement, graduation rates, and enrollment in post-secondary training and education.

Seven in 10 new jobs created in New York between 2008 and 2018 will require some type of formal education beyond high school. Fourteen of the 25 fastest growing occupations in our State will require post-secondary education. We will face a deficit of 350,000 mid-level skilled workers if current education and labor market trends continue.

We believe that in order to close this skills gap, New York State should continue to invest in models that strengthen communication, collaboration, and critical thinking skills and promote college- and career-readiness—like the Common Core.

While we agree that implementation has not been perfect, we believe we must stay the course and work to implement these higher standards. We are very willing to lend our expertise to policymakers interested in effective implementation of the Common Core, in order to ensure that children are well-prepared for the challenges and demands of employment in the 21st century.

I know that General Hall can speak to those demands, as well.

Thank you, Mike. I am Major General Mike Hall, a member of Mission: Readiness, retired admirals and generals dedicated to ensuring the success of our young people.

Let me pick up on Mike's remarks about the Common Core first and then circle back to Pre-K.

While there are other major disqualifying factors – including being overweight and having a criminal record –poor educational achievement is one of the biggest reasons why an estimated 75 percent of all young Americans are unable to join the military.¹ Even among those who graduate from high school, in New York, 21 percent of those seeking to enlist in the Army cannot join because of low scores on the military's entrance exam for math, literacy and problem solving.

For years, each state has had its own particular educational standards and tests to assess student achievement. As a result, there is a lot of confusion about how students are doing. The military has no objective way to compare applicants from different states and has to use its own assessment. Also, for children in military families, frequent moves can be unnecessarily complicated by variations in school standards across different locations, negatively affecting their academic experience. Many non-military children are also mobile and can be negatively affected by this variation: more than 2.5 million children moved out of their home counties in 2011 and at-risk children (poor, those in single-parent families) are more likely to have frequent moves.ⁱⁱ

That is why the Department of Defense Education Activity, along with 45 states, the District of Columbia, and four U.S. territories has adopted the Common Core.

Whether students choose to go into the military or not, they need to be prepared for whatever they do upon graduation. But not having enough young people educationally fit to serve—this is, in fact, a threat to national security.

And they are unprepared for success in school and in life early on—which brings me back to the importance of Pre-K. High-quality early learning programs can help reverse all three of the primary disqualifiers to military service—obesity, criminality, and lack of education. And again, whether they ultimately choose to serve or not, Pre-K helps close the achievement gap and prepares children for productive lives.

On behalf of Sheriff Apple and Mr. Tucker and our collective member organizations, I thank you for the opportunity to testify today and look forward to New York State moving forward and providing high-quality educational programs to all children. Our organizations stand in support of the Believe in Children Campaign's budget request, which includes funding for child care, and is attached to our testimony.

ⁱ Gilroy, C. (March 3, 2009). Prepared statement of Dr. Curtis Gilroy, director of accession policy in the Office of the Under Secretary of Defense for Personnel & Readiness. Before the House Armed Services Personnel Subcommittee "Recruiting, Retention and End of Strength Overview."

ⁱⁱ Murphey, D., Bandy, T., & Moore, K. A. (2012, January). *Frequent residential mobility and young children's well-being*. Retrieved from: <http://childtrends.org/wp-content/uploads/2013/06/2012-02ResidentialMobility.pdf>

Believe in Children Campaign

A Call for Universal Child Care, Pre-Kindergarten, and Afterschool

"...we believe in children, we believe in Pre-K, we believe in education, let's put our money where our mouth is and let's make it a reality." –Governor Andrew Cuomo

Providing equal opportunity for all New York's children requires ensuring that they have access to a continuum of high-quality services that support their learning and development and meet the needs of diverse families. Building a comprehensive system, of which these investments are a critical part, will better serve children and families, streamline regulations, reduce costs, and result in a significant economic return on investment.

The achievement gap starts with differences in the quality of affordable child care, grows depending on access to Pre-Kindergarten, and continues to grow through a lack of access to afterschool enrichment and summer learning opportunities. Research has found that high-quality programs can significantly narrow the gap at each stage of a child's life, and that children need consistent access to such programs to continue making these gains. Establishing universal access, from birth through high school, to places where children can be safe and learn will put all our children on the right track for success in college, career, and life.

Governor Cuomo has called for five years of sustained investment in Pre-Kindergarten and afterschool. Building on his proposal, and the work of the Assembly and Senate on child care, we propose:

Universal Child Care: Invest \$182 million in child care subsidies in 2014-15, serving more than 25,000 additional children. Expand that investment in years 2 through 5 to reach \$2.2 billion annually, providing universal access to the estimated 305,000 children of working parents who are currently in need of high-quality early care and learning.

Universal Pre-Kindergarten: Invest at least \$225 Million from the State, for new high quality, full-day Pre-K opportunities statewide and fully support any localities' efforts to expand high-quality full-day Pre-K to all children.

Universal Afterschool: Invest \$9 million in quality infrastructure in 2014-15, in preparation for five years of investment beginning with **\$160 million in 2015-16**. Expand that investment in years 2 through 5 to reach \$825 million annually, providing access to half of the estimated 1.1 million children in need of programs.

For questions on: child care, contact Carolyn Lee-Davis at Carolyn@TheChildrensAgenda.org; pre-kindergarten, contact Betty Holcomb at bholcomb@centerforchildrensinitiatives.org; afterschool, contact Nora Niedzielski-Eichner at neichner@nysan.org.





From America's Front Line Against Crime: Proven investments in kids will prevent crime and violence

As an organization of more than 5,000 police chiefs, sheriffs, prosecutors, attorneys general, other law enforcement leaders, and violence survivors, we are committed to putting dangerous criminals behind bars. But by the time law enforcement get involved, the damage is already done and lives are changed forever.

America's anti-crime arsenal contains no weapons more powerful than the effective programs that help kids get the right start in life. A number of high-quality programs are proven to prevent crime, reduce child abuse and neglect, and help troubled kids get back on track. Yet, despite decades of growing research proving what works, inadequate investments leave millions of children needlessly at risk of becoming delinquent teens and violent adults while putting every American at greater risk of becoming a victim of crime.

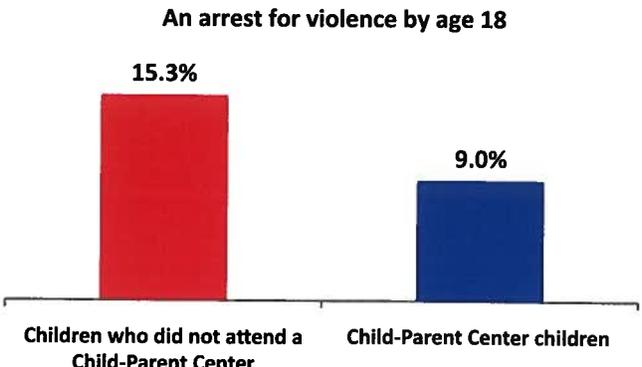
We call on all federal, state and local officials to implement this four-part plan to cut crime and violence. Doing so will help America's children learn the values and skills they'll need to become good neighbors and responsible adults. Across all ages there are effective programs. Some start before birth, others

are proven to work with older kids, even serious juvenile offenders. While no plan can prevent every violent act, this common-sense approach, based on our experience and the latest research about what really works, can make all of us safer .

Four Steps that Work

1. Provide all families access to high-quality early care and education for kids from birth to age five.
2. Offer voluntary parent coaching to at-risk parents of young children through home visiting or other options proven to prevent child abuse and neglect.
3. Ensure all school-age children and youth have access to effective programs during school hours and after school to help keep them on track.
4. Identify troubled and delinquent kids and provide them and their parents effective interventions so the children will avoid a life of crime.

At-Risk Children Without Quality Pre-Kindergarten Were 70% More Likely to Commit Violent Crimes



Reynolds, et al., 2001

1. Provide all families access to high-quality early care and education for kids from birth to age five

Law enforcement leaders have long known that giving kids the right start in life is the best way to prevent violence and crime. Rigorous social science and neuroscience research now backs that up. In the first few years of life, children's intellects and emotions, and even their ability to develop concern for others (the beginnings of conscience), are building the foundation upon which their later success or failure will greatly depend. As parents are at work trying to make ends meet, voluntary early education and care for babies, toddlers and preschoolers can begin preparing kids for a successful life rather than a life of repeated contacts with law enforcement. For example:

- Chicago's publicly-funded Child-Parent Centers have served almost 100,000 three- and four-year-olds since 1967. For 14 years, researchers tracked 989 of those children and 550 similar children not in the program. The children who did not participate were 70 percent more likely to be arrested for a violent crime by age 18.
- In Ypsilanti, Michigan, three- and four-year-olds from low-income families who did not participate in the Perry Preschool program were five times more likely to be chronic lawbreakers by age 27 than those who were randomly assigned to the program. The children in the preschool program were 44 percent more likely to graduate from high school.

