STEPHEN M. SWEENEY
SENATE PRESIDENT
P.O. BOX 099
TRENTON, NEW JERSEY 08625-0099

NEW JERSEY LEGISLATURE

SHEILA Y. OLIVER
GENERAL ASSEMBLY SPEAKER
P.O. BOX 098
TRENTON, NEW JERSEY 08625-0098

June 25, 2010

In New Jersey, we believe it is possible for education to compensate for disadvantage, and that social justice demands that this possibility be actualized.

These beliefs are held in many states. But in NO other state have the people and their government demonstrated so deep a commitment to these tenets.

Not surprisingly, there is broad-based support in New Jersey for the Obama Administration's Race To the Top initiative. We see it as a federal endorsement of the education reform principles to which we have long been committed, and an opportunity to accelerate the improvement of our public education system, advance towards our vision of social justice, benefit every New Jerseyan, and benefit every American as we prove just how powerfully progressive in impact an excellently-designed, constantly learning and improving public education system can be.

There has often been controversy in the past attached to the steps we have taken to progress towards our vision of what public education can achieve. But our citizens' commitment to social justice has propelled us forward in spite of the controversy, and in every instance our hope of what might be gained has been confirmed by empirical evidence, with the result that what was once debated has become increasingly affirmed by all.

We believe this experience will be repeated as we work together to complete the implementation of the reforms highlighted in this grant application. There will be controversy. But deep popular and political support for reform will enable us to press on, implement our plan, benefit our children, and prove the justice-advancing power of the Race To the Top reform principles to which both we and the Obama Administration are passionately committed.

New Jersey will be better for it. America too.

The Power of Education to Compensate for Disadvantage, And the Demand of Social Justice that this Potential be Actualized

In New Jersey, we have never bought into the belief that poverty is destiny. We acknowledge that parental wealth and education remain powerful predictors of whether a child will succeed in school and proceed to a successful life. But we reject the idea that it must always be so – that our public schools can never so improve as to lift the life prospects of a disadvantaged child to the same level as his or her more advantaged peers.

Our abiding faith in the potential of public education derives not from our hearts speaking louder than our minds. It proceeds from our parents, teachers and principals so often seeing exceptional educators make a difference in children's lives.

Empirical data to the contrary has not stopped some people from arguing that nothing can be done to help children from disadvantaged backgrounds learn more successfully. But these arguments no longer persuade many. Those who want to justify the educational failure of schools now must turn to other canards. Some are arguing that great teaching and school leadership are natural or developed abilities that individuals may serendipitously possess, but that cannot be taught.

Happily, accumulating research data persuades that this second justification for school failure is also invalid. The research indicates that people who love teaching and are dedicated to doing it well (both qualities which are in great abundance amongst educators) can be taught to teach *very* skillfully with a hugely positive impact on their students' learning.

Research is now focusing on the factors necessary to support effective teacher development, and how such factors can be scaled up in a school district and, even more broadly, throughout a state public education system.

Social justice demands that we search for answers to such questions and that our public education systems implement the kinds of incentives and accountability mechanisms that will encourage district and school decision-makers to make use of such answers.

Evidence of New Jersey's Historic Commitment To Actualizing the Justice-Advancing Potential Of an Excellent Public Education System

In New Jersey, we have written into our state constitution the requirement that the State make freely available to every child a THOROUGH education.

Many states say they are committed to such an ideal, but no other state has so put its money where its mouth is. New Jersey spends more per child on its public schools than any other state in America, and both its courts and its legislature have worked to ensure that the state's poorest school districts have financial resources absolutely equal to its wealthiest.

Of course, justice demands more than merely equalizing the financial resources of rich and poor school districts. It also demands that greater resources be made available to educate children with greater needs. Here too, New Jersey stands out. It allocates dollars for the education of a child based on the child's needs and these dollars follow the child to the public school (and even, in some instances, to the privately managed school) in which the child enrolls. In poor school districts, the state provides the resources necessary to make a pre-school education available to children for free. We were the first state in America to do this. In all districts, the State covers extraordinary costs attached to the education of special needs children. In both of these examples, the state and local tax dollars committed to the education of a child follow that child to the public or privately managed school in which he or she enrolls.

The evidence of New Jersey's historic commitment to actualizing the justice-advancing potential of public education is much more than monetary. We long ago began putting into place the education reform elements being so excellently encouraged by the United States Department of Education through this Race To the Top initiative.

For instance, in recent years, when some other states were lowering their academic standards and loosening their assessment procedures to obscure educational problems, New Jersey was raising its academic standards and improving its assessment instruments and procedures to flag our educational problems. Our goal was to concentrate effort on successfully addressing them.

One major problem identified is the size of New Jersey's achievement gap. We are proud that our NAEP scores are among the highest in the nation – especially since we have such a complete cross-section of students being sampled. But we are horrified that our achievement gap is simultaneously one of the largest in America.

New Jersey has been working hard to close its achievement gap, and the latest NAEP results show a narrowing. But in this application you will learn about many brand new initiatives that we believe will even more successfully and rapidly narrow the gap – and that will do so while raising the average achievement scores of *every* quintile of New Jersey students.

A key to successful standards-based reform is the capacity to track student learning growth and correlate it with diverse factors in the learning experience of students. New Jersey has been working hard to develop its longitudinal data tracking capabilities, and while we are not where we want to be, we are making steady progress. Winning this Race To the Top grant competition would significantly accelerate that progress and with our expanded longitudinal data tracking capacity and make New Jersey a national model of data-driven education reform.

Of course, for data to drive reform a state must have the political will to act upon it. New Jersey has always been at the cutting edge of education reform

in America because New Jersey has always had the political will to press forward towards its vision of a justice-advancing public education system.

We pioneered the use of alternate-route teacher certification. We were the first to have the state take direct administrative control of failing school districts as a way to enforce educational accountability. We were an early passer of charter school and school choice legislation. We have the will to work together on bold changes.

The Commitment We Make Today That New Jersey WILL Race To The Top
And FULLY Actualize the Justice-Advancing Potential
Of An Excellent Public Education System

New Jersey is seeking via its Race To the Top initiatives to:

- Close our academic achievement gap even as we substantially raise the achievement level of every quintile of New Jersey students;
- Cut our drop-out rate by more than half; and
- Graduate our students from high school truly college or work-ready.

To guide our steps in this effort, we will work together to make student learning growth central to evaluating the educational effectiveness of our education policies and practices. We believe this focus will make New Jersey's education system one which constantly learns and improves.

As the political and educational leaders who are most responsible for public education in New Jersey, we commit to working together to make the necessary legislative and regulatory changes to meet the goals of the Race to the Top initiative. These include:

1. Incorporating the Common Core into New Jersey's high-quality academic standards; Developing and supporting multiple, easily-administered assessments that support instructional analysis, and accountability;
2. Developing a longitudinal data system that tracks student learning growth, facilitates good analyses of "what works," and supports good decision-making by teachers, educational leaders and parents;
3. Creating incentive, support, and accountability frameworks for our teachers, principals and school district leaders that are aligned with student learning growth and success;
4. Doing what it takes to boldly turn around our most struggling schools and districts; and
5. Sustaining reform conditions to advance and improve educational services across our state.

Together, these reform initiatives map directly to the assurances being sought by the United States Department of Education in this Race to the Top grant competition. More importantly, they form a coherent plan of action for a constantly learning, constantly improving public education system.

We welcome the opportunity to improve our public educational system by working collaboratively to implement reforms which meet the goals of the Race to the Top initiative.

Signed,

Stephen M. Sweeney
Senate President

Sheila Y. Oliver
Assembly Speaker

M. Teresa Ruiz
Chairperson
New Jersey Senate Education Committee
Education Committee

PatrickJ. Diegnan, Jr.
Chairperson
New Jersey Assembly

State of New Jersey
DEPARTMENT OF EDUCATION
PO BOX 500
TRENTON, NJ 08625-0500

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

BRET SCHUNDLER
Commissioner

June 25, 2010

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There has often been controversy in the past attached to the steps we have taken to progress towards our vision of what public education can achieve. But our citizens' commitment to social justice has propelled us forward in spite of the controversy, and in every instance our hope of what might be gained has been confirmed by empirical evidence, with the result that what was once debated has become increasingly affirmed by all.

We believe this experience will be repeated as we complete the implementation of the reforms highlighted in this grant application. There will be controversy. But deep popular and political support for reform will enable us to press on, implement our plan, benefit our children, and prove the justice-advancing power of the Race To the Top reform principles to which both we and the Obama Administration are passionately committed.

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Our abiding faith in the potential of public education derives not from our hearts speaking louder than our minds. It proceeds from our parents, teachers and principals so often seeing exceptional educators make a difference in children's lives.

We believe our faith was confirmed by the federal government's Effective Schools Research some years back. It threw a spotlight on No Excuses schools where exceptional leaders established cultures of success, fully developed the educational effectiveness of their teaching staffs, and dramatically improved the learning and life prospects of even their most disadvantaged students. A great example of such a public school is the Harriet Tubman School in Newark.

Empirical data to the contrary has not stopped some people from arguing that nothing can be done to help children from disadvantaged backgrounds learn more successfully. But these arguments no longer persuade many. Those who want to justify the educational failure schools now must turn to other canards. Some are arguing that great teaching and school leadership are natural or developed abilities that individuals may serendipitously possess, but that cannot be taught.

Happily, accumulating research data persuades that this second justification for school failure is also invalid. The research indicates that people who love teaching and are dedicated to doing it well (both qualities which are in great abundance amongst educators) can be taught to teach *very* skillfully with a hugely positive impact on their students' learning.

Research is now focusing on the factors necessary to support effective teacher development, and how such factors can be scaled up in a school district and, even more broadly, throughout a state public education system.

These are not small questions. Some organizations – for instance, the KIPP Academies – have demonstrated that they can establish one school after the next capable of dramatically increasing the learning and life prospects of disadvantaged children. But no one knows yet how to manufacture such schools rapidly.

Social justice demands that we search for answers to such questions and that our public education systems implement the kinds of incentives and accountability mechanisms that will encourage district and school decision-makers to make use of such answers.

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To Actualizing the Justice-Advancing Potential
Of an Excellent Public Education System**

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Many states say they are committed to such an ideal, but no other state has so put its money where its mouth is. New Jersey spends more per child on its public schools than any other state in America, and both its courts and its legislature have worked to ensure that the state's poorest school districts have financial resources absolutely equal to its wealthiest.

Of course, justice demands more than merely equalizing the financial resources of rich and poor school districts. It also demands that greater resources be made available to educate children with greater needs. Here too New Jersey stands out. It allocates dollars for the education of a child based on the child's needs and these dollars follow the child to the public school (and even, in some instances, to the privately managed school) in which the child enrolls. In poor school districts, the state provides the resources necessary to make a pre-school education available to children for free. We were the first state in America to do this. In all districts, the State covers extraordinary costs attached to the education of special needs children. In both of these examples, the state and local tax dollars committed to the education of a child follow that child to the public or privately managed school in which he or she enrolls.

The evidence of New Jersey's historic commitment to actualizing the justice-advancing potential of public education is much more than monetary. We long ago began putting into place the education reform elements being so excellently encouraged by the United States Department of Education through this Race To the Top initiative.

For instance, in recent years, when some other states were lowering their academic standards and loosening their assessment procedures to obscure educational problems, New Jersey was raising its academic standards and improving its assessment instruments and procedures to flag our educational problems. Our goal was to concentrate effort on successfully addressing them.

One major problem identified is the size of New Jersey's achievement gap. We are proud that our NAEP scores are among the highest in the nation – especially since we have such a complete cross-section of students being sampled. But we are horrified that our achievement gap is simultaneously one of the largest in America.

New Jersey has been working hard to close its achievement gap, and the latest NAEP results show a narrowing. But in this application you will learn about many brand new initiatives that we believe will even more successfully and rapidly narrow the gap – and that will do so while raising the average achievement scores of *every* quintile of New Jersey students.

A key to successful standards-based reform is the capacity to track student learning growth and correlate it with diverse factors in the learning experience of students. New Jersey has been working hard to develop its longitudinal data tracking capabilities, and while we are not where we want to be, we are making steady progress. Winning this Race To the Top grant competition would significantly accelerate that progress and with our expanded longitudinal data tracking capacity, make New Jersey a national model of data-driven education reform.

Of course, for data to drive reform a state must have the political will to act upon it. New Jersey has always been at the cutting edge of education reform in America because New Jersey has always had the political will to press forward towards its vision of a justice-advancing public education system.

We pioneered the use of alternate-route teacher certification. We were the first to have the state take direct administrative control of failing school districts as a way to enforce educational accountability. We were an early passer of charter school legislation.

Of greater importance than our historic commitment to public education excellence is our commitment to press forward from where we are today all the way to the TOP: that mountaintop where all the individual pieces of education reform have been assembled, so all the world can begin to see just how powerfully public education can advance the actualization of social justice.

The Commitment We Make Today That New Jersey WILL Race To The Top And FULLY Actualize the Justice-Advancing Potential Of An Excellent Public Education System

New Jersey is seeking via its Race To the Top initiatives to:

- Close our academic achievement gap even as we substantially raise the achievement level of every quintile of New Jersey students;
- Cut our drop-out rate by more than half; and
- Graduate our students from high school truly college or work-ready.

To guide our steps in this effort, we commit that we will make student learning growth the yardstick by which we measure the educational effectiveness of everything we do in public education. We believe this focus will make New Jersey's education system one which constantly learns and improves.

We are already enroute, as mentioned earlier, to having the necessary elements of such a public education system in place. As the political and educational leaders who are most responsible for public education in New Jersey, we commit to finishing the job by working to implement all of the additional legislative and regulatory changes needed. Specifically, we will work to:

1) Incorporate the Common Core into New Jersey's high-quality academic standards;
2) Develop and support easily-administered assessments that support instructional analysis, and accountability;
3) Deploy a cloud-based longitudinal data system that tracks student learning growth, facilitates good analyses of "what works," and supports good decision-making by teachers, educational leaders and parents;
4) Create incentive, support, and accountability frameworks for our teachers, principals and school district leaders that are aligned with student learning growth and success;
5) Do what it takes to boldly turn around our most struggling schools and districts; and
6) Sustain reform conditions to advance and improve educational services across our state.

Together, these reform initiatives map directly to the assurances being sought by the United State Department of Education in this Race to the Top grant competition. More importantly, they form a coherent plan of action for a constantly learning, constantly improving public education system:

Incorporate the Common Core into New Jersey's high-quality academic standards:

New Jersey is nationally recognized for the quality and high level of its academic standards. The collaborative effort between states has developed an even better set of Common Core Standards which reflects a clear and high set of aspirations for students across the country that we see as

building on our state's work. We will adopt these standards for English Language Arts and for Mathematics, while retaining our own high standards in other subject areas.

Develop and support easily-administered assessments that support instructional analysis and accountability:

We will complete our building of an assessment and curricular support framework – the "Curriculum and Assessment Spine" – to link formative and summative data with teaching supports. For "untested" grades and subjects, and for formative classroom assessment, we will establish a state model of assessment but allow for local approaches to be used, so long as they meet rigorous quality criteria. In parallel, we will participate in two state-led consortia that are developing assessments based on the Common Core as part of a Federal grant program, with expected availability in 2014-2015. We are enthusiastic about the potential innovations that these consortia may yield, but do not believe that our reform agenda can wait four years. Finally, recognizing that new standards, assessments, and instructional practices require changes in classroom practice, we will provide large-scale professional development, coaching, and support to teachers to transition from our current system.

Deploy a web ("cloud") based longitudinal data system that tracks student learning growth, facilitates good analyses of what works, and supports good decision-making by teachers, educational leaders and parents:

Building on our new framework of standards and assessments, we plan to use data to inform instructional planning in our schools, to establish professional development plans and evaluate their effectiveness, to support evaluation of teacher effectiveness, and to monitor the performance of our schools. We will fully bring our data systems into the 21st century. By hosting a web or "cloud" based system to support school operations, instructional planning, human capital management, and public access to our schools data, we will create meaningful efficiencies for our school districts, support high-quality focused instruction, develop virtuous learning cycles about what works and why, and promote public stewardship of our school system.

Create incentive, support, and accountability frameworks for our teachers, principals and school district leaders that are aligned with student learning growth and success:

The quality of a child's teacher is the single most important factor in his or her educational attainment. So we will do everything we can to recruit, develop, support, and retain effective teachers in our classrooms. We will greatly emphasize the role of content courses in our teacher preparation programs, build on our alternate-pathway recruiting initiatives, extend provisional certification to qualified teachers from other states, and facilitate some recruiting and training activity under our County Executive Offices, working with partners that demonstrate the strongest records of success in these areas.

For teachers in the early years of the profession, we will encourage induction and support mechanisms that provide a solid foundation for career success. For our provisional teachers, we will encourage and provide high-quality coaching and support, both in our schools and off-site, to increase skill sets and content knowledge. After the provisional period, we will require that tenure decisions be based on effectiveness, not simply elapsed time.

We will establish a state framework that bases half of the evaluation score upon student achievement, and half on high-quality teaching and leadership practices. The framework will be developed deliberately by a stakeholder committee, incorporating locally-determined factors in addition to the state factors, and will be required in every participating LEA. It will enable the provision of professional development based on meaningful data. It will inform the granting of tenure. And to the extent that economic conditions require reductions in our workforce, we will use these evaluations as a basis for personnel decisions relating to retention.

Importantly, we will implement bonuses to reward teachers and leaders who accelerate broad-based student learning growth, and will place an extra emphasis on the growth of our most struggling students. A bonus pool will be allocated to high-achieving schools, where a local committee will apportion the funds to individual teachers, teacher teams, other personnel and programs. Up to half of a school's pool will be allocable to staff.

We will provide financial incentives for effective teachers who are willing to serve in schools, districts, and classrooms with concentrations of high-needs students. A career ladder, creating a path to "Master Teacher" or "Master Principal" status, will be developed that gives our professionals clear opportunities for advancement and influence.

Finally, we will develop an annual measure of school performance to inform school and district decision-making, and formalize minimum charter and district school performance criteria.

Do what it takes to boldly turn around our most struggling schools and districts:

We will support local LEAs in their selection among the four US Department of Education-approved models for reversing direction in our lowest-performing schools: turnaround, transformation, restart, or closure. To support turnarounds and transformation, we will create a network of "turnaround officers" to oversee and support the improvement of schools. For schools that are restarted, we will assist in the selection of a strong charter operator to manage the school. And in the event that a district elects to close a school, we will support efficient use of the space in support of student learning.

We will also support the implementation of local school board-authorized, teacher-led, small-scale Achievement Academies, embedded in the district. By establishing performance objectives and providing Master Teachers with professional discretion, we believe they can help provide more uniquely-suited schooling opportunities to our children.

Sustain reform conditions to advance and improve educational services across our state:

Despite adverse economic conditions, we will continue to support education funding. Despite enormous budget challenges in 2010, the State *increased* the level of state tax dollars committed to our public schools. We continue to demonstrate our commitment to our children with our pocketbook.

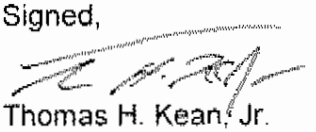
We will engage the offices of our Executive County Superintendents to facilitate contract consolidation, shared services arrangements between school districts, and to enforce sound labor contract standards. We will also reorganize the Department of Education with new divisions to

support Professional Excellence (human capital strategies for our teachers and leaders), Education System Efficiency (to improve service delivery and reduce costs), and School Effectiveness and Choice (to support board development, improved school design, school-level accountability and turnarounds).

The process that we will use to take input from stakeholders is described later in this grant submission.

Per the timeline discussed, we will work to introduce the educational reform bills and regulatory changes informed by this input by July 1, 2011, and to pass final bills and regulations to effectuate all of the reforms highlighted in this application no later than January 1, 2012.

Signed,



Thomas H. Kean, Jr.
Senate Minority Leader & Education Cmte. Ranking Member

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Signed,

Alex DeCroce
Assembly Republican Leader

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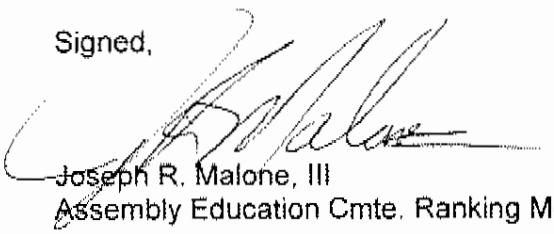

Joseph R. Malone, III
Assembly Education Cmte. Ranking Member

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Signed,

David Wolfe
Assembly Education Cmte. Ranking Member

SENATE CONCURRENT RESOLUTION No. 102

STATE OF NEW JERSEY

214th LEGISLATURE

INTRODUCED MAY 13, 2010

Sponsored by:
Senator M. TERESA RUIZ
District 29 (Essex and Union)
Senator THOMAS H. KEAN, JR.
District 21 (Essex, Morris, Somerset and Union)
Senator STEPHEN M. SWEENEY
District 3 (Salem, Cumberland and Gloucester)
Assemblyman PATRICK J. DIEGNAN, JR.
District 18 (Middlesex)
Assemblyman PAUL D. MORIARTY
District 4 (Camden and Gloucester)
Assemblyman JOSEPH R. MALONE, III
District 30 (Burlington, Mercer, Monmouth and Ocean)
Assemblyman RALPH R. CAPUTO
District 28 (Essex)
Assemblywoman MILA M. JASEY
District 27 (Essex)

Co-Sponsored by:
Senator Beck, Assemblymen Rumpf, Rumana, Ramos, Assemblywoman Voss, Assemblyman Wolfe, Assemblywomen Evans, Watson Coleman, Spencer, Assemblyman O'Scanlon, Assemblywoman Wagner, Assemblymen Fuentes and Wisniewski

SYNOPSIS

Expresses support for the submission of DOE's application for a federal Race to the Top grant.

CURRENT VERSION OF TEXT

As introduced.

(Sponsorship Updated As Of: 5/21/2010)

A CONCURRENT RESOLUTION expressing support for the submission of the Department of Education's application for a federal Race to the Top grant.

WHEREAS, New Jersey has been recognized nationally for its leadership in closing the achievement gap, establishing high academic standards and expectations for its students, and demonstrating student achievement on the National Assessment of Educational Progress; and

WHEREAS, the American Recovery and Reinvestment Act of 2009 has made available $4.35 billion for competitive Race to the Top grants to states making the most progress in education reform and innovation; and

WHEREAS, the Race to the Top program presents an opportunity to attract millions of dollars to New Jersey to invest in education and support progress toward Statewide educational goals and objectives; and

WHEREAS, the Race to the Top program focuses on four areas of reform, including: college and career-readiness standards and high-quality assessments for all students; preschool to higher education data systems; teacher effectiveness and the equitable distribution of effective teachers; and the provision of intensive support and effective interventions for the lowest performing schools; and

WHEREAS, Race to the Top grants are intended to save and create jobs and reform education, improve student academic outcomes, accelerate educational reform, and foster continuous improvement; and

WHEREAS, New Jersey has the opportunity to use the federal funding to be more innovative and creative in its educational investments in a manner consistent with the goals articulated by the United States Secretary of Education; now, therefore,

BE IT RESOLVED *by the Senate of the State of New Jersey (the General Assembly concurring):*

1. The Legislature expresses its support for the submission of the Department of Education's application for a federal Race to the Top grant.

2. Duly authenticated copies of this resolution, signed by the President of the Senate and the Speaker of the General Assembly and attested by the Secretary of the Senate and the Clerk of the General Assembly, shall be transmitted to Governor and to the Commissioner of Education.

STATEMENT

This concurrent resolution expresses the Legislature's support for the submission of the Department of Education's application for a federal Race to the Top grant. The competitive program is designed to promote education reform by encouraging states to adopt innovative practices relating to college and career readiness standards and high quality assessments for all students, preschool through post-secondary education data systems, teacher effectiveness and the equitable distribution of effective teachers, and support and interventions in the lowest performing schools. The State would receive as much as $400 million over four years if the application is successful.

Forbes.com

On The Cover/Top Stories

Homecoming Day For a Reformer

John Koppisch, 06.07.10, 12:00 AM ET

Bret Schundler, New Jersey's new education commissioner, comes across like the reassuring pastor he once planned to be. He's not a bomb thrower like his boss, Governor Chris Christie, who accused teachers of "using the students like drug mules" to talk their parents into voting for school budgets. But some of Schundler's ideas about education, formed 20 years ago, still sound provocative.

New Jersey schools run up a tab of $19,000 a year per pupil, more than any state after New York. Despite the lavish funding, Schundler says, "the state is failing to fulfill its responsibility." The U.S. has trailed badly in international comparisons for years, but what official has ever said his schools are part of the problem? He points out that only 42% of New Jersey's eighth graders are proficient in reading; that county and state colleges spend enormous sums on remedial classes; and that the elite districts with the huge property taxes could provide much better schools.

For Schundler, 51--a product of Westfield (N.J.) High, where he was All-State in football--the key to improving the schools is to improve the quality of the state's 110,000 K--12 public school teachers. That starts with tenure, which in New Jersey guarantees a lifetime job to the vast majority of teachers after a cursory review in their third year on the job. Pay raises have little to do with how hard teachers work or how their students perform; instead pay is calculated under a rigid, union-negotiated formula based on how many years teachers have put in and how many extra diplomas they've collected. "Our system is horrible," Schundler says.

Instead he would award tenure "based on effectiveness, not simply elapsed time," and only after five years. He would use state money to pay annual bonuses to the best teachers, especially if they volunteer to move to tough schools. He would make it easier for out-of-state teachers or career switchers to be certified in New Jersey. He would clear a path for the best teachers to start new schools in their district--

what Schundler calls "achievement academies"--and "be compensated like true professionals." Salaries for New Jersey teachers range from $45,000 to $125,000; the median was $59,500 last year.

To shift from a seniority to a merit system, Schundler wants to kick the state into the information age, using data to help decide which teachers get tenure, bonuses, promotions--or the boot. The teachers' union "says you can't measure student learning," he says. "I reject that." He aims to assess every student's monthly, quarterly and annual progress. A central computer system will keep track of everything (and how students turn out--through college and in the workplace). This will help pinpoint the curricula, programs, schools and other factors most useful to turning out better students.

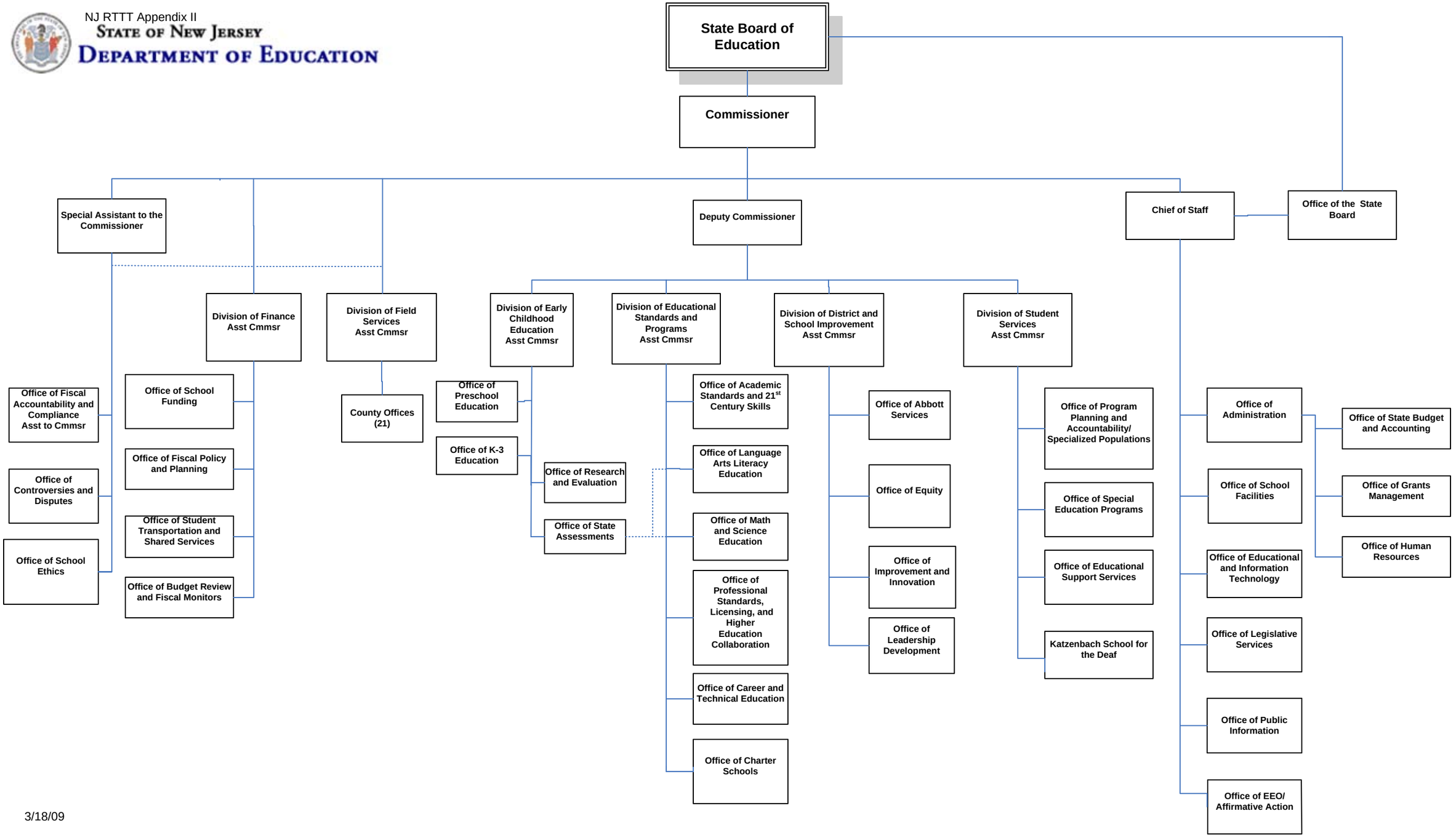
While the union hasn't lined up behind his reforms, the public is with Schundler, and there is wind at his back blowing from Washington. Education Secretary Arne Duncan is dangling $3.4 billion in front of states in his Race to the Top initiative to spur reforms such as New Jersey's.