2. Offer voluntary parent coaching to at-risk parents of young children through home visiting or other options proven to prevent child abuse and neglect

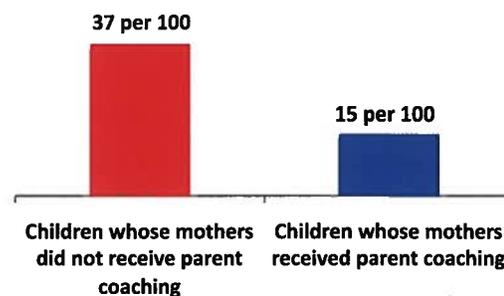
Almost 800,000 children are abused or neglected in this country each year. Studies show that being abused or neglected multiplies the risk that a child will grow up to be a violent criminal. Public safety demands that we offer at-risk parents home visiting and parent support programs that prevent children from being abused and neglected, prevent subsequent delinquency, and improve other outcomes for children. Research shows what works:

- The Nurse-Family Partnership randomly assigned half of a group of at-risk families to voluntary visits by specially-trained nurses who offered coaching in parenting skills and

other advice and support. Beginning during the mother's pregnancy and continuing until the child's second birthday, parents learned to manage stress, understand the health and nutrition needs of newborns, identify the signs of problems, make their home safe, and find resources such as doctors and child care help. Rigorous studies showed that the children served by the program were half as likely to be abused and neglected, and by age 15, they

Nurse Family Partnership Cut Arrests By More Than Half Among At-Risk Kids Served

Arrests Down 59%
Rate of arrests by age 15



Olds, et al., 1998

- Chicago's Child-Parent Centers preschool program for 3- and 4-year olds from low-income neighborhoods, already cited above, included a strong parent-coaching component with staffed parent-resource rooms in the centers. Children in the program were half as likely to experience repeated abuse or neglect and nearly half as likely to be placed in foster care as the similar children *not* in the program.
- Triple P, the Positive Parenting Program, is a system for delivering age-appropriate tools and techniques for parents to help their children behave responsibly. It lets parents pick what help they want, ranging from newsletter articles, to brief consultations, to ten weeks of parent coaching for parents with especially challenging children. The Triple P system was tested in counties throughout South Carolina with funding from the Centers for Disease Control and Prevention. For the thousands of children served in the counties randomly assigned to receive the efforts compared to the counties left out, Triple P counties averaged 25 percent reductions in abuse and neglect, 33 percent reductions in foster care placements,

and 35 percent reductions in emergency room visits or hospitalizations for abuse.

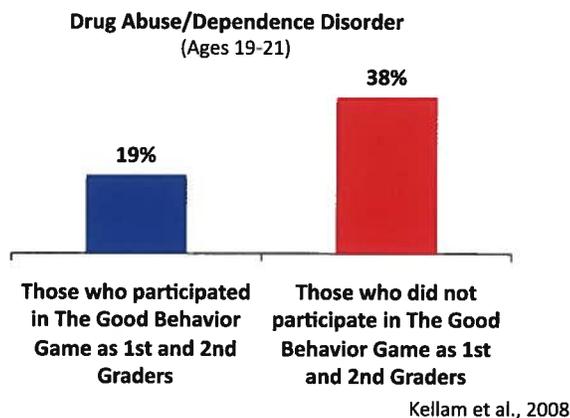
3. Ensure all school-age children and youth have access to effective programs during school hours and after school to help keep them on track

Two approaches are needed to help school-aged kids steer clear of crime: 1) effective programs during the school day, and 2) high-quality after-school programs.

- The Good Behavior Game is an example of a simple, effective school-based program for all kids. In the game, kids are divided into two teams that compete to behave well and follow class rules. The winning team receives simple rewards, such as lining up first for recess. In the process, the students acquire life-long lessons on how to effectively manage their own behaviors. In one trial, first graders were randomly assigned to participate or not in the game. By the sixth grade, non-participants were more than twice as likely as participants to suffer from clinical levels of conduct disorder – a mental health diagnosis associated with out-of-control behavior and delinquency.

In another randomized trial, by the time the male non-participants were age 19 through 21, they were twice as likely to suffer from a drug abuse/dependence disorder.

Boys in Baltimore Classrooms Not Receiving The Good Behavior Game Were Twice as Likely To Become Drug Abusers



- Studies have found that 40 percent of school bullies had three or more criminal convictions as adults, and bullies

are more likely to carry a weapon to school. Rigorously tested anti-bullying programs that enlist the whole school – everyone from bus drivers to principals – have cut bullying by as much as half.

- On school days, the after-school hours are the prime time for juvenile crime. Developing ways to attract at-risk middle- and high-school age children into after-school programs, and to effectively coach them on how to avoid troubling behaviors, can be challenging, but the Boys & Girls Clubs have shown they can deliver. For example, in a study conducted in several U.S. cities, five housing projects without Boys & Girls Clubs were compared to five projects receiving new clubs. At the beginning, drug activity and vandalism were the same. But by the time the study ended, the projects without the programs had 50 percent more vandalism and scored 37 percent worse on a combined measure of drug activity.

4. Identify troubled and delinquent kids and provide them and their parents effective interventions so the children will avoid a life of crime

Many children who are overly aggressive and at higher risk of becoming involved in violent crime later in life can be identified at an early age and helped:

- The Incredible Years provides training in problem solving and social issues for families of young children suffering from aggressive behavior problems. The researchers studying this program report that it has been able to stop the cycle of aggression for approximately two-thirds of the families served.

Many youths who are already offenders can become productive citizens with the right help:

- A few intensive family therapy programs, such as the Multisystemic Therapy or Functional Family Therapy, provide well-tested strategies to the parents or foster parents of serious juvenile offenders and work with the young offenders themselves to reduce kids' problem behaviors. Research shows that new arrests of youths in these programs have been cut by as much as half compared to similar troubled youths in families not receiving this help.

"We need to step up and invest in what works to keep America's most vulnerable children from becoming America's most-wanted adults."

– Sheriff Leroy Baca,
Los Angeles County, CA
Board Chairman,
FIGHT CRIME: INVEST IN KIDS

The bottom line: investing in kids saves lives and money

When our country fails to invest effectively in its children, all Americans pay the price – in taxes for criminal justice costs, costs to business, and costs to the victims. Worse, some children and adults will pay with their lives. Investing now in what works not only saves lives and protects Americans, it saves money:

- Researcher Mark Cohen found that the average value of preventing a baby from growing up to become a youth who drops out of school, uses drugs and goes on to become a career criminal is at least \$2.5 million per individual.
- Economist Steven Barnett found that the Perry Preschool program produced a net savings of \$16 for every dollar invested. Total savings averaged \$245,000 per child and more than two-thirds of the savings came from reduced crime costs.
- The Washington State Institute for Public Policy concluded

that the Nurse Family Partnership saved, on average, over \$12,000 per family served; and, for troubled youth already in the juvenile justice system, three effective family therapy programs cut future crimes so much their average savings ranged from \$18,000 to \$89,000 per child. States have immediately cut the costs of housing juvenile delinquents by shifting eligible youth from expensive facilities to those more effective family therapy programs.

Law Enforcement is united in calling for crime-prevention investments in kids

Who says these four steps are among our most powerful weapons to fight crime?

- The more than 5,000 law enforcement leaders and crime survivors who are members of FIGHT CRIME: INVEST IN KIDS.
- Major law enforcement and crime survivor organizations who have endorsed our call to fight crime by investing in kids: The International Association of Chiefs of Police, the National Sheriffs' Association, the National District Attorneys Association, the National Association of Attorneys General, the Fraternal Order of Police, the National Organization for Victim Assistance, and dozens of other national and state law enforcement organizations across America.

The prestigious National Academy of Sciences has further confirmed that the research on what works to keep kids out of trouble is solid.

Helping kids get the right start in life will save money, build a stronger America, and protect our communities. It is time to invest in what works.

For an electronic version of this brief with endnotes, see:

<http://www.fightcrime.org/page/fcik-plan-reduce-crime-and-violence-with-endnotes>

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Ensuring the Capital Region's Global Success

Reversing our "skills gaps" through high school
education models

A report by:  **AMERICA'S EDGE**
Strengthening Businesses Through Proven Investments In Kids

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AMERICA'S EDGE commissioned an analysis by Chmura Economics and Analytics of the educational and occupational trends in the state of New York and selected communities.

Who We Are

The business leaders of AMERICA'S EDGE take a critical look at the knowledge, skills and abilities businesses need their employees to have in the 21st century, including the ability to be communicators, collaborators and critical thinkers. Using that analysis, we educate policy-makers and the public about high-quality, proven investments that strengthen businesses, establish a foundation for sustained economic growth, and protect America's competitive edge in a global marketplace, while helping our nation's children get on the right track.

AMERICA'S EDGE NEW YORK is supported by tax-deductible contributions from foundations, individuals, and corporations. AMERICA'S EDGE NEW YORK accepts no funds from federal, state, or local governments. Major funding for AMERICA'S EDGE is provided by: Alliance for Early Success • The California Education Policy Fund • The Annie E. Casey Foundation • Robert Sterling Clark Foundation • Early Childhood Investment Corporation • Hagedorn Foundation • The Leona M. and Harry B. Helmsley Charitable Trust • The William and Flora Hewlett Foundation • The James Irvine Foundation • Robert Wood Johnson Foundation • W.K. Kellogg Foundation • The Kresge Foundation • McCormick Foundation • PNC Bank • Rauch Foundation.