Some of this is like homecoming day for Schundler. It was his dogged but unsuccessful fight for vouchers in the early 1990s when he was mayor of Jersey City that earned him credibility as an education reformer. Later he started one of the country's early charter schools. Today much of the thinking on education reform has caught up with him. Says he: "There's a moral imperative to do what's right for kids and not worry about the political resistance."

Sidebars:
Think College
Fire Bad Teachers
Tech and Teaching

Back to What Schools Can Learn From Money Managers

STATE OF NEW JERSEY
DEPARTMENT OF EDUCATION



3/18/09

draft

TITLE: Chief Race to the Top Officer (CRO)
REFERENCE #: To be finalized
SALARY: $125,000
HOURS OF WORK: 8:15 a.m. – 4:15 p.m.
DIVISION/LOCATION: Trenton, NJ
DIVISION: Office of the Commissioner
REPORTS TO: Commissioner

DESCRIPTION

Strong-willed executive responsible for implementing, coordinating and monitoring broad activities within the NJDOE and in school districts (LEAs) as part of several hundred million dollar federal program, Race to the Top (RTTT).

Responsible for the planning, development, and implementation of policies, programs, and practices in support of the functional and operating procedures. Provides leadership and technical assistance to other managers and to LEA staff through specialized services.

Ensure compliance with federal and state laws and regulations, including but not limited to financial and HR laws and regulations.

Measure the "Return on RTTT Investment"- effectiveness of programs and spending within NJDOE and LEAs.

Attends and makes presentations at stakeholder meetings as required.

Coordinates other support and monitoring services, e.g., auditing and legal reviews.

REQUIREMENTS

Education: graduate degree in education, law, public administration, public policy or business strongly preferred.

Experience: Major department head or chief operating executive in a large public or private organization with at least a $200 MM operating budget. Experience managing a large (200 MM +) grant is strongly preferred. Teaching and school administration strongly preferred. Government or non-profit experience strongly preferred. Eligibility for a New Jersey Standard Instructional or Educational Services Certificate is preferred.

Candidates may be required to demonstrate the ability to communicate clearly and effectively both verbally and in writing at a high professional level. Prospective candidates should be able to complete assignments independently, as well as to work productively in collaborative situations, and to relate positively to public and private agency personnel.

Dpartment of Education is an Equal Opportunity Employer, has an Affirmative Action Program, and will not discriminate against any person because of race, creed, religion, color, national origin/nationality, ancestry, age, sex/gender (including pregnancy), marital status/civil union partnership, familial status, affectional or sexual orientation, gender identity or expression, domestic partnership status, atypical hereditary cellular or blood trait, genetic information, disability, (including perceived disability, physical, mental, and/or intellectual disabilities), or liability for service in the Armed Forces of the United States, and is committed to Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act.

Appendix C1: Instructional Support Components

Overview

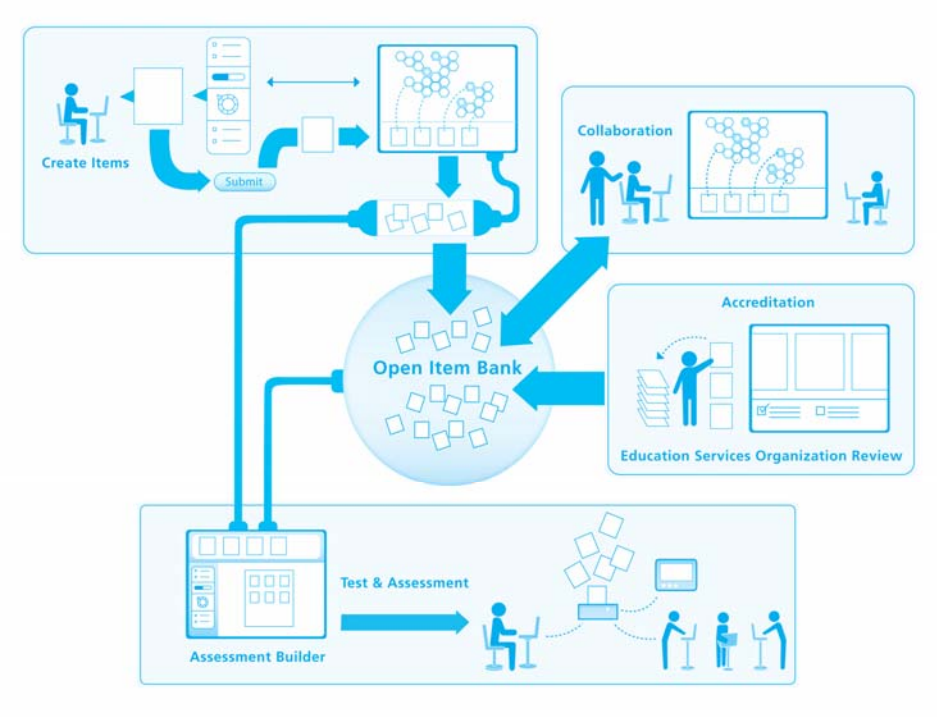
New Jersey's Instructional improvements system (IIS) will be designed to help teachers use data to develop a rich picture of student ability and plan high impact instruction. In developing an IIS that goes beyond the basic assessment administration functions and focuses on the functionality that integrates data analysis and instructional planning, NJDOE believes that this system is best positioned to help educators make the right decisions that lead to student achievement. With this platform educators can:

- Organize and customize standards to define the scope & sequence of instruction,
- Create, edit, organize and search for items,
- Develop assessments from pools of items aligned to standards,
- Access test items from a national free open source item bank that is aligned to the Common Core Standards initiative,
- Administer assessments in two modes – online where student responses are immediately, scored or via paper/pencil where student responses are scanned and then scored automatically by the system,
- Review the data in a library of insightful online reports, and
- Create, edit and organize instructional action plans.

The platform will be content agnostic and allows districts to input a variety of items and assessments (e.g., internally developed, sourced from other vendors) as long as they have the appropriate copyrights. This content becomes the foundation to generate data that can be presented and visualized in various ways to illuminate to educators their students' performance.

This section focuses on the tools directly relevant to instruction, the continuous development tool are covered elsewhere. Example screenshots and stories and stories are used below to visualize the concepts in a concrete manner.

The overall structure of the system is illustrated in the following diagram:



School Based Reporting

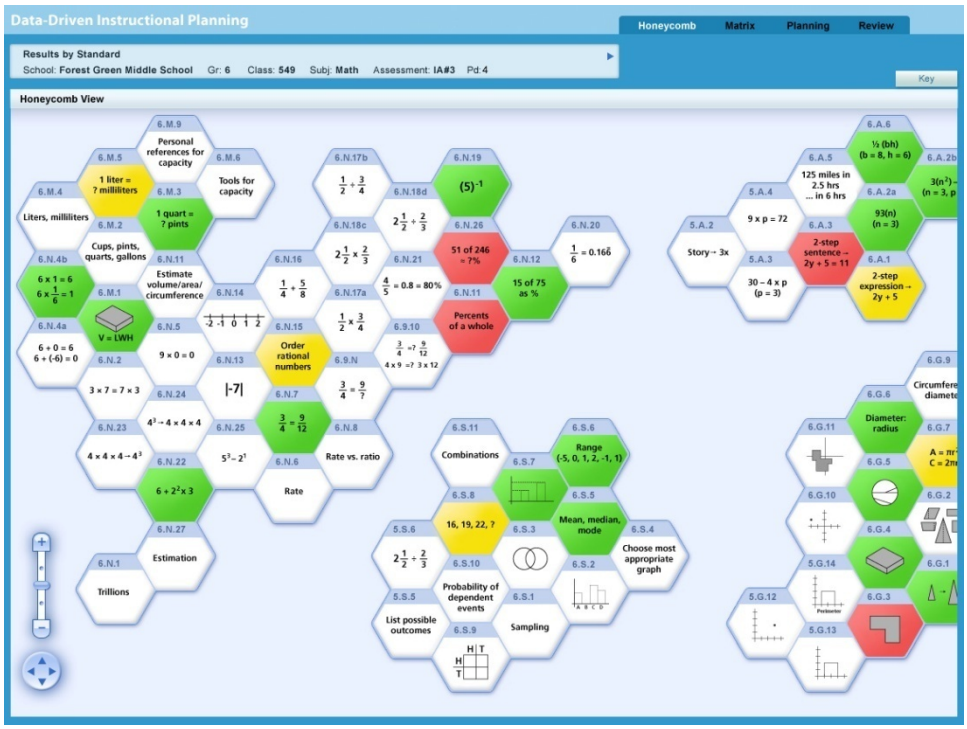
The IIS will include multiple ways of visualizing data and providing valuable tools to help educators take action based on the data they see. Participating New Jersey LEAs needs for school based reporting can be met by two key components in our platform: Action Planning and Reporting. As with the rest of the system, Action Planning and Reporting uses roles-based permissions to ensure teachers only see individual data for students they serve, principals can only see individual data for teachers and students at their school and coaches could have access to the students/teachers that they support.

1. Action Planning – The Cornerstone of the system

Action Planning is a highly interactive tool to support teacher data driven instructional planning. The Action Planning tool will provids functionality for teachers to interact with their students' performance data and create an instructional plan in the system. The goal of this tool is to provide immediate feedback to teachers after an assessment such that the data is still fresh and actionable to have an impact on instruction and student achievement.

Teachers can view real-time data of their students' assessment results in an intuitive user interface, the 'honeycomb' that depicts student performance in the context of the curriculum spine. In the sample diagram below, each hexagon represents a math content standard and student performance on the standard is shown with customizable red/yellow/green color coding. This visual representation of

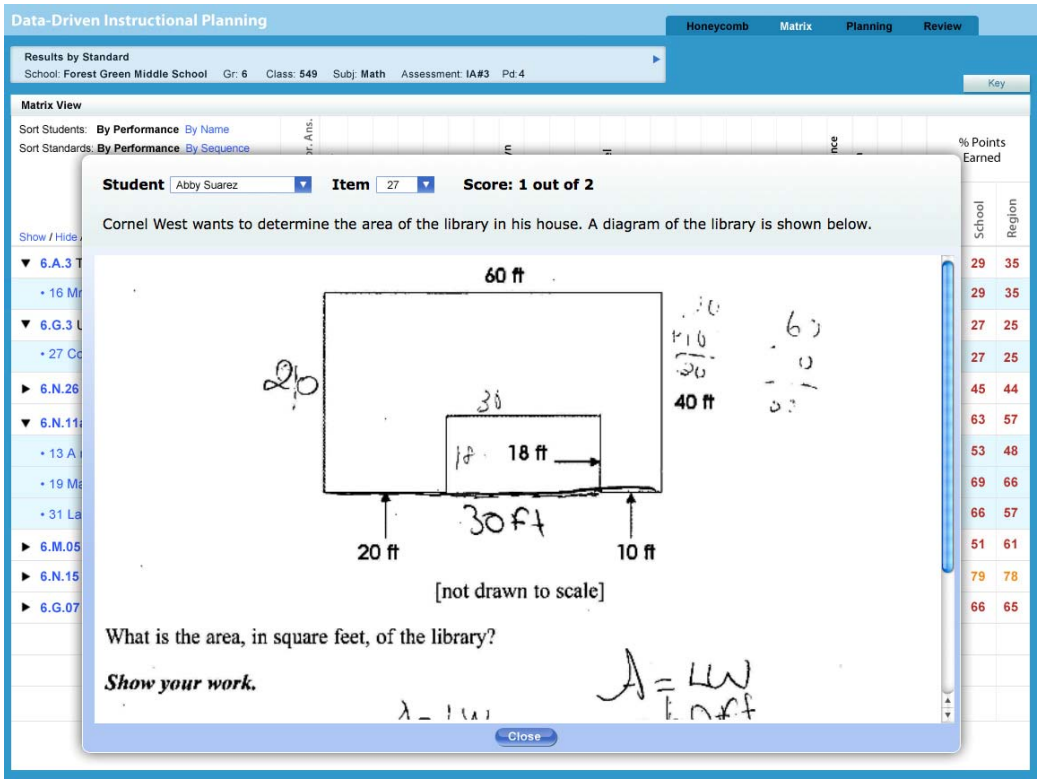
either class or student performance enables teachers to quickly identify areas of strength and weakness and understand the impact of performance of both the standard and related precursor skills.



Color coding representation of performance levels helps teachers answer the questions:

- Where do individual students do well?
- Where do individual students need additional support?
- What content areas would be useful to obtain additional information?

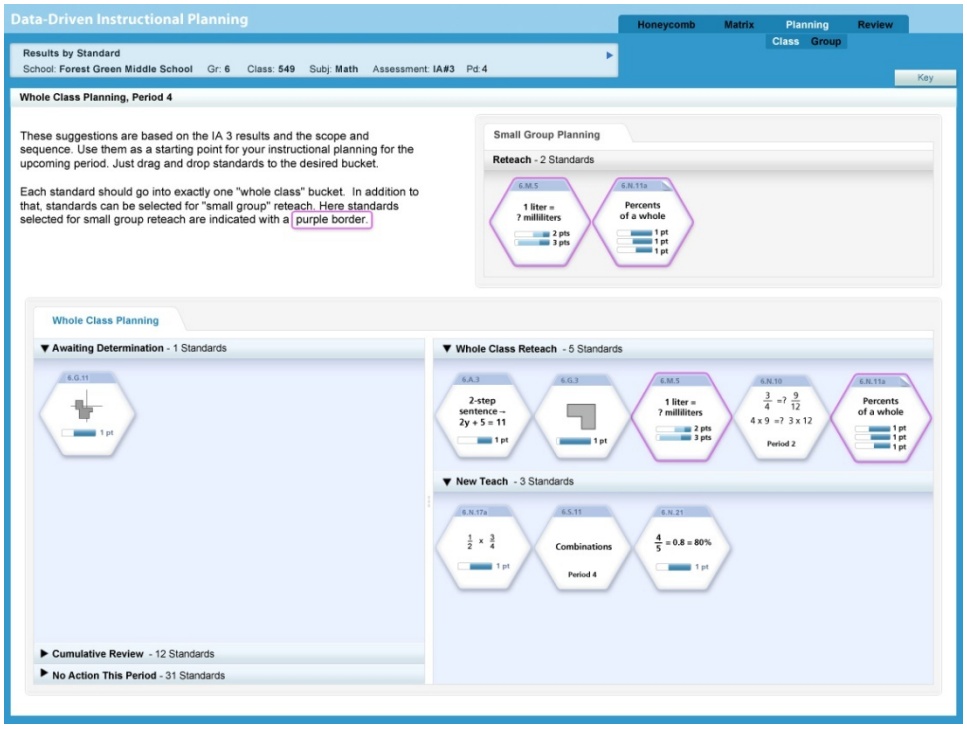
The whole class view of the honeycomb report enables teachers to see class performance on each standard assessed, standards the class has mastered and the content areas that should be taught next or re-taught. Zooming into a standard, the teacher can mouse click on an individual hexagon to see the standard description, his/her students' performance compared to that of the school's and the district's as well as historical performance if the standard had been assessed before in the same school year. The teacher can also view details of the administered assessment items and analyze errors using distracter analysis or reviewing image of student work (example shown below) to better understand student thinking.