Ensuring the Capital Region's Global Success

Reversing our "skills gaps" through high school education models

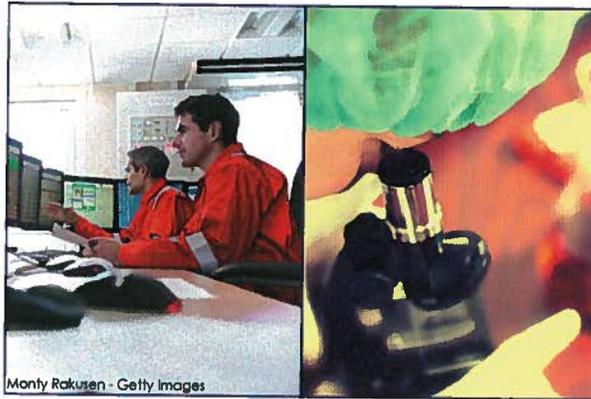
Executive Summary

If current education and labor market trends continue, New York will face a deficit of 350,000 workers with mid-level skills to fill current jobs – those requiring more than a high school degree but less than a four-year degree. Looking forward, seven in 10 jobs created in New York between 2008 and 2018 will require some type of formal education beyond high school, and over 80 percent of the fastest growing and high-wage jobs will require at least a two-year degree. In that same period of time, 93 percent of jobs in the areas of science, technology, engineering and math (STEM) occupations will require post-secondary education. By 2018 throughout the state, nearly two times as many jobs requiring post-secondary education will exist as compared to jobs for those with a high school education or less.

The need for skilled workers is particularly evident in the five-county Capital Region, which has become a leader in technology, especially nanotechnology and related industries. The high-tech STEM companies that have moved into the area, such as GlobalFoundries, have expressed concerns about filling jobs that will be opening. This concern is backed up by the New York State Labor Department, which predicts a 71 percent increase in computer and electronic product manufacturing jobs in the Capital Region from 2010 to 2020, an increase of over 1,000 jobs where workers in STEM fields can earn a median salary of almost \$77,000. Similarly, the Manufacturing Institute recently estimated that 82 percent of the region's manufacturers struggle to find qualified candidates.

The skills deficiencies go beyond those related to specific occupations. Capital Region businesses are also concerned about the lack of increasingly important "soft skills" – communication, collaboration and critical thinking – required for virtually any occupation in today's world. Nationally, three out of four executives believe that soft skills will become even more important in the next three to five years because of global competition and the pace of change in the business environment.

A pipeline of skilled workers will be hard to create when 23 percent of New York high school students fail to graduate on time, and only 37 percent of our public school students graduate "college and career ready." Too many do not graduate at all. In the Capital Region,



Monty Rakusen - Getty Images

according to recent data, graduation rates range from a high of 93.8% (Voorheesville) to only 52.3% (Albany City). While New York State ranks number one in education spending, at the same time, we are spending \$70 million on remedial education.

To reverse these skills gaps, the Capital Region business leaders of *America's Edge* urge that our high school students have greater access to innovative education models that can equip them for success in both college and career.

Both promising and proven high school education models provide relevant and core academic curricula that prepare students for education and career beyond high school. These models, including many in New York, utilize project-based learning, numerous written and oral communication activities, and work-based learning opportunities. Students are taught how to apply the knowledge they have acquired in one subject to use in different situations – students "learn to learn."

While we concentrate on making education relevant, we must also ensure continued implementation of New York's new rigorous standards – the P-12 Common Core Learning Standards – which will better ensure students develop the skills required by today's businesses. We must also assess student learning to determine how they are progressing and use this information to improve education so more students will be college- and career-ready. Finally, we must ensure that we are accurately assessing if teachers are effectively teaching these enhanced skills sets and if students are, in fact, developing the skills the business world now requires.

The bottom line: The future of New York's and the Capital Region's economy depends upon the caliber of our workforce. As we continue the debate on meaningful education reform, the conversation must include promising and evidence-based education approaches and college-and-career-readiness standards that develop and assess skills in our students that businesses expect – and need – from their workforce. New York business leaders are calling for continued implementation of New York's new rigorous standards and aligned assessments, and greater access to innovative high school models to better equip young people for success in both post-secondary education and their future careers.



Ensuring the Capital Region's Global Success

Reducing our "skills gaps" through high school education models

Unprepared Students, Unprepared Workers: Although businesses have always needed workers proficient in the "3 Rs" – reading, writing and arithmetic – today's fast-paced, international marketplace requires even higher proficiency levels in these hard skills. But they are too often lacking, especially among those entering the workforce.

- According to the Nation's Report Card, only 35 percent of New York 8th graders are proficient in reading, only 30 percent are proficient in math, and only 29 percent are proficient in science.¹
- Twenty-three percent of New York high school freshmen do not graduate within four years.² For several Capital Region counties, the proportion of students not graduating on time is higher than the state average, in Warren County (25 percent) and Schenectady County (24 percent). The proportion of students who do not graduate within four years is even higher in the Albany City School District (48 percent) and the Schenectady City School District (43 percent).³
- Only 37 percent of New York public school students graduate "college and career ready". In New York City, only 21 percent graduate college and career ready.⁴
- Only 41 percent of 2012 high school graduates in New York taking the ACT admission test met college readiness benchmarks in the four core areas tested – English, algebra, social science, and biology.⁵

- While New York State ranks number one in education spending, at the same time, we are spending \$70 million on remedial education throughout the SUNY system.⁶

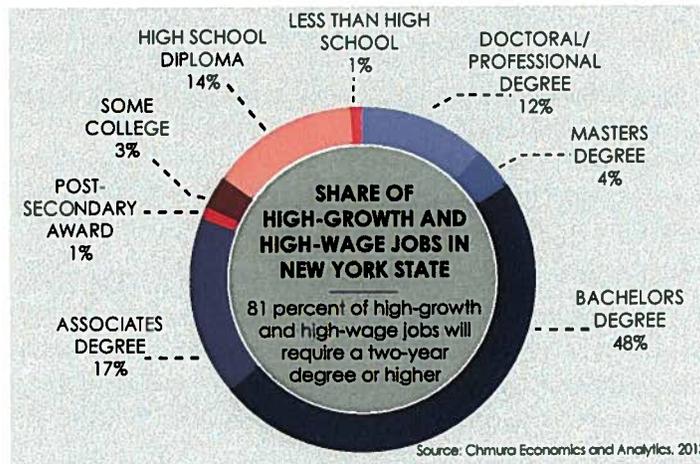
In addition to the "hard skills," employers are increasingly concerned about a lack of "soft skills" – communication, collaboration, and critical thinking. In a 2010 survey of 2,000

executives conducted by the American Management Association, three out of four executives believe that soft skills will become even more important in the next three to five years because of global competition and the pace of change in the business environment.⁷ But, in that same survey, nine out of ten executives said that soft skills like communication, collaboration and critical thinking are important to support

business expansion, but less than half of those executives rated their employees as above average in those skills.⁸

Growing New York Skills Gaps

With weak education outcomes, dissatisfied employers, and an increasing emphasis on soft skills, how will the New York workforce of the future fare? Data suggest that New York needs to make major changes to keep its workforce competitive with other states and internationally.



Examples of Middle-Skills Jobs New York Can't Live Without:



- EMT
- Firefighter
- Police officer
- Carpenter
- Electrician
- Plumber
- Dental hygienist
- Medical lab technician
- Aircraft mechanic
- Heating and AC installer
- Industrial machinery mechanic
- Machinist
- Legal secretary
- Computer support specialist

Middle-Skill Jobs Mismatches

If current education and labor market trends continue, New York will face a deficit of 350,000 workers with mid-level skills to fill current jobs.⁹ Middle-skill jobs – those that require less than a four-year degree, but more than a high school diploma – account for at least one third of all New York jobs.¹⁰ Middle-skill workers include registered nurses, health technicians, carpenters, construction workers, installation/repair technicians, production workers, and transportation/material moving workers. While middle-skill jobs in New York comprise 33 percent of the jobs statewide, the supply of workers today with these skills comprise only 29 percent of the workers.¹¹

Science, Technology, Engineering and Math (STEM) Occupations

Jobs that are heavily reliant on technology are growing fast. The number of STEM jobs in New York is expected to grow by 10 percent between 2008 and 2018.¹² Workers often need post-

“We’ve got jobs out there that can’t be filled because we can’t find qualified workers to fill them.”

Tush Nikollaj
President and CEO
Logicalnet Corporation,
Albany, NY

secondary education to capitalize on these types of jobs. In fact, 93 percent of New York STEM jobs will require post-secondary education by 2018, and 71 percent will require a bachelor’s degree or higher.¹³

Health care jobs are also growing in New York, with 22 percent growth between 2010 and 2020 compared to 13 percent growth in other jobs. But only 16 percent of health care jobs in 2020 will be for those with only a high school diploma; 84 percent will require some post-secondary education.¹⁴ Over half of New York hospitals surveyed reported difficulty recruiting experienced nurses. A shortage of nurses with the right experience was cited as the primary reason for 41 percent of hospitals with recruiting problems.¹⁵

The need for skilled workers is particularly evident in the five-county Capital Region, which has become a leader in technology, especially nanotechnology and related industries. The high-tech STEM companies that have moved into the area, such as GlobalFoundries, have expressed concerns about filling jobs that will be opening.¹⁶ This concern is backed up by the New York State Labor Department, which predicts a 71 percent increase in computer and electronic product manufacturing jobs in the Capital Region from 2010 to 2020, an increase of over 1,000 jobs where workers in STEM fields can earn a median salary of almost \$77,000.¹⁷

Similarly, the Manufacturing Institute recently estimated that 82 percent of the region’s manufacturers struggle to find qualified



candidates.¹⁸ These struggles are not unique to the Capital Region. Seven out of 10 U.S. manufacturing companies surveyed in 2011 reported a moderate to severe shortage of available, qualified workers, especially in skilled production jobs such as machinists and technicians.¹⁹

Rising Education Requirements

The increased skill levels for future jobs directly correlates to increased educational requirements for those jobs. The anticipated growth rates for occupations for New York are skewed towards jobs that are either highly skilled – needing a bachelor’s degree or above – or middle skilled – requiring more than a high school degree but less than a four-year degree.²⁰ By 2018 throughout the state, nearly two times as many jobs requiring post-secondary education will exist as compared to jobs for those with a high school education or less.²¹ Similarly, by 2022, about 81 percent of the fastest growing occupations that have above-average wages will be jobs that require a post-secondary education of an associate’s degree or higher.²²

FOURTEEN of the 25 fastest growing occupations in New York require post-secondary education.

-New York State Department of Labor, A Closer Look at Occupation Projections 2010

The educational mismatch in New York is dire. There will be 2.8 million total job vacancies in New York between 2008 and 2018, from new jobs and job openings due to retirements and career switches.²³ While 15 percent of New Yorkers lack a high school diploma or equivalent, only 10 percent of these job vacancies will be available for those without a diploma. In New York City, over 20 percent of the population may be fighting for the 10 percent of these low-level jobs.²⁴

Required Skills and Traits for Manufacturing

What Was Needed Then...

- Learning one or two specific technical roles
- Physical strength & flexibility
- Ability to follow fixed, unchanging procedures
- General attention to production & safety procedures
- Following orders
- Operating, maintaining, designing mechanical machinery

...And What's Needed Now

- Mechanical reasoning, logic, troubleshooting & spatial visualization
- Personal flexibility, communication & cooperation
- Initiative, persistence & independence
- Attention to detail, self-control & dependability
- Making independent decisions
- Operating computers or computerized machinery & using computers for a wide range of critical functions

Handler et al., 2009

In contrast, between 2008 and 2018, occupations requiring at least an associate’s degree are projected to grow three times faster than occupations that only require on-the-job training.²⁵ And by 2018, 63 percent of all jobs in New York will require some post-secondary education, the 18th highest rate in the country.²⁶ But only 41 percent of New Yorkers 25 or older have an associate’s degree or higher.²⁷ The fastest growing occupations that are likely to be hardest hit include registered nurses, accountants and auditors, computer software engineers, nursing aides and attendants, and elementary school teachers.

Acceleration of the Skills Gap

Experts believe the recession may have accelerated a demand for higher skilled workers because many companies turned to higher skilled workers while not replacing laid-off lower skilled positions because they have automated jobs or shipped jobs overseas. Traditional manufacturing was the hardest-hit sector in

“It’s no secret that the nanotech companies coming into the Capital Region, including GlobalFoundries, will have trouble finding the highly skilled workers needed to fill their job openings.”

John C. Cavalier
Ret. CEO of MapInfo, Inc.
Watervliet, NY

the Empire State in the last decade. The sector lost almost 300,000 jobs, or 40 percent of all manufacturing jobs.²⁸ Jobs losses of over 10,000 per year through 2016 are projected due to positions shifted out of the state or country and curtailed demand from increased productivity.²⁹

“The skills gap is an issue that warrants immediate attention – our economic competitiveness and national security depend on having a readied STEM workforce. Now more than ever, business and education must partner to ensure that students are being prepared for entrance into college and the innovation economy.”

Heather Briccetti
President and CEO
The Business Council of
New York State, Inc.

An aging population could also be a factor. The leading edge of the baby boom generation turned 65 in 2011, and the share of New York’s population age 65 or older is projected to rise from 13 percent in 2000 to 20 percent in 2030.³⁰ Retirements of highly trained employees, coupled with increased demand for health care as the area’s population ages, could lead to increased shortages in areas like nursing. Registered nurse jobs in New York are projected to grow by 14 percent, or 2,410 new jobs, annually until 2016.³¹ But a survey of New York hospitals found that over 75 percent of the nursing workforce is over age 40 and almost 15 percent of the workforce is expected to retire in the next five years – over 11,000 RN retirements. Due to educational limitations, the number of new nurses is not keeping up with demand. Researchers have thus forecasted a severe nursing shortage for the next 15 years.³²

Geographic shifts may also impact worker shortages. Population projections from the U.S. Census Bureau suggest that the overall working-age population (ages 16-64) in New York will decline by 6.5 percent between 2010 and 2025, a slide of over 860,000 workers.³³ In the Greater Capital Region, population projections suggest that the next 20 years will bring a decline in the overall number of workers, with or without the necessary skills for critical jobs. Analysts predict open jobs with no workers to fill them.³⁴

The United States Is Falling Behind

New York is not alone. Thanks to technology, more and more American workers are now directly competing with workers from around the world. How U.S. students stack up against students

from other countries is, thus, increasingly important – but the United States is no longer on top.

The U.S. high school graduation rate ranks in the bottom quarter of developed nations.³⁵ On an international test of applied knowledge and skills, the Programme for International Student Assessment (PISA), U.S. 15-year-old students score significantly below the average for industrialized nations in math and trail far behind leading countries like Korea, Japan and Finland in reading and science.³⁶ Once a leader in math education, U.S. high school students now fall in the bottom half of teenagers from developed countries. The U.S. is getting worse results while spending almost 40 percent more on education: U.S. spending per student in 2009 was over \$11,800, compared to an industrialized nation average of about \$8,600.³⁷ And in New York, education spending per student is even higher, at about \$15,900 in 2009.³⁸

Worker Shortages in the Capital Region

“The evidence indicates that there will be a large demand for highly skilled technicians [in the Capital Region] that the current workplace cannot fill...And over time, the gap will widen...With the projected addition of 1,200 technicians needed by GlobalFoundries and GE in two years, the shortage will become severe.”

-Regional Talent Pipeline Study, 2009

Although higher education attainment in the U.S. has continued to climb, we are not keeping pace with other nations and not growing fast enough to keep up with labor market demand. As recently as 1995, the U.S. was tied for first in college graduation rates. But as other countries dramatically improved their college completion rates, the U.S. has fallen to 13th out of 25 industrialized nations – decidedly in the middle of the pack.³⁹

High Cost of the Skills Gap

The lack of a skilled workforce comes at a high cost for individuals, businesses and the economy.

The unemployment rates in New York for occupations that require a bachelor’s degree or higher are at least three percentage points lower than the unemployment rates for occupations that



ONCE A LEADER in math education, U.S. high school students now fall in the bottom half of teenagers from developed countries - behind such countries as Slovenia, Hungary and Poland, and far behind leading countries like Korea, Japan and Finland.

-Organisation for Economic Co-operation and Development, 2010

are typically filled by someone with a high school diploma or less. The wage gains from even attempting some post-secondary training are clear across the state as well, with workers with an associate's degree earning almost \$12,000 more than a high school graduate and more than \$20,000 more than a high school dropout.⁴⁰ In the Albany-Schenectady-Troy MSA, the findings are even more stark, with the average wage for those with at least an associate's degree being more than \$20,000 greater than the average wage of a high school dropout.⁴¹

Graduating an additional 1,000 of New York's high school dropouts could result in impressive economic benefits. These 1,000 extra graduates would likely:

- collectively earn \$12 million more in an average year than they would have without a diploma;
- spend \$1.2 million more each year purchasing vehicles;
- buy homes worth \$25 million more by the time they reach the midpoint of their careers;
- support 80 new jobs in the state;
- increase the gross state product by \$16 million; and
- increase state revenues by \$1.3 million annually through their increased spending and investments.⁴²

High school dropouts are so much less productive than high school graduates that each new class of New York dropouts will earn \$9.8 billion less over their lifetimes than their high school graduate peers.⁴³ These staggering earnings losses translate into less spending power, fewer contributions to the

tax base and lower productivity. The returns from a college degree are even greater. The average lifetime earnings of an individual college graduate are \$2.1 million higher than those of a high school dropout and \$1.6 million higher than a high school graduate.⁴⁴

Remedial courses and training to help students catch up and get on track for higher education and training are helpful, but they are expensive and inefficient. For example, about half of all students entering the state community college system require remediation.⁴⁵ Remedial education costs students and the state an estimated \$248 million annually, and up to \$348 million annually after factoring in the reduced lifetime wages of students taking remedial courses.⁴⁶