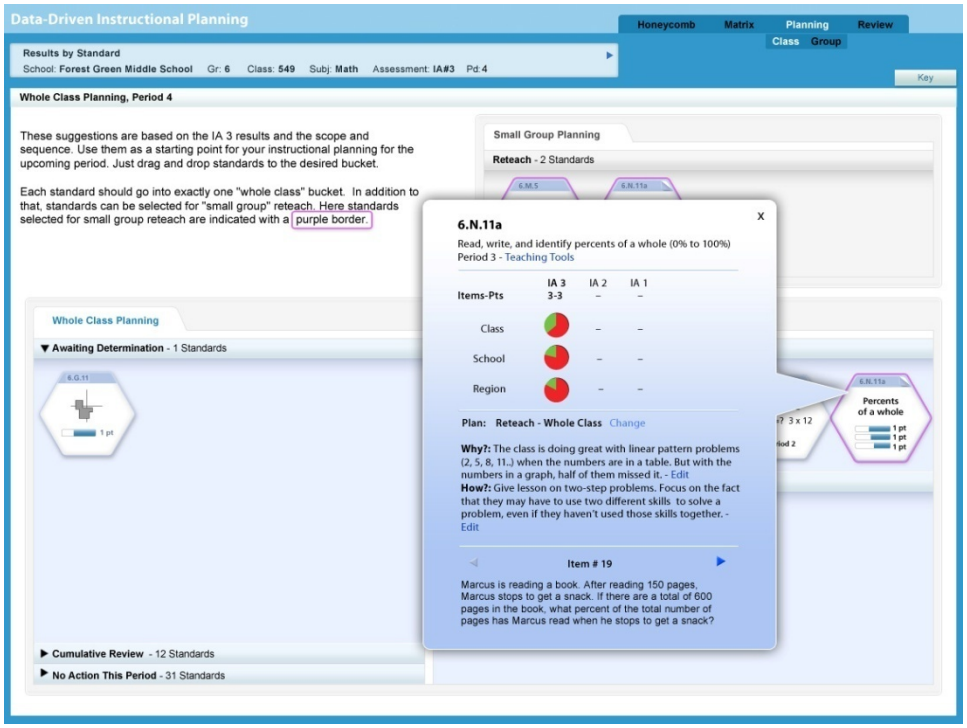

Data-Driven Instructional Planning
Honeycomb
Matrix
Planning
Review
Results by Standard
School: Forest Green Middle School Gr: 6 Class: 549 Subj: Math Assessment: IA#3 Pd:4
Key
Matrix View
Sort Students: By Performance By Name
Sort Standards: By Performance By Sequence
% Points Earned
School
Region
Student Abby Suarez
Item 27
Score: 1 out of 2
Cornel West wants to determine the area of the library in his house. A diagram of the library is shown below.
60 ft
40 ft
18 ft
30 ft
20 ft
10 ft
[not drawn to scale]
What is the area, in square feet, of the library?
Show your work.
Close


Barnett, Jason
6.M.7
#2
0/1 pts
6.M.7
Estimate volume, and circumference (see figures identified in geometry strand)
Period 3 - Teaching Tools
IA 3
IA 2
IA 1
Items-Pts
1-1
Class
School
Region
Item #2
Roberto drew a diagram of his triangular garden, as shown below. (Diagram of right angled triangle: Base length = 12.2m, Height = 6.7m) A=½bh. Estimate the area, in square meters, of Roberto's garden.
1 liter = ? milliliters
Tools for capacity
Estimate volume/area/ circumference
Personal references for capacity
List possible outcomes
Period: All 1 2 3 4 5 6
Order: Standard % Points
Rate vs. ratio
Combinations
Range (-5, 0, 1, 2, -1, 1)

Whole class planning

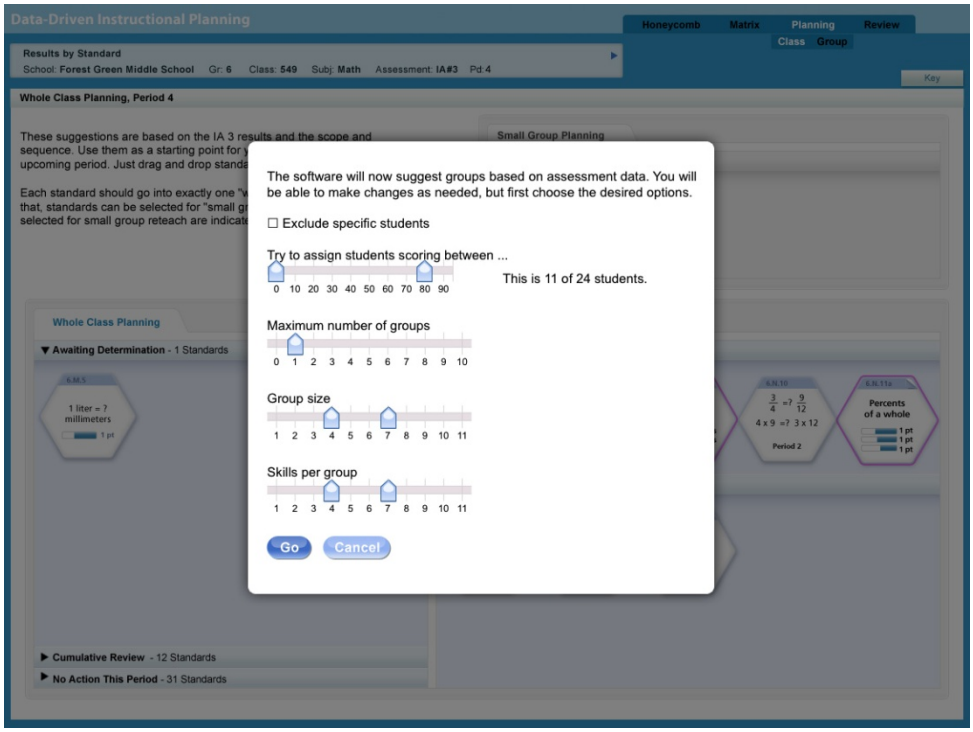
As teachers perform analysis at the standards level, they can tag standards they want to review with or re-teach to the entire class and those that they may want to cover with only a few students in a small group instructional setting. For each standard that teachers select to review or re-teach, they can capture their analysis of why students had a difficult time with that standard and what strategies they will use to re-teach or review it. This information is then incorporated into the teacher's instructional plan.

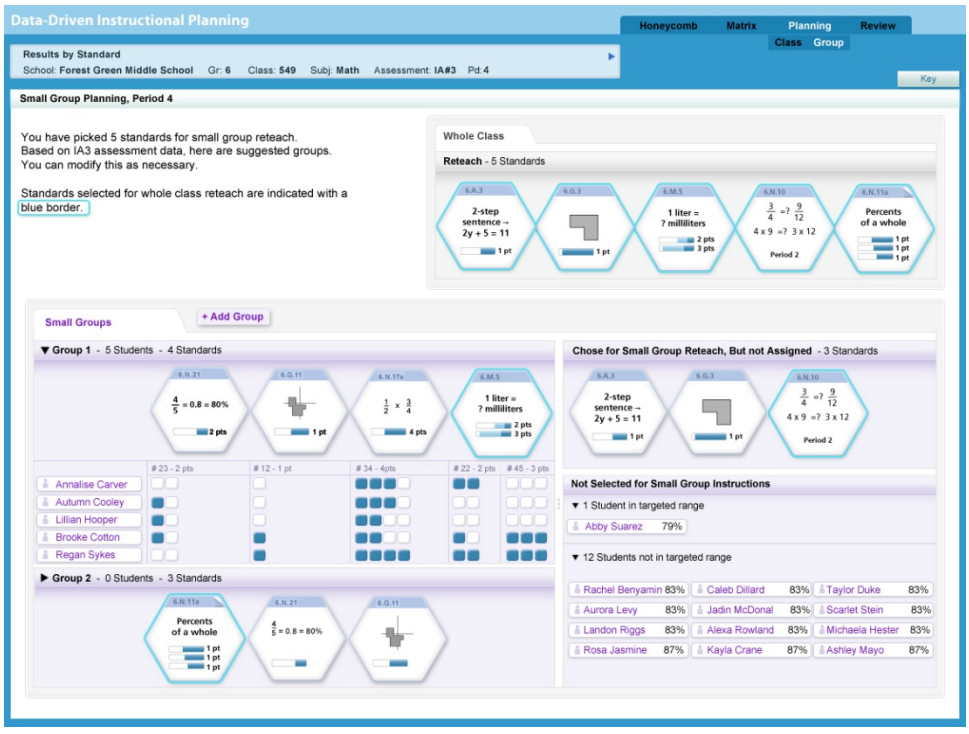




Small group planning

Within Action Planning teachers can analyze performance data for individual students. Teachers may focus on particular students that need additional instruction in specific areas. Viewing a student's performance data in the context of inter-connected standards (e.g., the honeycomb view shown previously) allows the teacher to easily determine what precursor skills or concepts the student understands and develop instruction that builds on the student's foundation. Teachers are better informed when creating small groups that need intervention in the same skill area For ease of use, a grouping wizard is available to suggest possible small groups. Teachers can choose to use this tool to form small groups initially and then modify them as needed in their instructional plan.





Once teachers have created an instructional plan, they can use it to track their own progress before the next assessment. Teachers can also use the plan to determine areas of professional development needed/desired and as a launch pad for discussions with their coach.

Action planning management

Teachers can go to their dashboard to monitor their own action plans and determine whether previous instruction (whole class or small group-wise) was successful based on subsequent assessment results. Principals and instructional leaders can view teachers' instructional plan in order to work with teachers to identify areas of professional development and/or instructional resources, strategies needed to address specific standards. Principals can also utilize action planning to determine how school personnel (including coaches, teachers) are using the system to analyze data and monitor the fidelity of internal assessments and data analysis.

Using action plan

Teachers can print their instructional plans in PDF and use them to track their progress offline throughout the next instruction period.

2. Online Reporting

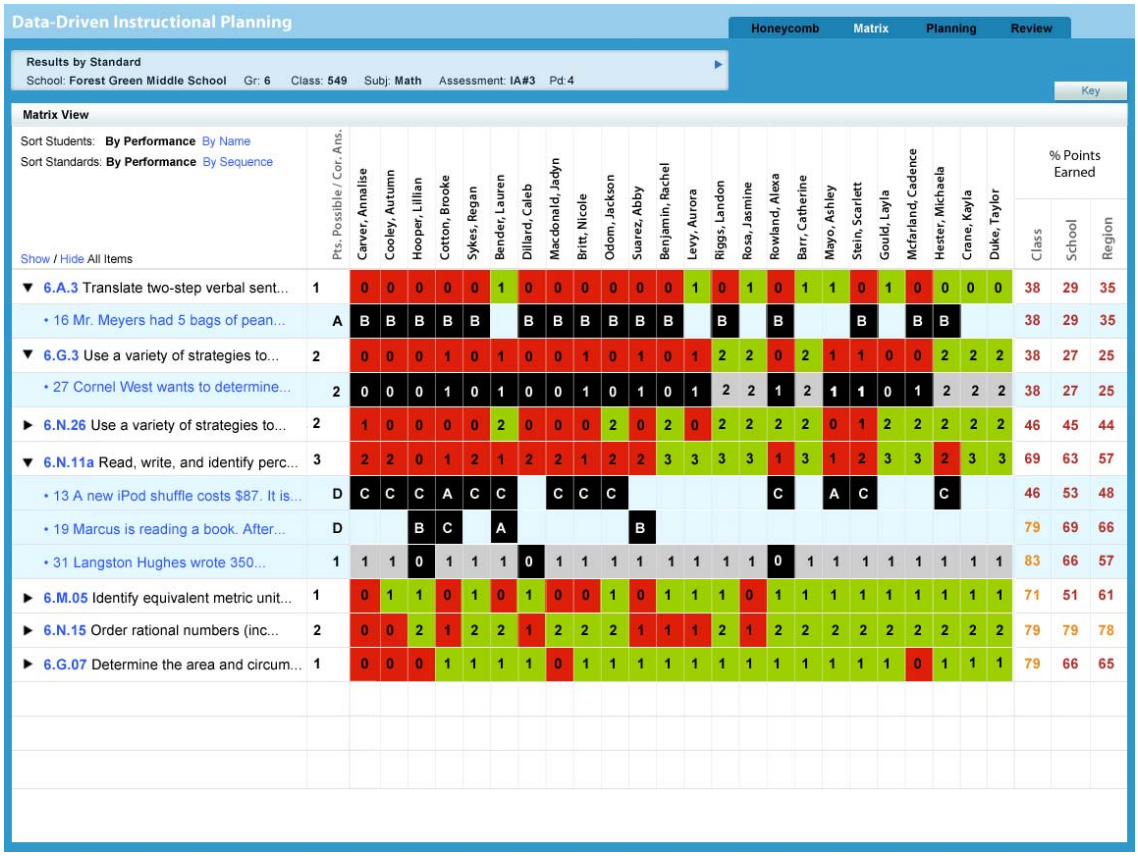
Reporting tools will provide functionality for users within the district to view and analyze data as well as evaluate effectiveness of instructional and assessment decisions and practices. The overall goal of Reporting is to make information readily available to district and school personnel in support of their day-to-day decisions that impact assessment and instruction. The system is smart and provides default views of student performance data based on the user's role to minimize the number of "clicks" needed to navigate to a relevant report. For example, the default view for a teacher would be students in his/her class.

Report navigation

Users will be able to access reports (including those that have been published by the district, their school or have been shared with them by others) from the reporting homepage and manage their own saved reports. Users can also access reports from their dashboard, which can be customized such that frequently used reports can be accessed with a single click. District and school administrators can create reports with pre-selected parameters and publish them to users. When users run these reports, the resulting data set is based on the roles and permissions of the user running the report. If the user does not have access to any data based on the pre-selected parameters, the system will notify the user that s/he does not have appropriate permissions.

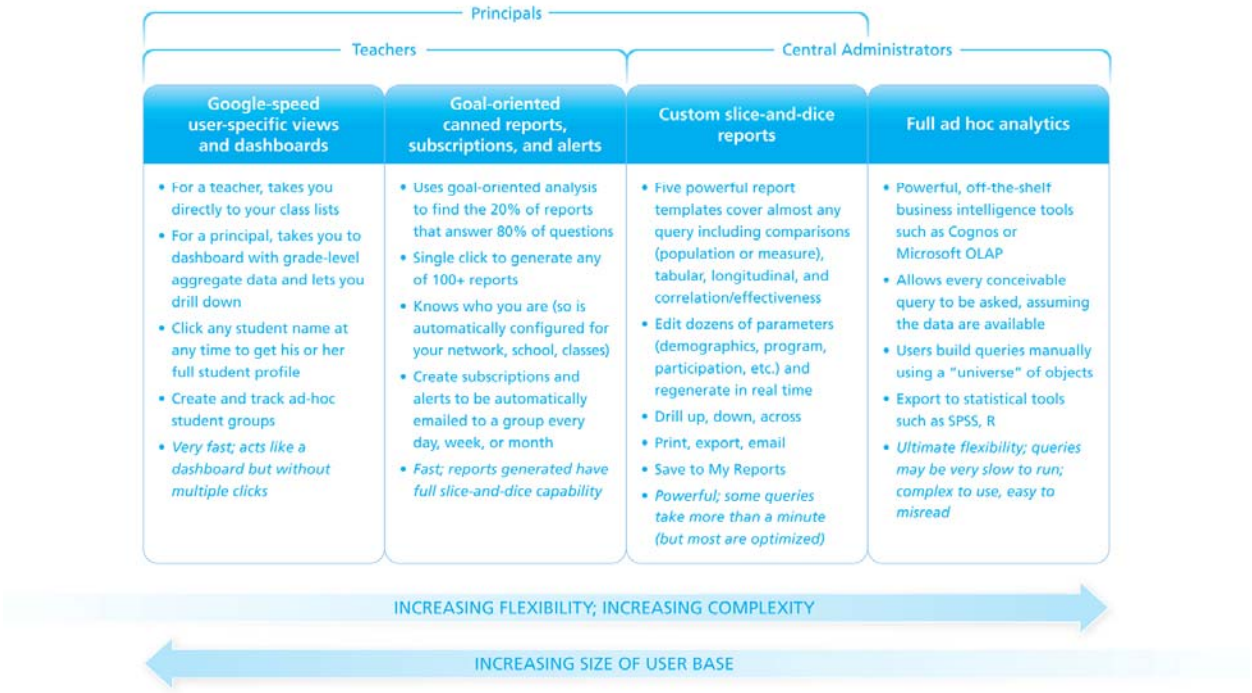
Data analysis using reports in the IIS

The IIS will provide several means of reporting at different levels. One example screen shot is provided for item level response and distracter analysis:



The matrix view provides a familiar representation of student performance. With this report, a teacher can quickly review item level performance on an assessment relative to content standards. For multiple choice problems it is easy to determine who selected the correct answer. For those who chose incorrect answer, it is easy to determine which distracter was selected. Reviewing the distracter can often provide insight into student misconception and whether or not a question is written. Additionally, a user can sort by item difficulty and student performance to obtain a different perspective of student achievement. For open response items, a teacher can link to an image of the student work simply by selecting the score.

Other reports targeted at different users are described in the following diagram:



Item Storage and Test Generation

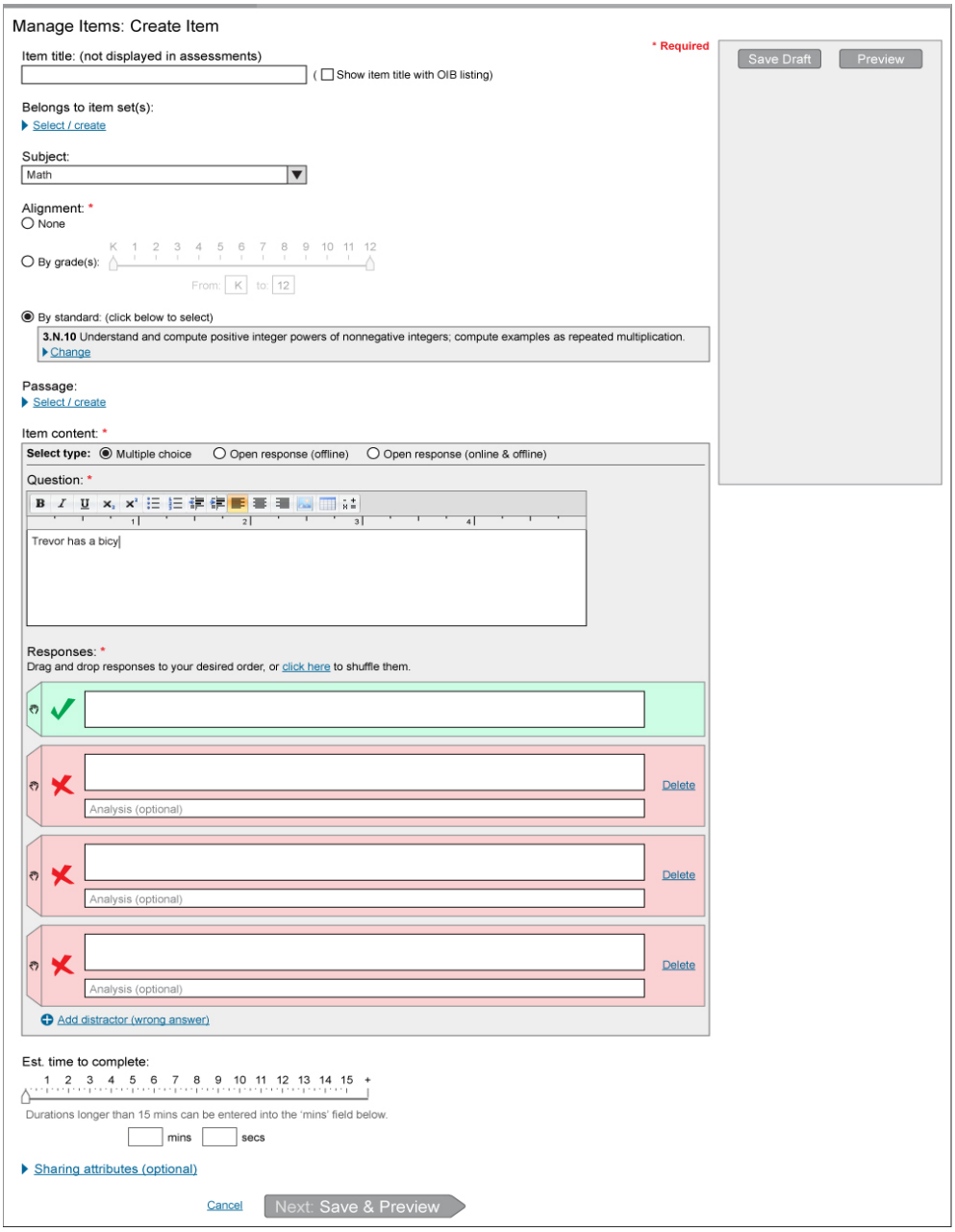
The assessment creation work flow begins with item generation and storage. The system will support multiple item banks and access to content will be defined by user roles. Depending on a user's role and various permission settings, a user may be able to function within any of the following secure areas:

- District Level
- School Level
- Individual Level
- Open area
-

The district, school and individual permission level are relatively clear. A user will only have access to content at their level or below, for example, a district level user can access content at the district or school level, while a principal can only access content at their school. The Open area is an item bank permission level designed to support the future Common Core Standards. Item content across the country aligned to a common set of standards would be useful to any educator teaching to this same set of standards. Should a

district permit sharing to the Open area, a user would be able to share assessment items with other users throughout the country. As the Common Core Standards are being established, the Open item bank will serve as a repository for assessment items made available by users throughout the country to be aligned by other users to any of the state standards stored in the system. Once an item has been aligned to a particular state standard, the item will appear as a standard aligned item for all users in the same state..

Multiple methods are available to input items into the platform. A user can choose to upload items in batch using a standard file format or create individual items using the item creation tools in the platform. For ease of use, the platform offers a “What You See Is What You Get” (WYSIWYG) editing tool and formula creation/editing tools for users to input item content. Entering item content or a graphic using these tools is very similar to entering text or graphics in any common word processing tool such as MS-Word. In the sample graphic provided below, graphics or text can be cut and pasted into any of the item text boxes. Formulas can also be created in any textbox with a formula editing tool or provided as a graphic. A preview window is available on the right hand side of the screen.



The above graphic depicts the item entry view for a multiple choice item. Different item types such as true/false, yes/no, short answer, essay, multiple-select, matching, gridded response, fill in the blank, open response or explain your thinking will all be supported by the system.

One step in the item creation process is the assignment of basic metadata such as subject, grade range, key word search tags or standard alignment information. New Jersey Content Standard information is preloaded into the system and provided to all users. Common Core Standards will be made available once approved for use. In addition, the system provides the tools to allow New Jersey LEAs to customize the standards as needed.

A user aligns an item to a standard by simply selecting the state standard from the provided list. A user may align a single item to multiple standards via the use of composite rubrics. Each component of a composite rubric can be aligned to different standards with customized weighting. Item performance can then be reported as a total item score or as separate scores for each component of the rubric.

An assessment item is completed after the item stem, possible answers (distracters), scoring rubric and item metadata is provided. Once this step is complete, an LEA has the option of implementing an item review and approval process to the workflow. This is an optional functionality that districts can use to have a quality assurance process in place for item review prior to publishing the item for use in the district. Depending on user permissions and policy settings, an assessment item may be published to various shared item bank areas for use by individuals with the appropriate rights to the shared area. For example, a district level user may create a benchmark assessment item that can only be shared with other district level users for review, editing, or use in a district wide assessment. A classroom teacher would not have access to that item when creating a classroom assessment. A classroom teacher can only create items for use in their classes. Sharing to an item bank with a wider audience must be approved by a user with rights at the appropriate level of the organizational structure if the district has chosen to activate item review and approval. AN LEA will be able to assign the responsibility of content review and approval to the appropriate individual in the district.

Users can search for items by standard, scope and sequence of instruction or by advanced search. The search result provides a list of items to which the user has access based on his/her roles and permissions. Users can always see items they created.

Test Generation

Once the item content has been uploaded and approved for use, users can access the available content for assessment creation. The simplest method of creating an assessment is to select the standards to be assessed and use the advance search capabilities to identify potential items. For example, if a teacher prefers to only search for multiple choice items that s/he has not previous administered aligned with the curriculum spine, the search tool would provide a list of suggested items for the teacher to assemble into a classroom assessment for his/her student. The teacher can accept a default arrangement of items on an assessment template, choose a random number of assessment questions or drag and drop the items onto an assessment template in a particular order. Once the items are identified the assessment author can format the arrangement of the items, add section breaks to separate different questions, add headers, customize the presentation of the assessment to suit different content areas and add any necessary directions. The following assessment options are also available for use:

- Optional numbering schemes for bubble sheets to prevent inadvertently skipping lines
- Randomize question order for multiple assessment forms
- Large bubble answer sheets for use with younger students
  -

For more involved assessment scenarios, such as district wide benchmark assessment additional functionality is provided that allows users to create accompanying documentation such as test administration instructions, special directions for students with accommodations and marking rubrics. Once the assessment has been created, it should be submitted for review and approval. The approval process is similar to the process used for item review. Once the assessment is approved, it may be published and scheduled for delivery. The assessment can be schedule for delivery by assigning the assessment to a class, course, or individual students. All assessments, regardless of the development stage are stored and can be managed by an intuitive user interface which allows users to arrange and organize their assessments as they see fit. A dashboard is provided to help users manage assessments that are in process, waiting for review, approval or need to be deployed. Users with the same permission rights will be able to access all content secured by the user's permissions.

Answer Sheet Preparation and Scanning

Assessment Administration

Once an assessment has been published and assigned a report will be available to show which student groups, classes, grade levels or schools will take the test. Also, various options become available for automatic and immediate printing of answer sheets. Districts have the option to print assessments centrally or off load the responsibility of printing assessments to schools or any combination in between for each assessment. The assessments and answer sheets will be available in PDF and can be printed on plain paper printers with minimum resolution of 100 dpi**.** Answer sheets will be populated with student and assessment information encoded in a barcode and minimum identification information such as student name will be provided in plain text.

Should a pre-slugged answer sheet be unavailable for a student (e.g., a new student in a teacher's class whose enrollment information has not been propagated to the assessment system) the student can be provided an answer sheet that allows the student to write in identifying information such as name and student ID for automatic association with a student profile during the scanning process. If that information is not available or incorrect, the scanning system will alert the operator of an error. To review errors, an operator would login to the system and view the flagged images for resolution. In this case the operator would be requested to assign the results to a student profile.

Scanning assessment results

The scanning process captures students' responses for multiple choice, true/false, yes/no, multiple-select, matching and student gridded response items. Teacher gridded responses are used to score short answer, essay with single or multipart rubrics and show/explain your work item types. Teacher dedicated bubbles are provided on the student answer sheet to capture teacher evaluation. Additionally, because open response images are captured for student work, the system will also capture any qualitative teacher feedback provided within the image capture area. When the system is unable to identify a response, the error resolution process discussed earlier is triggered. This process alerts operators to login to the system and resolve scanning/scoring errors, omitted marks, double bubbles and other similar data entry errors. (Note: Scanning hardware must be able to scan with a minimum resolution of 100 dpi and support TWAIN drivers in order to properly scan results, additionally, an internet connection must be available at any scanning site and there is no limit to the number of scanning sites permitted). At the end of a scanning session, the system automatically uploads the data to Wireless Generation central servers and system automatically scores the multiple choice, true/false, yes/no, multiple-select, matching and student gridded response items and calculates an assessment score including teachers' grading for open response items. The data is stored and available for review on class and student summary reports. Under normal load scenarios and depending on available district bandwidth, this process should not take more than 10 minutes. Additionally, upon completion of a scanning session, the operator may access the scanning session logs to print a report about the scanning session. An assessment completion report available online documents student groups, classes, grade levels and school who have and have not completed assessment the paper pencil assessment and/or the online version of the assessment.

On-line Test Administration

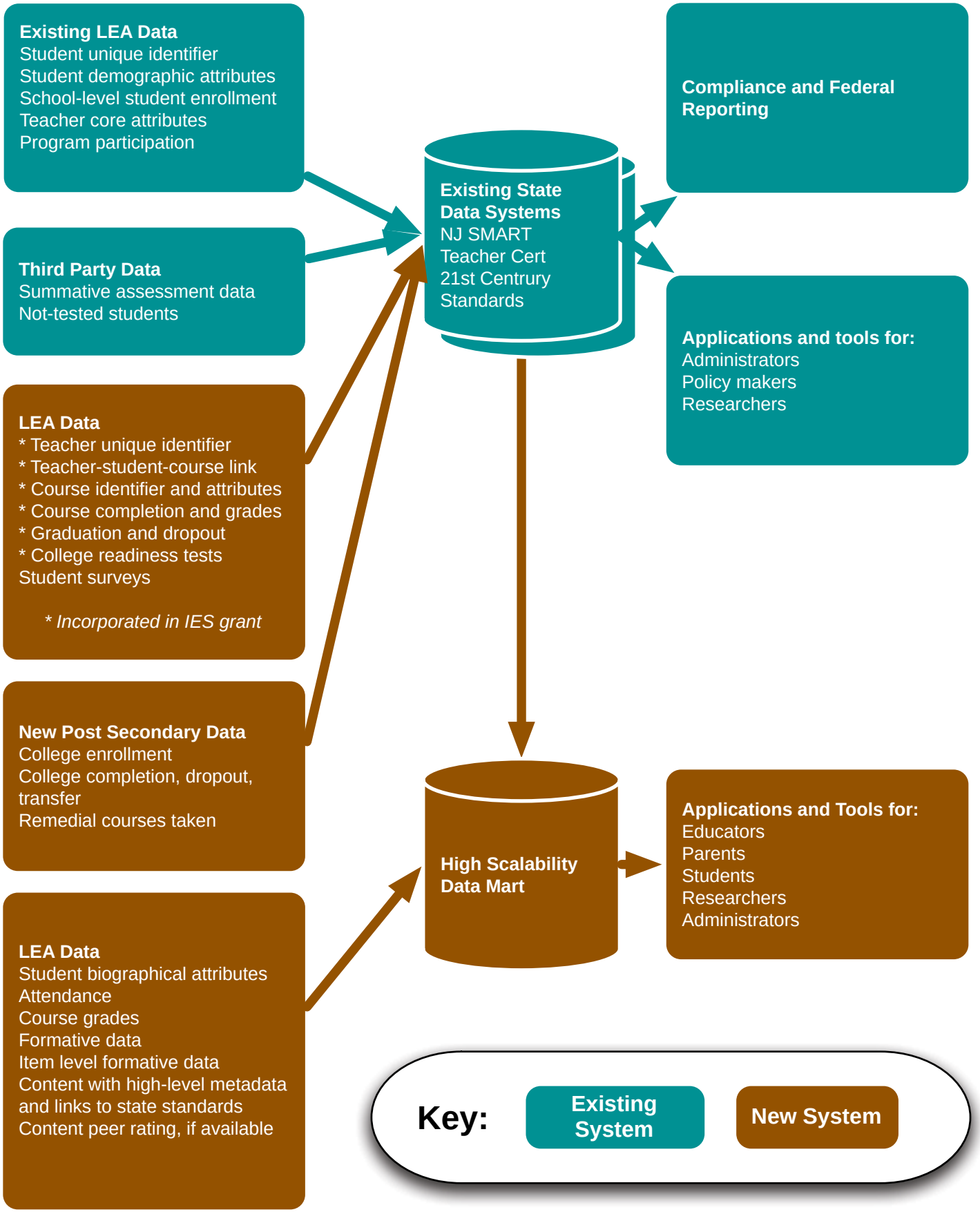
Constructing an online assessment is similar to that of a paper and pencil assessment. Item and assessment creation are exactly the same with the exception that the user must designate that the item and assessment are available for deployment online or both online and offline. Additional parameters available only for online assessment administration also need to be considered. For example, assessments creators can choose to permit students to pause and resume a test at another time, to provide practice questions to assess the child's ability to use the computer properly, and set a time limit for the test.