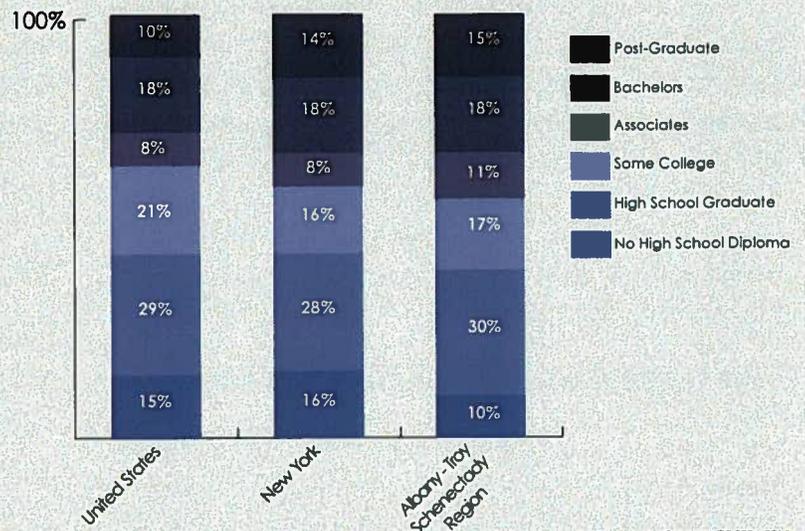
Changing Course

As New York and the nation wrestle with the vitally important debate on education reform, businesses know that career relevance must be incorporated into the classroom. Too many students do not understand *why* they need to know what they are being taught, lose interest in school and then do not develop the deeper learning skills employers expect them to have. Innovative high school education models help students stay engaged in school so they graduate with a concrete understanding of what they will need to succeed in the workforce and education post-high school, thus better ensuring New York businesses have a workforce armed with the skills required in a global marketplace.

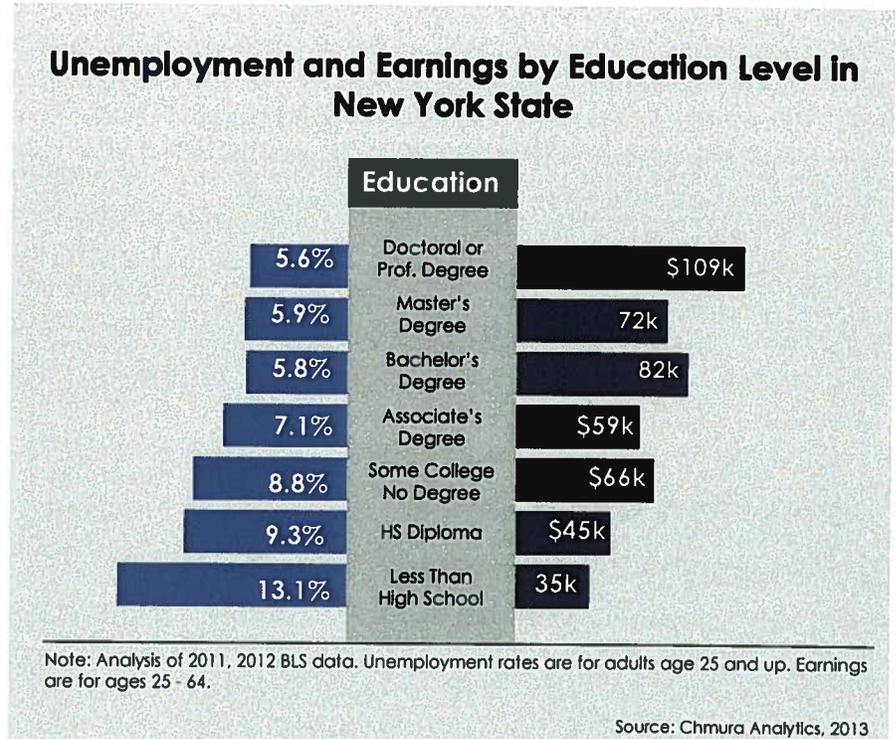
Developing Deeper Learning Skills

Business leaders know that young people entering college and the workforce need a mastery of core academic subjects. But they need more:

EDUCATIONAL ATTAINMENT IN NEW YORK STATE AND THE CAPITAL REGION



- The critical thinking and problem-solving skills necessary to find answers to challenges that – unlike multiple choice tests – are not on the page in front of them.
- Part of those skills come from learning how to learn – knowing how to find out what they do not already know.
- They will need effective written and verbal communication skills to work as part of a team, or to interact with the public.
- And, to work as a team, they will have to master collaboration skills, such as interpreting others messages and responding appropriately.



This preparation includes going beyond rote learning to transfer what they have learned in one subject and apply it in novel ways or different settings in the workplace. It also requires the ability to regulate one's own behavior and emotions to reach goals. Research cited by the National Research Council, for example, shows that being conscientious – “being organized, responsible, and hardworking – [has] the strongest correlation with desirable work and educational outcomes [whereas] anti-social behavior ... is negatively correlated with these [desirable] outcomes.”⁴⁷ These are skills that can be taught and reinforced, especially in the workforce. All of this goes beyond “textbook” learning to provide students and workers with the skills now needed in a competitive global market.⁴⁸

New York State P-12 Common Core Learning Standards

The New York State P-12 Common Core Learning Standards (CCLS), when fully implemented with their aligned assessments, will ensure that students develop the deeper learning skills required by today's businesses.

Until recently, each state has had its own particular educational standards and tests to assess student achievement. Standards varied greatly across states and even among school districts within a state. State tests also vary, in content and on the level of performance deemed “proficient.” As a result, there is a lot of confusion about how students are really doing and businesses have no objective way to compare job applicants from different states—a high

school diploma from a state with high standards likely comes with a different skill set than one from a state with low standards.

The CCLS offer a way out of this dilemma. The CCLS are based on the Common Core State Standards (CCSS)⁴⁹, which were developed and led by the nation's governors and chief state school officers, and have been voluntarily adopted by 45 states, as well as the District of Columbia, four U.S. territories and the Department of Defense Education Activity. The New York State Board of Regents adopted the CCSS in July 2010⁵⁰ and, in July 2011, adopted the CCLS, with some New York-specific standards added.⁵¹ The CCLS were implemented starting in the 2012-2013 school year.

The CCLS establish a shared, rigorous set of educational standards for English language arts and mathematics for P-12 education. The standards reflect businesses' needs for a highly-skilled workforce that has mastered core academic content and is able to think critically, solve complex problems and communicate effectively (i.e. deeper learning skills). The CCLS establish the content and skills that children must learn at each grade level, but they do *not* tell teachers how to teach, nor do they specify a curriculum; these important decisions remain under teacher, local or state control.

New York is a member of the Partnership for Assessment of Readiness for College and Careers (PARCC)⁵² consortium, one of the two main groups of states developing assessments based on the CCSS. The assessments will be implemented in 2014-2015. The



assessments will allow educators to determine how students are doing and to use this information to improve education, so more students will be college- and career-ready. Short-term assessments will allow teachers to determine students' understanding of concepts and then adjust teaching in real time, to increase understanding. The data from these assessments will also help educators identify and share educational practices that work with other schools and districts. Employers could also use new assessment scores to compare applicants and find those who have the reading and language or math skills needed. In 2012-2013, students in grades 3-8 are taking interim New York state tests that have been redesigned to align them with the CCLS.

Tech Valley High – Albany

Tech Valley High School was "developed in partnership with business, organized labor, and government to be a resource for the region's evolving technology ecosystem". It currently enrolls 125 students from 46 school districts. Students are selected by lottery; they include youth in the following categories—18% minority, 45% female, 40% free or reduced price lunch, and 18% with disabilities.⁵⁷

The school has a STEM focus and a project-based learning environment. Courses are team-taught and integrated with a real world context. Over 150 partners from business and the high-tech community work with teachers to co-design, co-teach, and co-assess curriculum projects.⁵⁸

Results are impressive. Of two graduating classes, all students graduated (97% Regents diploma, 3% local diploma), all were accepted to college (some chose military or employment), 68% are attending four-year colleges, and nearly 50% pursued STEM studies or employment (compared to 7% nationally). All students leave with a digital portfolio of their learning, including documentation of the ability to collaborate and work in teams, innovation and creativity, critical thinking, tech and information literacy, and self-direction. In addition, Tech Valley High School trained over 100 educators in 2011-12.⁵⁹

In addition to assessments, in order to affect student outcomes, we also need stronger curricula, compatible with the CCLS. Better pre- and in-service training will also be necessary, including support for teachers and leaders learning how to use the CCLS assessment data effectively.⁵³ As assessments will be

computer-based, schools must also have sufficient hardware and bandwidth to accommodate the assessments. However, current spending will cover a significant proportion of the costs of implementing the CCLS.⁵⁴

The CCLS can help ensure that students are receiving a high-quality education consistently, from state to state. The new educational standards and assessments will not magically turn things around overnight. Because the CCLS are more rigorous than New York's prior standards⁵⁵, the new assessments are going to be tougher than previous state tests. At first there is likely to be a decrease in test scores, not because students are doing worse, but because we will be accurately measuring how well students are meeting higher standards. With rigorous standards and assessments our students will be better prepared for success in post-secondary education and the workforce.