During the assessment deployment process the user may designate the students, courses, classes, or schools assigned to take the assessment on line or offline (Note: regardless of the modality of assessment, results will be treated similarly and aggregated as if assessment is one assessment). The deployment process for online assessment will also designate other parameters such as assessment time windows and set user id and password dissemination policies. These policies may differ for younger and older students. For students who do not have a user id and password. The assessment proctor will be provided temporary user id and passwords. These temporary passwords would prompt the student to enter their name. This information would be used to automatically match the student results to the correct profile. In the event

that this is not possible, the teacher would be notified to resolve the error using the same work flow used to resolve scanning errors.

Basic computer skills such as operating a keyboard for text entry or using a mouse to select multiple choice options are required for a student to answer questions. However, some items, such as math open response items, maybe more conducive to offline assessment. All of the same question types that are available offline are also available online. Once the student navigates through the login page s/he will be presented a dashboard showing the assignments to be completed. After selecting the appropriate assessment to start, the student will be presented with instructions and sample problems chosen by the assessment author. During the assessment, the student will have the option to view a timer, and go back to previously completed items and change answers if necessary. Various tools such as a calculator or a ruler maybe provided for appropriate items should the assessment author decide to provide them. Every reasonable attempt will be made to restrict access to other information systems, however such attempts are often interpreted by the host computer as a hostile action and security software may make this impossible. Therefore, such restrictions are often best handled by district IT system administrators and the State will work with LEA IT staff to identify the policies that would be best to prevent access to unauthorized use of information systems to aid completion of the assessment. In the case of support for special needs students, these students can be provided special access to tools such as text to speech readers, magnifiers and large font presentation of text.

After the test is completed, the system automatically scores appropriate questions. Items requiring a human grader will be sent for online review and marking. Students are provided immediate feedback about their performance on automatically graded items and they can print the reports should they choose to. Assessment completion reports will be available on line and printable so educators can know that there is data before they go into Action Planning to analyze student performance and make instructional decisions. They will appear in the same manner as the assessment completion reports for scanned assessment results with the exception that assessment completion time will be included for students completing the timed online assessments.


Existing LEA Data
Student unique identifier
Student demographic attributes
School-level student enrollment
Teacher core attributes
Program participation
Third Party Data
Summative assessment data
Not-tested students
LEA Data
* Teacher unique identifier
* Teacher-student-course link
* Course identifier and attributes
* Course completion and grades
* Graduation and dropout
* College readiness tests
Student surveys
* Incorporated in IES grant
New Post Secondary Data
College enrollment
College completion, dropout, transfer
Remedial courses taken
LEA Data
Student biographical attributes
Attendance
Course grades
Formative data
Item level formative data
Content with high-level metadata and links to state standards
Content peer rating, if available
Existing State Data Systems
NJ SMART
Teacher Cert
21st Centrury Standards
High Scalability Data Mart
Compliance and Federal Reporting
Applications and tools for:
Administrators
Policy makers
Researchers
Applications and Tools for:
Educators
Parents
Students
Researchers
Administrators
Key:
Existing System
New System

NJ SMART Steering Committee

Bari Erlichson, Director of Office of Education Data – Chief Data Steward

Jack Moticha, Acting Chief Information Officer

Mark Falchek, Manager of Legacy Data Systems

Barbara Gantwerk, Assistant Commissioner for Student Services

Yut'se Thomas, Acting Assistant Commissioner for Finance

David Joye, Director of Office of State Budget and Accounting

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Rochelle Hendricks, Assistant Commissioner for District and School Improvement

Ellen Wolock, Acting Assistant to the Commissioner for Early Childhood Education

Tim Peters, Director of Office of Assessment

NJ DOE Data Working Group
Data Stewards

Assessment
Don White

Special Education
Andy Samson

Violence and Vandalism
Tom Collins

Teacher Quality
Cathy Pine
Faith Sarafin

Enrollment/Membership
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Danielle Anderson-Thomas

Career and Technical Education
Marie Barry

Neglected and Delinquent Programs
Monica Johnson

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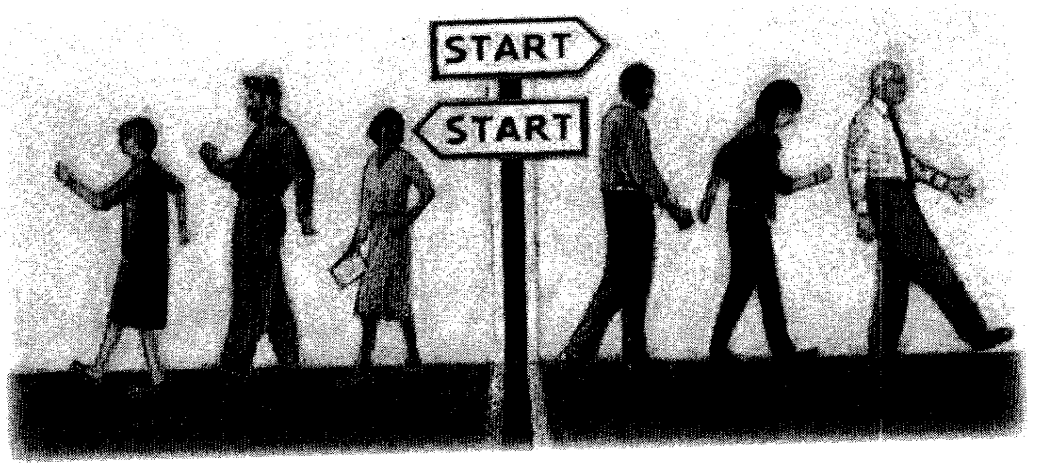
COMMENTARY

The Impact of Alternate Routes to Teaching



—Steve Braden

How Teacher Preparation Has Changed, and Why It May Need to Change More

By C. Emily Feistritzer

Back to Story

Who would have thought 25 years ago, when New Jersey created its then-controversial alternate route to teacher certification, that having such quick paths to the classroom would be a criterion for the distribution of huge sums of federal money, as it is in the Obama administration's Race to the Top initiative? While New Jersey, and subsequently other states, created such alternatives as a way to improve the quality of the teaching force by offering programs attractive to liberal arts graduates, alternate routes have been derided by some as substandard, "scab programs," and merely fast-track ways of getting warm bodies into classrooms.

So why are about one-third of new teachers hired in this country coming through some 600 programs being implemented under the umbrella of 125 state alternate routes to certification, with such options available in nearly every state?

Moreover, why are scores if not hundreds of thousands of individuals with at least a bachelor's degree attracted to these programs as a way to enter teaching? Why are career-switchers, men, people of color, mathematicians, scientists, and recent graduates of top

Alternate routes have not only proliferated, but have also had a

universities all over the country trying to get into teaching through alternate routes? And why are colleges of education becoming big players in this space?

profound influence on the way we think about the preparation of teachers.

Simple answer: because alternate routes are market-driven. From day one, they have been created to meet market demand on both sides of the supply-and-demand equation—schools' need for more and better teachers *and* the needs of a nontraditional market of individuals who want to help meet those demands.

Alternative teacher-certification programs generally don't exist unless there are teaching jobs that need to be filled. They have been created to recruit, select, train, and certify individuals to teach in schools that need teachers in specific subjects and grade levels. This is why most alternate-route programs are in urban areas and outlying rural areas in the South and in Western and Eastern regions of the United States: Those places are where the demand for teachers is greatest.

This is also why alternative programs produce more math, science, and special education teachers, since those are the subject areas of greatest demand. And more male and minority candidates are entering teaching through alternate routes because these subjects and geographic areas are where the greatest concentration of men and minorities are.

Alternate routes come and go—if there is no market demand for teachers and no applicants, the programs die. And that is not a bad thing.

For the last half-century, America has relied for its teachers almost exclusively on high school students going to college and enrolling in a state-approved undergraduate teacher education program. It was not that long ago that teacher quality was measured by the SAT scores of students indicating they intended to major in education when they got into college.

Data from the federal **Schools and Staffing Survey** show that only 57 percent of brand-new entrants to the teaching profession in 2003-04 were recent college graduates (most likely to have come through a traditional program). And today about 40 percent of undergraduates who train to teach do not go into teaching. The U.S. Department of Education's **Baccalaureate and Beyond Longitudinal Study** shows that only about a third of education majors (33.5 percent in 2001) go directly into teaching, and fewer than three-quarters teach at some point in the 10 years after finishing their bachelor's degrees. This is not an efficient model for teacher production.

There is more than a sheer market phenomenon at work. Alternate routes have not only proliferated, but have also had a profound influence on the way we think about the preparation of teachers. Much to the chagrin of critics, one of the hallmarks of alternate routes is that they get candidates into classrooms early—sometimes right away—as teachers of record. The National Center for Alternative Certification's database of alternate-route providers indicates that virtually all participants teach with salary and benefits during their programs (79 percent full time, and 21 percent part time). Support from mentor teachers and other school or university personnel also is a major component of most alternate-route

programs.

All of these programs, including those administered by colleges of education, stress on-the-job training. And this strikes many in the field as the wave of the future. At a recent Education Department policy discussion on the reauthorization of the Elementary and Secondary Education Act, for example, one participant cited Finland's brand of teacher preparation as a model. There, candidates practice-teach throughout their education. They are in the classroom literally from the day they begin study.

The federal Institute of Education Sciences has come out with three startling reports over the past year: one basically concluding that the pathway to teaching doesn't matter in the production of effective teachers, and the other two indicating that mentoring and induction are not all they've been cracked up to be in producing teachers who improve student achievement or in retaining teachers.

The reports and statistics go on and on. What does it all mean? What have we learned about how best to prepare teachers? Here are some thoughts:

- There are now hundreds of diverse pathways into teaching, with varying entry and program-delivery components.
- There are vastly more educated, talented, eager adults who want to teach in high-demand subjects and geographic areas than there are jobs available.
- No research, to date, has found that the pathway one takes into teaching makes much difference in classroom effectiveness (which translates to student achievement).
- The continuing debates about alternative vs. traditional teacher preparation, and such nonsensical phrases as "alternative is not alternative," are a waste of time at this juncture.
- Most school districts do not want to run teacher-training programs.

Maybe—just maybe—counting courses, defining program-quality indicators, lining up licensing credentials, and providing other measures of "highly qualified teachers" are not the way to go. Perhaps decisions about the preparation of teachers can be made based on answers to the "effective teacher" questions: What, if any, components of existing teacher-preparation programs—recruitment and selection, mentoring and induction, curriculum/content and assessments—make a difference, and under what circumstances?

Thankfully, an evolving critical mass of smart people is focusing on *effective teachers* for answers—teachers whose students really do learn. How do we know an effective teacher when we see one? What makes an effective teacher effective? Can we make them, or do we just find them?

While answers to these questions are being sought, we also need to focus attention on what kinds of teachers will be needed going forward and how we get them. After all, practically the same cast of characters that was around when the college-assured teacher education model began in the early 1950s (the American Association of Colleges of Teacher Education was

formed in 1948; the National Council for Accreditation of Teacher Education in 1954) is still running colleges of education. And that was about the time that television was first showing up in living rooms across the country. Think about it.

The rapidity of technological advancements and their impact on teacher and student learning are immense. The Internet began to be widely used less than two decades ago. Google was started by a couple of college kids in 1998. We all began walking around with cellphones about 10 years ago. The BlackBerry came out in 2002, and the iPhone two years ago. And then there is the recent explosion of social networking, and cloud computing on the horizon.

That pace of change prompts the question: How are kids going to learn 10 years from now? And, going further, what role will teachers play?

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NJ Policy Changes Resulting from School Leadership Work (as a direct result of SAELP or consistent with SAELP-related goals)

	Circle Yes/No/ Don't Know	Description	Year Enacted
1. Standards	Y/N	Professional standards for teachers; first ISLLC standards.	2003
2. Induction	Y/N	Rigorous two-year induction and mentoring program for all principals began in July 2005 but was formalized in code in December, 2007.	2007
3. Mentoring	Y/N	same as above	2007
4. Professional development	Y/N	Required professional development plan for all school leaders in 3-year cycles, linked to ISLLC standards. PD standards adopted and linked to PD plans.	2004 2007
5. Certification/ Licensing	Y/N	Required passing score on SLLA exam for provisional certification.	2006
6. Program Accreditation	Y/N	Mandated 300 hours of field experience. National accreditation required of preparation programs.	2007 2004
7. Evaluation/ ALE	Y/N		
8. Use of Data	Y/N	NJ SMART student data tracking system required by all districts.	2007
9. Resource Allocation	Y/N	Statewide fiscal accountability statute and regulations. NJ Quality Single Accountability Continuum requirements	2008 2005
10. Roles & Responsibilities	Y/N		
11. Incentives	Y/N		
12. Governance	Y/N	District governance monitoring through QSAC process. Legislation reconfiguring the office of the county superintendent and revising the duties of the position. Legislation requiring school leader training on school ethics, law, and governance as part of the professional development requirement. Legislation requiring training for local school board members on specified skills and knowledge.	2005 2007 2007 2007

There has also been work done on distributed leadership, with four pilot districts. I know you don't want more details… but that was one strand of the SAELP grant as well.

Findings from the Evaluation of New Jersey's Alternate Route, 2005-2007
The New Jersey Alternate Route Program: An Analysis of the Perspectives from Alternate Route Teachers, Alternate Route Instructors, and Alternate Route Mentors. (http://www.nj.gov/education/educators/license/research/alternate.pdf,
Raymond Barclay, Western Carolina University; C. Emily Feistritzer, National Center for Education Information; Richard Grip, Statistical Forecasting; Charlene Haar, National Center for Alternative Certification; Gregory Seaton, The College of New Jersey; Sharon Sherman, The College of New Jersey; and Meredith Stone, Evaluation Consultant)

A two-year study of the New Jersey Alternate Route was conducted as part of New Jersey's Teacher Quality Enhancement Grant (TQE) beginning in 2005. Under the auspices of the College of New Jersey, this study addressed the following five questions:

1. Is the alternate route working?
2. Is it having an impact?
3. Is the method of program delivery the best?
4. Is the Alternate Route accomplishing what it is supposed to accomplish?
5. Are principals, supervisors, superintendents satisfied with the quality of Alternate Route teachers?

The five guiding questions were answered in the following way: (1) Is the alternate route working? Yes, AR candidates help meet the demand in hard-to-fill positions in shortage areas and teachers prepared through this route are capable of implementing all but a few of the New Jersey Professional Teaching Standards. (2) Is the AR having an impact? Yes, AR teachers are more diverse with respect to the number of teachers of color and males brought into teaching this way. AR teachers have energy/passion, high levels of commitment, dedication, enthusiasm, and perseverance. (3) Is our method of program delivery the best? It is good, but could be improved if it were more consistent across regional training centers and more consistent in the mentoring provided by districts. (4) Is the AR accomplishing what it's supposed to be accomplishing? Yes, as noted in items (1) and (2) above. However, it could be doing a better job with respect to the mentoring of new teachers and in training AR teachers in the areas of classroom management, assessment, child development, and differentiating instruction for diverse learners. (5) Are principals, supervisors, and superintendents satisfied with the quality of Alternate Route teachers? Yes, at the middle and high school levels, administrators are impressed with AR teachers' in-depth subject matter knowledge, maturity, and enthusiasm. Satisfaction is lower at the elementary level where good understanding of child development is essential and appears to be missing. Moreover, AR teachers need more support, especially with respect to classroom management, instructional planning, and being able to accommodate students with special needs.

The findings of the study showed that the program, in general, was doing what it was designed to do: bring diverse postbaccalaureate candidates into teaching. The results also showed:

- Administrators report that they can find AR candidates for hard-to-fill positions in math, science, foreign language, special education and ESL for middle and high schools.

- AR teachers and their instructors report that they are capable of implementing all but a few of the New Jersey Professional Teaching Standards (NJPTS).
- Statistics show that more than one-third of newly hired teachers each year in New Jersey are Alternate Route teachers.
- Demographic data make it clear that AR teachers are more diverse with respect to number of non-white/minority candidates and number of males brought into teaching.
- The administrator interviews add that these AR teachers have an energy/passion including higher levels of commitment, dedication, enthusiasm and perseverance not found in Traditional Route teachers.
  The delivery method is good, but from both the teachers and the administrators we heard that it would be better if it were:
  (1) more consistent across regional training centers; and
  (2) more consistent in the mentoring provided by districts.
- It is not doing its job with respect to the "in-class mentoring" mandated for the first twenty days of the AR teachers' classroom experience. This is mentoring districts cannot afford to provide.
- It is not doing its job with respect to AR teachers acquiring the critical skill of classroom management, according to administrator interviews. However, teachers, themselves, report they are capable in management techniques and motivating students.
  From interviews with principals and superintendents:
- Middle and high school level administrators are impressed with their in-depth subject knowledge, maturity, and enthusiasm.
- Administrator satisfaction is lower at the elementary level where good understanding of child development is essential and appears to be missing.
- While administrators recognize that all novice teachers need support, AR teachers seem to need more, especially with respect to classroom management, instructional planning, and being able to accommodate students with special needs.

One strong recommendation from the evaluation was for the state to follow up on this report by forming an advisory committee to review the report's recommendations for the recruitment and selection of alternate route candidates, the standards for preparation of alternate route candidates, the design, delivery, and approval of alternate route providers and programs, and the mentoring and assessment of alternate route candidates, and to add other recommendations as determined by the committee to improve the entire system of alternate route teacher preparation. The Alternate Route Advisory Committee was established in April 2008 to continue the review of New Jersey's alternate route pathway.

Promoting Instructional Leadership The New Jersey State Action for Educational Leadership Project

Over the past decade, there has been much attention given to the issue of teacher quality. However, in the last several years the pivotal role of educational leaders in school improvement has come to light. National research by education experts such as Dr. Michael Fullan, Dr. Joseph Murphy, and organizations like Research for Better Schools point to the tremendous importance of leadership in school improvement efforts. More than just leadership *per se*, research tells us that instructional leadership is key to creating and sustaining the kind of positive learning communities that foster a culture of achievement for all students.

The State Action for Educational Leadership Project (SAELP) funded by The Wallace Foundation has had a key role in shining the light on the importance of school leadership in bringing about school improvement and enhancing the achievement of all students. SAELP is a high profile, ambitious and experimental project in which New Jersey and fourteen other states work with a National Consortium and each other to explore ways in which innovative state policies realized through statute and regulation can support strong school leadership focused on

teaching and learning across the nation. New Jersey was funded for an initial three year SAELP grant in 2001 and has just been awarded a new three year grant to carry on its reform work.

The Wallace Foundation also funds a large urban district in each of the SAELP states to allow policies formulated at the state level to be piloted and tested for effectiveness. New Jersey SAELP works closely with the Trenton Public Schools which was selected as the LEAD district for New Jersey. The 15 states and their LEAD are, as it were, "under the microscope" with the expectation that the lessons of SAELP will inform leadership practices well beyond the 15 states taking part.

A key element of the success of New Jersey's first SAELP project can be attributed to the innovative school leadership policy work of the state-level SAELP consortium. Comprised of a rich and diverse group of policy makers and practitioners, including representatives from the major educational associations, the legislature, the governor's office, the business community, the Department of Education, and higher education , the consortium worked diligently and collaboratively over a three year period to recommend new policies for implementation through statute and regulations that promoted strong school leadership focused on teaching and learning. In the past, the focus for New Jersey school leaders had been on school leaders focused on the effective management and administration of schools. SAELP has shifted that focus to help school leaders see themselves as the key instructional leaders in schools who can create the conditions and culture for significant improvements in teaching and learning. management In fact, the New Jersey SAELP Consortium has broken new ground in terms of new policies. Some

of the key reforms recommended by the SAELP consortium are described in the following section.

Key Reforms under SAELP 1:

On the basis of the recommendations of the New Jersey SAELP Consortium, The State Board of Education in December 2003 adopted professional standards for school leaders as the platform for an array of policy reforms planned under SAELP. These standards establish the knowledge base needed for school leaders to be effective instructional leaders and will drive the preparation, licensure, mentoring and development of school leaders.

Another key reform recommended by SAELP and adopted by the State Board of Education has been the requirement of national accreditation for all school leader preparation programs and that the state form partnerships with the key national accreditation bodies. This signifies a significant leap forward in New Jersey which will help to ensure quality control of the process that prepares school leaders.

SAELP has also recommended new and alternate routes to school leadership certification opening new paths to a wider pool of strong candidates. In another related SAELP recommendation, the State Board of Education fast-tracked changes in the licensure code that will expedite reciprocity for out-of-state candidates.

The State Board has also adopted new regulations based on the SAELP consortium's recomemmndaiton requiring new and more meaningful standards-based assessments of school leaders as the qualifying exam for licensure. Candidates for licensure will be assesses based on the stnadrds which formed the bais of their preparation programs.

The State Board also adopted regulations governing the professional development of school leaders which h had been proposed by SAELP. The consortium had crafted a professional learning that reflects best practice in professional l learning employing a standards-based, collaborative professional development model. This reform will usher in a new focus on life-long learning for school leaders so necessary in our fast and changing world.

New Jersey SAELP also examined the critical and complex issue of school governance. Over the last six months the Consortium has done considerable research, held a summit on this issue and is developed recommendations to alter school governance structures that will improve and enhance school board and district personnel relationships and improve the conditions of work for school leaders. Some of the key proposal changes in this area that will need legislation action include:

- **Change of superintendents from 3-5 years to improve continuity of education programs.**
- **Realignment of terms of officers of board members with that of superintendent.**

- **Moving many personnel decisions from school board to superintendents and principals.**
- **Require cross-training of boards and superintendents to build**

leadership teams

- **By following the SAELP vision for policy reform, building a rich, diverse consortium and including governmental officials in the learning community that we have become, the leaders of the New Jersey SAELP project have helped to transition and even strengthen support for SAELP in the wake of an election that brought a new party and governor into leadership in the state.**

Slide 10

- **It is said, "Without a vision, the people perish." New Jersey SAELP is uniting policymakers and practitioners as never before to strengthen school leaders who can create and sustain a vision of learning communities committed to high levels of achievement for all students.**

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- **SAELP has not only provided the template for a thoughtful approach to research and policy development, it has also provided resources through the national consortium and their sponsoring organizations.**

- **It has brought national experts in leadership and education and provided consultants to work directly with states. In New Jersey's case, our consultant has helped to guide the work so that stakeholders see beyond partisan interests and work with genuine collaboration to craft policy recommendations all can support and from which the entire education community stands to benefit.**

Slide 8

- **SAELP's focus has helped New Jersey's political and educational leaders to see and support the essential role of high quality school leadership in bringing about systemic improvement in education. The intent and focus of our consortium's work is the development of policies for implementation as regulation of statute that will strengthen school leadership. So often states create well-meaning programs as band-aids for problems whose long-term solutions really rest in the policy arena. SAELP has helped New Jersey to address critical leadership issues regarding recruitment, preparation, and support of school leaders in a manner that is comprehensive, coherent, aligned with the research and best practices through regulation and statute.**

- **The leadership shown by the state's major associations for school leaders has been vital to the success of New Jersey's SAELP project. Association leadership has helped to support and bring together practitioners to provide the essential**

connections between policy and practice that has shaped the Consortium's reform agenda. In this regard, the consortium and its leadership have also worked to build a strong relationship with the state's LEAD district.

- **The fortuitous timing of the project has been another factor in New Jersey's ability to keep SAELP a vital initiative despite governmental transition. The key policymaking role of the consortium partners and their shared authority and responsibility for guiding implementation in alignment with the SAELP strategies and the state's comprehensive standards-based reform efforts are occurring in the context of the federal requirements mandated by No Child Left Behind and the State Board of Education's comprehensive review of the licensing code. Everyone has been keenly aware that the opportunity opened by this confluence of factors will not soon come again. The time is at hand to implement systemic reforms to address both the impending shortage of school leaders and the need to reconfigure the preparation, licensing requirements, induction support, professional growth opportunities, conditions of practice and governance issues that impact on the quantity and quality of the state's school leaders.**

<u>Slide 9</u>

- **Because of coordinated leadership and collaborative work, New Jersey SAELP has already made significant progress toward the accomplishments projected in our implementation plan. Reforms recommended by SAELP across the life cycle of a school leader are before the State Board for adoption in January 2004. Other**

recommendations requiring legislative action will also be brought before the Legislature this year

- **Let me review some of these reforms:**

Element Two: Teacher Preparation

- The New Jersey Professional Education Port (NJPEP) located in the Office of Academic Standards, developed several online multimedia professional development modules that focus on early literacy and ELL (*English Language Learners in the Mainstream*). In addition, NJPEP has created an adolescent literacy video for the Literacy is Essential to Adolescent Development and Success (LEADS) program located in the Office of Language Arts Literacy. NJPEP, in conjunction with the Office of Math and Science Education and New Jersey Network (NJN), developed a mathematics/science video to assist middle school classroom teachers entitled, "*Addressing the Needs of the Diverse Learner in the Math and Science Classroom*." NJPEP also provides links to local and national online courses and provides an array of resources on classroom assessment, data-driven instruction, and classroom strategies such as differentiated instruction. NJPEP provides up-to-date professional development opportunities via the "njpepnews" listserv, which reaches many New Jersey educators. NJPEP will be incorporated into the newly developed New Jersey Core Curriculum Content Standards Web site and interactive professional development platform in 2010.

Element Three: Out-of-Field Teaching

- As mentioned in Element Two, NJPEP provides professional development modules and videos in Language Arts Literacy, Mathematics, Science and ELL.

Element Six: Specialized Knowledge and Skills

- NJPEP, New Jersey's online virtual academy, offers a tutorial for teachers who have English language learners in their classes but have little previous experience or training on how to teach them effectively.

The New Jersey Alternate Route Program:
A Systems Approach to Teacher Quality

Introduction

Based on the results from a statewide evaluation of its alternate route to teaching, completed in 2007 by a team of researchers from The College of New Jersey (TCNJ), the New Jersey Department of Education (NJDOE) created the Alternate Route Advisory Committee to examine the findings of the evaluation report. The summary below describes the work and recommendations of the advisory committee for improving the alternate route as well as some key reforms of the alternate route program currently being instituted in direct response to the evaluation's findings. The work of the committee was supported by NJDOE's Teacher Quality Enhancement-Recruitment grant (TQE-R).

Background

New Jersey is credited with launching the alternate routes to teacher certification movement in the United States when it created its Alternate Route to Teaching Program in 1985 (AR). Designed to attract and transition strong liberal arts graduates and career changers into the teaching profession, this program is about to turn twenty-five. While the implementation of the New Jersey alternate route program was met with some debate across the country when it was first introduced, every state in the nation now has at least one alternative route for certifying non-traditional candidates to be teachers.

An estimated one-third of new teachers are now entering the profession through alternate route pathways throughout the country. Over the past twenty-four years, the New Jersey AR pathway has had a critical influence on novice teachers and the districts they serve. More than 1,800 candidates came through this route in 2008-2009, as compared to 4,500 traditional route candidates. Moreover, since the inception of the AR option in 1985, approximately twenty-nine thousand alternate route teachers and fifty-eight thousand traditional route teachers have been recommended for standard certification by school principals throughout the state.

The alternate route in New Jersey, as the above statistics demonstrate, has been and continues to be an important pathway into the profession with one out of three teachers entering the profession through this route. New Jersey has a nationally-recognized alternate route approach to teacher preparation, providing opportunities for a wide spectrum of candidates to enter the profession. The state's alternate route is also a key pipeline for its high-need districts, and alternate route options have been expanded with targeted, pilot AR programs in high-needs subject areas such as special education, English as a Second Language, Bilingual Education, world languages, science, and mathematics (see appendix B, page 11, for more information about new pilot programs in math and science).

Evaluation of the Alternate Route to Teaching in New Jersey

New Jersey continues to work to improve the quality of incoming teachers by improving the pathways through which all its teachers become certified. This is evidenced by the state-supported studies and evaluations of teacher preparation programs and the subsequent establishment of state-wide committees to discuss findings and make recommendations for improvements. A two-year study of the New Jersey Alternate Route was conducted as part of New Jersey's Teacher Quality Enhancement Grant (TQE) beginning in 2005. Under the auspices of the College of New Jersey, this study addressed the following five questions:

1. Is the alternate route working?
2. Is it having an impact?
3. Is the method of program delivery the best?
4. Is the Alternate Route accomplishing what it is supposed to accomplish?
5. Are principals, supervisors, superintendents satisfied with the quality of Alternate Route teachers?