Developing Skills Businesses Need through High School Education Models

One of the best – and proven – ways to impact the skills gap is to equip high school students for success in both post-secondary training and/or education and their future careers. Students need to understand how education is relevant to a career, understand their options and what is expected in the work place, and develop communication, collaboration and critical-thinking capabilities. Innovative models and approaches are achieving these goals.

A common element to these proven and promising high school education models is the integration of rigorous academics, career-relevant instruction, support services for students and real-world, work-based learning experiences supported by industry and community partners over a three- or four-year period. A number of schools have also adopted educational approaches that focus on problem-solving, communication, and collaboration skills.

Career Academies and Pathways

Career Academies is a proven approach found throughout the United States and in New York that incorporates real-world, work-based learning. Although some programs are stand-alone schools, including charter or magnet schools, most are pathways within larger comprehensive high schools. Often called a "school-within-a-school," pathways typically comprise no more than 200 students who stay together with the same teachers for the duration of the program. That continuity helps create close relationships among the students, their peers and their teachers. It creates the kind of "team player" mentality employers too often find lacking in their younger employees.⁵⁶

Key elements in proven and promising high school education models, such as Career Academies, are:

Enhancing Deeper Learning Skills

Master Core Academic Content

Students must be able to demonstrate a baseline understanding of core content knowledge and apply facts, processes and theories to real-world situations.

Think Critically and Solve Complex Problems

Students must be able to apply tools and techniques learned from core subjects to formulate and solve problems, using them to evaluate, integrate and critically analyze multiple sources of information. Students must be able to learn to reason and construct justifiable arguments creatively, encompassing non-linear thinking and persistence.

Work Collaboratively

Students should demonstrate the ability to cooperate together to identify and create solutions to social, vocational and personal challenges. This includes the

ability to identify common goals; to organize resources necessary for meeting group goals; and to learn to communicate and incorporate multiple points of view to better achieve goals.

Communicate Effectively

Students must be able to organize their thoughts and findings in clear, meaningful and useful ways and express themselves in both written and oral forms. They must be able to listen well and present others' concepts, as well as their own.

Learn How to Learn

Students must be aware of their strengths and weaknesses and be able to monitor and direct their own learning. They should understand and be prepared to meet changing expectations in a variety of academic, professional and social environments.

- *Work-based learning* such as mentorships, job shadowing opportunities and internships with local employers brings actual career relevance to the students, deepening their understanding of how traditional academics are used in careers. This helps direct them toward training and education opportunities that will get them the skills New York employers are seeking.⁶⁰
- *Project-based learning* helps students make connections across subjects and brings greater relevance to classroom learning. Students work together on projects, developing academic and technical skills, as well as more experience with collaboration, communication and critical thinking.⁶¹
- *School-based enterprise*, like student-led businesses or community service initiatives, is another form of work-based learning. It allows students to design, produce and deliver real products and services.
- *Support services*, including counseling as well as additional instruction in reading, writing and mathematics, help students keep their grades up and stay on track for graduation.⁶²

the computer, engineering or media technology sector eight years after graduation, thus helping to increase the supply of STEM workers.⁶³ Young people who went through Career Academies earned more and were more productive than those not in the program.⁶⁴

Other Innovative Education Models

A number of schools around the nation have adopted educational approaches to promote deeper learning and help ensure that students focus on these critical problem-solving, critical thinking, communication, and collaboration skills. Included among the educational models that focus on developing these skills are Expeditionary Learning, EdVisions Schools, Big Picture Learning, and New Tech Network. Although evaluation research has not yet assessed the effectiveness of these models, their focus on these key learning skills that businesses need shows promise for helping students be better equipped for problem-solving, critical thinking, communication and collaboration.

In New York, there are several school models that focus on cultivating deeper learning skills.

- Expeditionary Learning (EL) is a comprehensive school reform model that uses project-based learning to help students cultivate critical thinking, problem-solving, and

In a well-designed study of Career Academies across America, students were twice as likely as nonparticipants to be working in



INNOVATIVE NEW YORK PROGRAMS THAT IMPLEMENT DEEPER LEARNING

Smart Scholars

The Smart Scholars/Early College High School initiative is targeted to students from groups that are generally underserved and under-represented in post-secondary education (70% qualify for free and reduced price lunch). Initiatives begin no later than 8th grade and occur in either an autonomous school or a school-within-a-school. This is an important point—in order to build a college-going culture, they must be more than simply “programs”.⁷⁵

In 2009, private funding paid for 11 initiatives (\$6M). In 2011, State funding paid for 12 new initiatives, plus funding for four of the original cohort to expand (\$6M). This year, there is an investment of \$4M in the State Budget. Governor Cuomo has proposed opening 10 new P-Tech schools in the 10 Economic Development Regions.

NanoHigh and Girls Inc. Eureka!®

The College of Nanoscale Science & Engineering (CNSE) is the first college in the world dedicated to research, development, education and deployment in nanoscience, nanobioscience, nanoengineering, and nanoeconomics. In 2004, CNSE awarded the world's first PhD degrees in nanoscience.

CNSE understands that, in order to continue to award such high honors, we must invest in students' education long before they enter into post-secondary studies. That is why CNSE has created two programs, NanoHigh and Girls Inc. Eureka!®, to cultivate talents in the STEM fields.⁷⁷ NanoHigh is the first program of its kind in the U.S. Since 2007, 90 Albany High School students

Data collected in Fall 2010-Summer 2012 showed that 3,105 students earned 8,723 transferrable college credits. Ninety-eight percent of current students are on-track to graduate high school. They have been offered 177 college courses.⁷⁶

There are three initiatives in the Capital Region, with a total of 487 students participating. They are: Albany Smart Scholars ECHS (City School District of Albany partnering with Hudson Valley Community College, University at Albany, and RPI), Clean Technologies Smart Scholars ECHS (Ballston Spa School District partnering with Hudson Valley Community College, Saratoga Springs CSD, and several CBOs), and Schenectady ECHS (Schenectady County Community College partnering with the Schenectady City School District).

have received certificates for successful completion of the program, which combines classroom work at Albany High with hands-on laboratory activities at CNSE.⁷⁸

The Girls Inc. Eureka!® program encourages young women to pursue opportunities in nanotechnology. The program began with a cohort of 30 8th grade girls in 2012. Over the next five summers, the program will continue to work with that cohort, as well as another 150 girls, at no cost. The program is co-sponsored with SEFCU, which is also providing wrap-around programs related to leadership development, workforce preparation, financial literacy, and service to the community.⁷⁹

collaboration. A hallmark of this school reform model are learning expeditions, which are interdisciplinary real-world projects which serve as the primary curriculum units in EL schools. Student success is assessed using three indicators: academic achievement, quality of student work, and evidence of student engagement.⁶⁵ Expeditionary Learning has a network of 165 schools in 29 states, including 25 schools in New York State.⁶⁶

- In New Tech High Schools, students engage in project-based learning focused on exploration and inquiry.⁶⁷ Students work in four-person peer groups to master all state graduation requirements.⁶⁸ Technology is fully integrated into instruction and supports the entire school community.⁶⁹ Students attending New Tech high schools have stronger academic, high school graduation, and college enrollment outcomes than the national averages for high school students.⁷⁰ There are 15 New Tech High Schools in New York.⁷¹
- The Big Picture Learning education model focuses on five learning goals: empirical reasoning, quantitative reasoning, communication, social reasoning, and personal qualities, with an emphasis on work-based learning.⁷² Students earn the same number of credits, take the same Regents exams, and graduate with a New York State Regents diploma just like students in traditional school settings. Unlike traditional schools, Big Picture School students earn their credits through individual learning plans that are based upon their interests and passions.⁷³ Students spend two days a week working alongside a professional mentor in the workplace and publicly present their learning four times a year. Big Picture Learning (BPL) was established in 1995 and now has served over 26,000 students nationwide, with six Big Picture Schools in New York.⁷⁴

Although evaluation research has not yet assessed the effectiveness of models such as these, their focus on key learning skills that businesses need shows promise for helping students be better equipped for problem-solving, critical thinking, communication and collaboration.

Through these promising models, New York high school students understand the skills they will need in a particular occupation and can make more informed decisions about post-secondary education and training. Whether they go directly into the workforce or pursue advanced education, these students will ultimately enter the workforce much more prepared to hit the ground running, potentially reducing the time and cost of on-the-job training.

CareerZone

CareerZone is the New York State career exploration and planning system developed and maintained by the NYS Department of Labor and provided at no cost to users. Students, parents and educators across the State are increasingly turning to CareerZone to find out what is happening in the labor market and how to plan for education and career opportunities in the future.⁸⁰

CareerZone is designed to help students explore career information in a fun and easy way. It's also designed to introduce students to opportunities in careers with which they are not familiar. For example, a STEM Portal in CareerZone helps connect students with a broad range of STEM careers, STEM workshops, internships and events in local communities across the state. This STEM Portal provides career videos, labor market information and job postings to bring these STEM careers to life and provide a full picture of these exciting opportunities.

CareerZone also includes lesson plans for educators to use. The plans are linked to State Learning Standards and will soon be crosswalked with the P-12 Common Core Learning Standards.⁸¹

Conclusion

New York State – and the Capital Region – runs the risk of falling behind when it comes to preparing the future workforce to compete successfully in a global economy. To meet the future demands of a more skilled and educated workforce, policy-makers should make sure we invest in what really works and include promising and evidence-based approaches that will ensure young people enter the workforce with the skills New York businesses need. State school districts should be encouraged in fully implementing the New York Common Core Learning Standards and aligned assessments, and the state should grant its school districts greater flexibility to incorporate proven or promising education models using deeper learning into their high schools. They can draw on their existing resources, and state funding, to follow these approaches. If we are serious about securing New York's economic future we must act now to get our businesses the highly-skilled workforce we need to innovate and grow in the global marketplace.



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All Children Prepared for Success

New York Common Core Learning
Standards and Aligned Assessments are Key to
Education Reform and a Strong Military



MISSION: READINESS
MILITARY LEADERS FOR KIDS



Who We Are

MISSION: READINESS is the nonprofit, nonpartisan national security organization of more than 300 retired generals, admirals and other senior retired military leaders who work to ensure continued American security and prosperity into the 21st century by calling for smart investments in the upcoming generation of American children. It operates under the umbrella of the nonprofit Council for a Strong America.

For a full listing of our membership, please see our website at www.missionreadiness.org.

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Summary

While there are other major disqualifying factors – including being overweight and having a criminal record – poor educational achievement is one of the biggest reasons why an estimated 75 percent of all young Americans are unable to join the military.¹ Even among those who graduate from high school, in New York, 21 percent of those seeking to enlist in the Army cannot join because of low scores on the military's entrance exam for math, literacy and problem solving, according to an analysis by The Education Trust.² These alarming figures raise a critical question: Will shortcomings in our state and local education systems become a threat to national security?

We need enough skilled men and women available to serve in tomorrow's armed services, to ensure the future strength of our military. What happens in our classrooms today will determine our future military readiness. Businesses in the private sector are seeking many of the same skill sets and running into the same challenging deficits. The Common Core State Standards (CCSS) can help ensure that students are receiving a high-quality education consistently, from school to school and state to state, so that all students, no matter where they live, or how often they move to a new school, are prepared for success in postsecondary education, the workforce or the military, if they choose to serve.

For years, each state has had its own particular educational standards and tests to assess student achievement. Standards varied greatly across states. State tests also vary, in content and on the level of performance deemed "proficient." As a result, there is a lot of confusion about how students really are doing. The military has no objective way to compare applicants from different states and has to use its own assessment, the ASVAB (Armed Services Vocational Aptitude Battery), to assess applicants. Also, for children in military

families, frequent moves can be unnecessarily complicated by variations in school standards across different locations, negatively affecting their academic experience.

The CCSS, developed by teachers, researchers and other experts, and led by the states' governors and chief state school officers, have been voluntarily adopted by the Department of Defense Education Activity, 45 states, including New York, the District of Columbia and four U.S. territories. The CCSS establish a shared, rigorous set

of educational standards for English language arts and mathematics for K-12 education. In addition to core academic content, the CCSS focus on critical thinking, complex problem solving and effective communication—all essential skills for today's and tomorrow's military, as well as for many other careers.

But standards alone are not enough. To have an impact on student outcomes, there must be accountability. Standards

must be accompanied by assessments, based on the standards, and a system for reporting results, so everyone will know how students are really faring. If we do not know how students are really performing, we do not know the scope of the problem, nor can we make informed efforts to solve it.

The new educational standards and assessments will not magically turn things around overnight. Because the CCSS are more rigorous than most states' prior standards (including New York's), at first there is likely to be a decrease in test scores, compared to previous assessments. But having common standards and accountability through related assessments will move us closer to all students doing well. New York has moved in the right direction by adopting the New York State P-12 Common Core Learning Standards (CCLS) and aligning its assessments to the CCLS. The state must continue this effort.

Given the rigor of the CCSS, it is likely that their implementation would result in more military applicants being able to pass the ASVAB.



All Children Prepared for Success

New York Common Core Learning Standards and Aligned Assessments are Key to Education Reform and a Strong Military

School Failure is a National Security Threat

Poor educational achievement is one of the biggest reasons why an estimated 75 percent of all young Americans are unable to join the military.³ In New York, 21 percent of high school graduates seeking to enlist in the Army cannot join because of low scores on the military's entrance exam for math, literacy and problem-solving.⁴ These shortcomings in our state and local education systems can become a threat to national security. We need enough skilled men and women available to serve in tomorrow's armed services, to ensure the future strength of our military. Businesses in the private sector are seeking many of the same skill sets and running into the same challenging deficits.

Moving Ahead by Raising Educational Standards

For years, each state had its own particular educational standards and tests to assess student achievement. Standards varied greatly across states. State tests also vary, in content and on the level of performance deemed "proficient." As a result, a military applicant's having a high school diploma did not convey much information—a diploma from a state with high standards likely comes with a different skill set than one from a state with low standards.

Children in military families are also frequently burdened by variations in educational standards. Military children attend six to nine different schools during their elementary school

years.⁵ As they move between schools, they experience differences in standards and expectations, as well as different assessments, variations that can negatively impact their academic experience and performance. For example, a military child might take algebra for three years in different schools, but never learn geometry. Many non-military children are also mobile and can be negatively affected by variation in educational standards: more than 2.5 million children moved out of their home counties in 2011 and at-risk children (poor, those in single-parent families) are more likely to have frequent moves.⁶

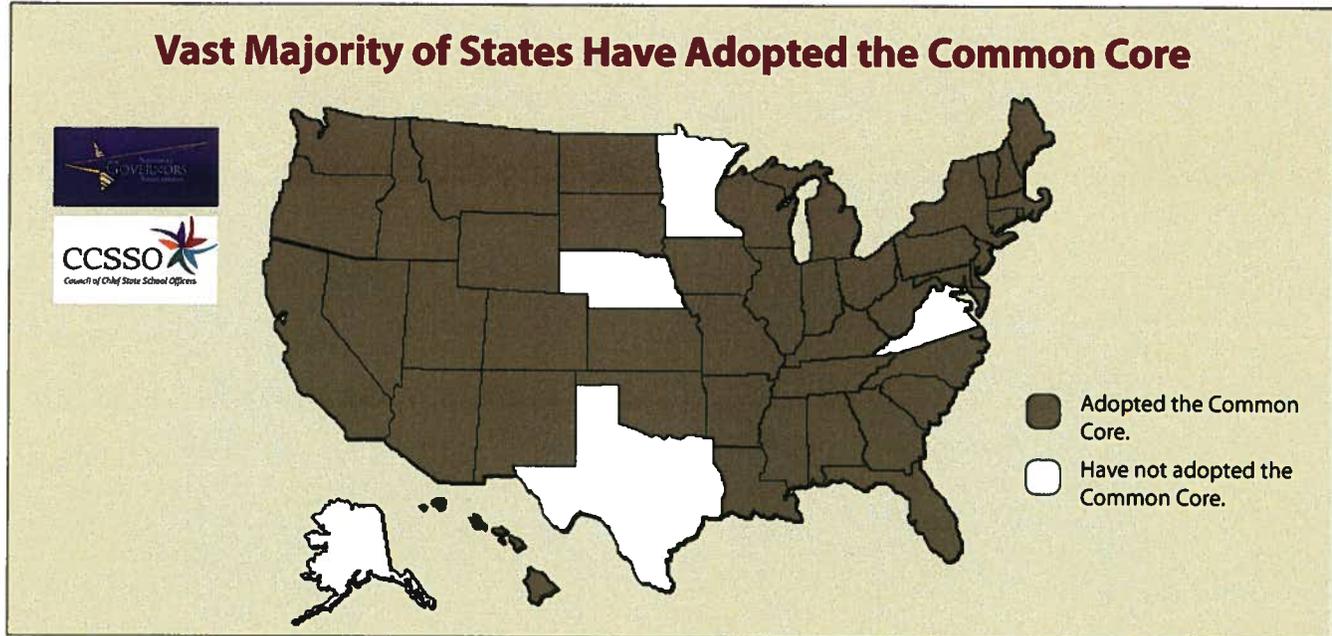
The Common Core State Standards (CCSS)⁸ offer a way out of these dilemmas. The National Governors Association and the Council of Chief State School Officers spearheaded the development of the CCSS. A wide variety of stakeholders (teachers, academics, business leaders, etc.) participated in the development and vetting of the standards.⁹ The CCSS establish a rigorous, shared set of educational standards for K-12 education, for English language arts (ELA) and mathematics. Existing state standards remain for subjects other than ELA and mathematics. In addition to core academic content, the standards will help students develop higher-order skills, such as critical thinking, problem solving, being able to comprehend and communicate complex text—skills essential for today's and tomorrow's military, as well as for many other jobs in the 21st century workforce. The Council on Foreign Relations-sponsored Task Force on U. S. Education Reform and National Security argued that states must implement the Common Core State Standards to enhance our ability to defend the country.¹⁰

“Adoption of the Common Core State Standards marks a defining point for our highly mobile students. Consistent standards will enable DoDEA students to stay on track even when their families are moving between the states or overseas.”⁶

Marilee Fitzgerald, Director;
US Department of Defense Education Activity



Vast Majority of States Have Adopted the Common Core



The CCSS can help teachers ensure their students have the skills and knowledge they need to be successful by providing clear goals for student learning. Although states vary, there are some core skills all children need—reading and math—wherever they live and whatever their career aspirations. The CCSS can help ensure that students are receiving a high-quality education consistently, from school to school and state to state, so that all students, no matter where they live, or how often they move to a new school, are prepared for success in postsecondary education, the workforce and the military, if they choose to serve. Given the rigor of the CCSS, it is likely that their implementation would result in more military applicants being able to pass the ASVAB. Parents will also benefit from the CCSS, as they will know what their children should learn at each grade level, and can hold schools accountable.

A study by the Thomas B. Fordham Institute found that overall, the CCSS are more rigorous than previous English language arts standards in 37 states and math standards in 39 states, including New York.¹¹ The CCSS are baseline standards and states could choose to exceed the baseline and/or incorporate some of their own standards (up to 15 percent).

The CCSS establish the content and skills that children must learn at each grade level, but **they do not tell teachers how to teach, nor do they specify a curriculum**; these important decisions remain under teacher, local or state control. The CCSS also do not require collecting any new data on children or families.

Forty-five states, including New York, as well as the District of Columbia, the Department of Defense Education Activity

and four U.S. territories (American Samoa Islands, Guam, Northern Mariana Islands and U. S. Virgin Islands), have voluntarily adopted the CCSS. Each state has its own process for adopting educational standards; in some states adoption of the standards went through the state legislature, in other states the adoption procedure was through the state board of education. The New York State Board of Regents adopted the CCSS in July 2010¹² and, in July 2011, adopted the New York

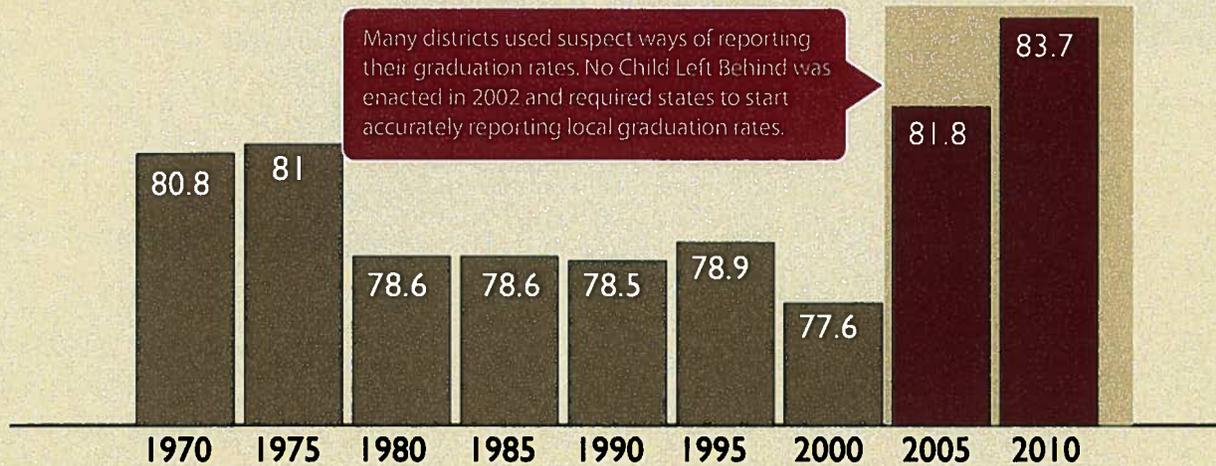
Why are CCSS so important to military-connected students?

"The education experience for many military-connected students can be frustrating... [because] traditionally [it has] been a patchwork of various standards and expectations as they move from state to state. Some students find themselves in a class where they do not have the expected knowledge and skills needed to do well, skills their classmates learned the previous year. Other students find themselves repeating material and are expected to be content to spend class time 'reviewing.' The adoption and implementation of CCSS are a critical step and particularly important to the mobile military-connected student because they provide consistency, continuity, and clear expectations of the knowledge and skills students need in each grade."

Source: http://www.militarychild.org/public/upload/images/OTM_CommonCore-lres.pdf



What Gets Measured (Accurately) Gets Done: High School Graduation Rates



Source: Richard Murnane

State P-12 Common Core Learning Standards (CCLS), with some New York-specific standards added.¹³ The CCLS were implemented starting in the 2012-2013 school year. Some states decided to adopt the CCSS around the same time they were applying for funds through the Race to the Top (RTT) grant program, although this was not a requirement. Nearly all of the states have moved forward in implementing the CCSS, regardless of their success in receiving RTT funds.

Results from Massachusetts demonstrate the importance of rigorous academic standards. In 1993, Massachusetts passed standards-based education reform legislation. Since that time, students in the Commonwealth have had dramatic academic growth, including leading the nation on the National Assessment of Educational Progress test (NAEP; the Nation's Report Card, a periodic assessment of what American students know and can do.)¹⁴

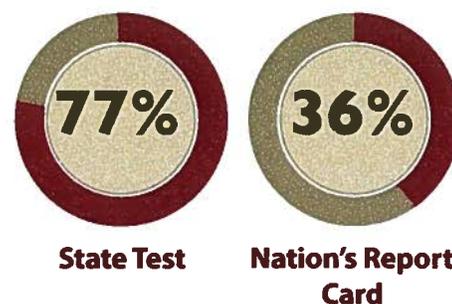
Assessment is Essential

Education experts agree that standards alone are not enough—research has shown only weak relationships between the quality of state educational standards and achievement test scores. To have an impact on student outcomes, there must be accountability. Standards must be accompanied by assessments based on the standards, and a system for reporting results, so everyone will know how students are really faring.¹⁵ There is currently a lot of confusion about student achievement levels, because each state developed its own standards and test. For example, in 2009 in New York, for 4th grade reading, 36 percent of students scored proficient or higher on the NAEP, versus 77

percent on the state test.¹⁶ If we do not know how students are really performing, we do not know the scope of the problem, nor can we make informed efforts to solve it.

Results following implementation of the No Child Left Behind Act (NCLB) demonstrate the importance of accountability in improving outcomes, and the role of accurate, common measurement: when states were required to use a valid, common method of computing graduation rates and publicly report the results, graduation rates increased.¹⁷ States could no longer manipulate how graduation rates were computed in order to maximize their results. Instead, they had to implement real reforms that contributed to a real change in student outcomes: more students graduating. Rigorous assessment was also a significant component of the Massachusetts school reform

4th Grade Reading Proficiency



effort. They developed an assessment, the Massachusetts Comprehensive Assessment System (MCAS), aligned to their educational standards. Results are reported for individual students, allowing both teachers and parents to see how



each child is faring. The MCAS was also high stakes: after an implementation phase, students had to pass the MCAS in 10th grade in order to graduate from high school. Experts credit the combination of rigorous standards and aligned assessment for the excellent results Massachusetts has achieved in recent years.¹⁸

New York is a member of the Partnership for Assessment of Readiness for College and Careers (PARCC)¹⁹ consortium, one of the two main groups of states developing assessments based on the CCSS. The new assessments will move beyond a multiple choice format and test children's learning at a deeper level. The assessments will be implemented in 2014-2015 and are meant to replace current state tests—better, not more, testing. In 2012-2013, students in grades 3-8 took interim New York state tests that have been redesigned to align them with the CCLS. The common CCSS assessments will allow educators to determine how students are doing and to use this information to improve education. Short-term assessments will allow teachers to determine students' understanding of various concepts and then adjust teaching in real time, to increase understanding. In the longer term, results of the "apples-to-apples" assessments of student learning, based on the standards, will produce data that will provide educators with a basis for identifying and sharing education practices that work with other schools and districts. The military could also use CCSS assessment scores to compare applicants from different states, as a supplement to the ASVAB.

In addition to standards and assessments, in order to affect student outcomes, we also need better curriculum, compatible with the CCSS, as well as improved quality of teaching (including through better pre- and in-service training).²⁰ Teachers must also receive support to connect the standards to everyday life, develop curriculum and lesson plans, and learn how to use assessment data effectively. There are costs associated with these improvements, of course. However, in many states, including New York, current spending can cover most of the costs of transitioning to the CCSS.²¹

The new standards and assessments will not magically turn things around overnight. Because the CCSS are more rigorous than most states' prior standards (including New York's), at first there is likely to be a decrease in student test scores, compared to previous assessments—difficult news to deliver. When New York students took the interim tests aligned to the CCLS in 2013, as expected, scores decreased.²² But having common standards and related assessments will allow states, districts and schools to share data on what works best, helping each to move closer to all students doing well. For example, different localities will use different curricula

and teaching approaches. Assessments will reveal which curricula and teaching approaches work best for which kids, and information can then be shared.

Moving Ahead

Military leaders understand that in order to get ahead, all students must be held to high standards and learn both the content and skills necessary for success. The CCSS are an important step in this direction and will also benefit children in military families who relocate to new schools frequently. New York has moved in the right direction by adopting the New York State P-12 Common Core Learning Standards (CCLS) and aligning its assessments to the CCLS. The state must continue this effort, to ensure that students will be better prepared for postsecondary education, the workforce, and the military, if they choose to serve.

Endnotes

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