The five guiding questions were answered in the following way: (1) Is the alternate route working? Yes, AR candidates help meet the demand in hard-to-fill positions in shortage areas and teachers prepared through this route are capable of implementing all but a few of the New Jersey Professional Teaching Standards. (2) Is the AR having an impact? Yes, AR teachers are more diverse with respect to the number of teachers of color and males brought into teaching this way. AR teachers have energy/passion, high levels of commitment, dedication, enthusiasm, and perseverance. (3) Is our method of program delivery the best? It is good, but could be improved if it were more consistent across regional training centers and more consistent in the mentoring provided by districts. (4) Is the AR accomplishing what it's supposed to be accomplishing? Yes, as noted in items (1) and (2) above. However, it could be doing a better job with respect to the mentoring of new teachers and in training AR teachers in the areas of classroom management, assessment, child development, and differentiating instruction for diverse learners. (5) Are principals, supervisors, and superintendents satisfied with the quality of Alternate Route teachers? Yes, at the middle and high school levels, administrators are impressed with AR teachers' in-depth subject matter knowledge, maturity, and enthusiasm. Satisfaction is lower at the elementary level where good understanding of child development is essential and appears to be missing. Moreover, AR teachers need more support, especially with respect to classroom management, instructional planning, and being able to accommodate students with special needs.

The evaluation findings and recommendations were published in November 2007 in a report entitled *The New Jersey Alternate Route Program: An Analysis of the Perspectives from Alternate Route Teachers, Alternate Route Instructors, and Alternate Route Mentors*. (http://www.nj.gov/education/educators/license/research/alternate.pdf,
Raymond Barclay, Western Carolina University; C. Emily Feistritzer, National Center for Education Information; Richard Grip, Statistical Forecasting; Charlene Haar, National

Center for Alternative Certification; Gregory Seaton, The College of New Jersey; Sharon Sherman, The College of New Jersey; and Meredith Stone, Evaluation Consultant), and in February 2008, the evaluation findings and recommendations were presented to Mrs. Lucille E. Davy, the New Jersey Commissioner of Education, and members of the New Jersey State Board of Education. One strong recommendation from the evaluation was for the state to follow up on this report by forming an advisory committee to review the report's recommendations for the recruitment and selection of alternate route candidates, the standards for preparation of alternate route candidates, the design, delivery, and approval of alternate route providers and programs, and the mentoring and assessment of alternate route candidates, and to add other recommendations as determined by the committee to improve the entire system of alternate route teacher preparation. For other specific recommendations from the evaluation report, see Appendix C.

New Jersey Alternate Route Advisory Committee, April 2008 through October 2009

The forty-member alternate route advisory committee was comprised of alternate route providers, alternate route mentors, alternate route teachers, public school administrators, representatives from the state's professional associations, deans/directors from the colleges of education, and state officials (please see appendix A, page 9, for a list of the members and their affiliation). Co-chairs of the committee from NJDOE's Office of Professional Standards, Licensing, and Higher Education Collaboration were Ms. Judith Cifone, manager of the Provisional Teacher Program, and Dr. Christopher Campisano, coordinator of Higher Education Programs. Consultants hired to support the work of the task force were Dr. C. Emily Feistritzer, President and Chief Executive Officer of the National Center for Alternative Certification, a leading authority on non-traditional pathways into the teaching profession who had served on the original evaluation team, and Charlotte Danielson, a national expert on teaching practice, assessment and evaluation. Dr. Cathy Pine, director of the office, provided coordination and oversight.

The advisory committee met over the next eighteen months, beginning in April of 2008 and concluding in October of 2009. The advisory group studied the findings of the evaluation, studied current research and best practices and then developed three subcommittees charged with working in the three areas of recommendations for reform in the evaluation study: 1) recruitment and selection of alternate route candidates; 2) induction and mentoring of alternate route teachers; and 3) the program curriculum and candidate assessment with respect to the principles of effective teaching.

Recommendations from the New Jersey Alternate Route Advisory Committee

<u>Recommendations for the Recruitment and the Selection of AR Candidates</u>

<u>Recruitment</u>

- Strategies should be centralized and coordinated across school districts in a centralized database.
- Strategies should be based on identified school needs/vacancies.

• Efforts need to be coordinated and partnered among various agencies in the state, such as New Jersey State Department of Education, the New Jersey State Department of Labor Rapid Response Teams, local Work Investment Boards (WIBs), organizations, business and industry, institutions of higher education, and school districts.

• Efforts should clearly state criteria sought in potential candidates for teaching in Nee Jersey.

Suggested Recruitment Strategies

• Introduce a State-wide media campaign celebrating twenty-five years of the New Jersey Alternate Route Program.

• Utilize former AR participants as recruiters.

• Establish a recruitment task force/consortium that would oversee teacher recruitment – one group suggested creating a "Teach New Jersey" initiative.

• Develop a profile of the ideal candidate and make that central to recruitment campaign.

• Targeted information packets based on potential candidate backgrounds

Selection

• Define clear, specific selection criteria for *all* candidates.

• Identify selection criteria and who is responsible for each step – state's role, hiring school district's role, provider's role.

• Assess knowledge *and* professional dispositions as part of the selection process.

• Select candidates based on identified needs/vacancies.

• Go beyond the existing eligibility criteria such as Grade Point Average (GPA) and Praxis II scores.

• The New Jersey State Department of Education should request evidence that attests to the candidate's professional/personal skills with respect to the teaching profession.

Recommendations for the Induction and Mentoring of AR Candidates

• Extend induction of AR candidates to two years that includes a portfolio of practice aligned to the New Jersey Professional Standards for Teachers developed over two years. The portfolio will serve a key role in the summative assessment for standard licensure.

• Create infrastructures to better link AR training centers to induction in the district and the school.

• Stress a cohort approach to the alternate route program providing cohort learning opportunities that involve principal and mentors from districts as well as AR instructors.

• Develop specific criteria for mentors of alternate route candidates to help assure that mentors are outstanding practitioners and effective with working with adult learners.

• Develop a required curriculum for mentors to be utilized by districts, district consortia, and providers of mentor training.

• Revise regulations to require specific mentor/novice teacher contact time.

• Develop mentor standards to guide selection and retention of effective mentors.

Recommendations for the AR Program Curriculum and Candidate Assessment

• Focus on individual AR candidate's needs based on the candidate's assessment in determining program content and curriculum (customize/personalize the delivery of program curriculum).

• Adopt a consistent framework (e.g., Danielson's *Framework for Teaching* and associated rubrics) to provide a shared definition of good teaching and as the method of making operational the New Jersey's professional standards and helping to standardize curriculum across centers.

• Create curriculum committees in centers to review and revise curriculum regularly.

•Use multiple formative assessment tools to support the implementation of the curriculum.

• Create greater standardization of curriculum across regional training centers.

• Create common assessments/assessment tools and communication system across centers to provide feedback loop between centers and schools in the induction of new alternate route.

• Provide training on new assessment/communication tools for stakeholders – including schools and center personnel.

• Regardless of pathway to teaching, utilize the same program approval process for traditional and alternate pathways so all are held to same standard.

Reforms Already Instituted for the Alternate Route in New Jersey

A brief summary of a three major policy changes during the course of the eighteen months the New Jersey Alternate Route Advisory Committee met is in order. These three major policy changes led to regulations impacting: 1) the initial requirements for securing a credential to teach (i.e. the Certificate of Eligibility); 2) the additional hours of preparation required for teaching elementary language arts/literacy and elementary mathematics; and 3) the preparation of career and technical educators.

Adding a Pre-service Component

Beginning on October 31, 2009, and continuing thereafter, alternate route teacher candidates applying for the Certificates of Eligibility (CE) are required to complete twenty-four hours of formal instruction focused on an introduction to the teaching profession. This requirement became effective on September 1, 2009, for alternate route teacher candidates pursuing a pre-school through grade three (P-3) teaching endorsement. As part of this requirement, four of the twenty-four hours must be devoted to observing a classroom.

Additional Math and Language Arts Preparation Requirements for Elementary Certification

Beginning on October 31, 2009, and continuing thereafter, alternate route teachers possessing the Teacher of Elementary School in Kindergarten through Grade Five (K-5) teaching endorsement must complete, within their first calendar year of being employed,

an additional forty-five hours of study in teaching language arts/literacy at the elementary level and forty-five hours of study in teaching mathematics at the elementary level. Therefore, the formal instruction of an alternate route elementary teacher will increase from two-hundred and twenty-four hours to three-hundred and fourteen hours with the additional ninety hours of instruction focused on teaching elementary language arts/literacy and elementary mathematics.

Career and Technical Education Certificate Holder Requirements

The third policy change focused on the preparation of career and technical educators. Beginning February 1, 2010, and continuing thereafter, holders of Career and Technical Education Certificates of Eligibility (CEs) will be required to complete two-hundred hours of instruction at a regional training center that is targeted to the needs of these candidates.

New Jersey Alternate Route – Strategies for Moving Forward

1) Define effective teaching at different stages of practice across the professional learning continuum, based on the New Jersey Professional Standards for Teachers, the New Jersey Professional Standards for School Leaders, the National/Professional Association Standards, i.e., Association for Childhood Education International (ACEI), the National Council of Teachers of Mathematics (NCTM).

2) Develop and implement performance-based assessments to allow candidates to demonstrate their competence and effectiveness according to the State standards adopted for each certification/endorsement area. Offer these performance assessments at critical transition points in the professional life of the teacher or school leader. This evidence will also be used to assess the effectiveness of teacher preparation programs, whether offered at the State's regional training centers or the State's institutions of higher education and to guide a cycle of continuous program improvement and adjustment. Such performance based assessments may include teacher portfolios, Teacher Work Samples (TWS), or other assessments that are aligned to the New Jersey Professional Standards for Teachers or School Leaders and the National/Professional Association Standards.

3) Design, develop, and maintain an educator database to track key data about teachers, school administrators, and educational service personnel. An educator database will provide a key mechanism to track candidates in the field and provide data across the career continuum of the educator, delineating information on the quality of their professional preparation, employment and placement, impact on student achievement, and retention. As the federal government moves from the highly qualified teacher requirements to a teacher effectiveness model, such a state system will be imperative.

4) Require all professional preparation programs to go through a rigorous and transparent State Program Approval Process and require all professional preparation programs, where applicable, to be nationally accredited. The New Jersey State Board of Education adopted

new licensure regulations in 2003 requiring all institutions of higher education that offer licensure preparation programs to gain national accreditation by 2009. The State program approval process fulfills a critical State responsibility, quite separate from national accreditation, to ensure individual programs leading to licensure, in addition to meeting high standards, also meet all of the requirements specified in State statute and code. With one-third of New Jersey's teachers being prepared to enter the profession through the alternate route, the state needs a consistent quality control system for all providers to ensure consistent standards, equity, and fairness.

Conclusion

The future of teacher preparation is no longer about comparing alternate route teachers to traditionally prepared teachers. To increase the supply of effective educators, particularly in service to disciplinary shortage areas and low performing schools, the overarching goals are to attract talented individuals into the profession, to provide multiple pathways to certification, and to ensure high quality of preparation for all. Building upon the recommendations from the Alternate Route Advisory Committee will allow New Jersey to move forward with policies and programs to support the creation of a highly effective teacher workforce.

Appendix A

Members of the New Jersey Alternate Route Advisory Committee

Eileen Aviss Spedding, New Jersey State Department of Education

Mary Barrie, Alternate Route Mentor and Teacher, C.W. Lewis Middle School

Ed Barry, Director, Liberty Science Center's Teaching Training Program

Donna Bogart, New Jersey State Department of Education

Carol Cannerelli, Director of Special Services

Christopher Crow, Montgomery Township School District Teacher and President of the Montgomery District Township Education Association

Ginny DeThy, Richard Stockton College of New Jersey

Victoria Duff, New Jersey State Department of Education

Tony Evangelisto, the College of New Jersey, Regional Training Centers Director

Melissa Fantozzi, New Jersey State Department of Education

Whitney Farrand, Newark Public Schools, Middle School Mathematics Teacher

Anne Freeman, New Jersey State Department of Education

Lori Howard, New Jersey State Department of Education

Jim Jacobson, St. Peter's College, Associate Professor of Education and Program Director

Thomas Klemm, Bergen Technological High School, Director of Human Resources

Annette Konopka, Upper Freehold Regional, Teacher

Frances Levin, New Pathways to Teaching in New Jersey, Academic Director

Ray Levy, New Jersey State Department of Education

Pauline Lundgren, New Jersey State Department of Education

Janeen Maniscalco, Jersey City Public Schools, Lower Elementary Teacher

Linda Milstein, Brookdale Community College, Vice President for Outreach Business and Community College

Christopher Nagy, Principal, Allentown High School, Upper Freehold Regional School District

Sharon Nemeth, Pennington Public Schools, Supervisor

Heather Ngoma, Director, New Jersey Charter School Resource Center for Effective Practices, Rutgers University

Frank Orlando, Rowan University, Co-Program Director

Elizabeth Panella, Rumson-Fair Haven High School, Principal

Cheri Quinlan, New Jersey State Department of Education

Ronni Reed, Teacher Leader and Staff Developer, Monmouth County Vocational Technical Schools

Ana Maria Schuhmann, Interim Dean, William Paterson University

Carol Sharp, Dean, College of Education, Rowan University

Vickie Sikorski, New Jersey State Department of Education
Rani Singh, New Jersey State Department of Education

Patricia Sweeney, World Languages Department Chairperson and Teacher of Spanish, Allentown High School Upper, Freehold Regional School District

JoAnn Tier, Co-chairperson, Advisory Committee for Nonpublic Schools, Diocese of Trenton

Diane Viola-Henriksen, Project Coordinator, Morris Union Jointure Commission Regional Training Center

John B. Webb, Director of Programs and Teacher Preparation, Princeton University

Mindy Weidman, Alternate Route Teacher, Teach for America, Newark Public Schools

Candace Wildy, Director of Employee Services, Newark Public Schools

Rosetta Wilson, Coordinating Director of Curriculum and Instruction, Paterson Public Schools

Betty Sue Zellner, New Jersey State Department of Education

Appendix B

New Jersey Pilot Alternate Route Programs Targeted to Meet High Needs Areas

Traders to Teachers

The program Traders to Teachers was launched in 2009 as a unique pilot program developed through the joint efforts of Montclair State University, the New Jersey Department of Education, and the New Jersey Department of Labor. Designed to fill the need for excellent math teachers in the public high schools and middle schools, the program is only offered at Montclair State University. The University's nationally recognized Teacher Preparation Program and the Department of Mathematical Sciences collaborate to recruit and prepare qualified former financial/business sector employees for a career in teaching mathematics.

The program's candidates are experienced men and women who were selected during a rigorous, multi-layered admissions process. Concurrently with the carefully constructed and focused math and education courses they attend, they fulfill their fieldwork requirement in regional middle and high school classrooms under the direct supervision and support of experienced, cooperating math teachers. Upon successful conclusion of this 3½ month phase of the program, they receive a specially-issued **Certificate of Eligibility for P-12 Mathematics** from the New Jersey Department of Education and are considered ***Highly Qualified.*** After successfully teaching for 2 ½ years, completing additional mathematics courses as determined on an individual basis, and passing the secondary mathematics PRAXIS II exam, participants are recommended by MSU to the state for standard, permanent teaching certification in P-12 Mathematics.

Program participants are prepared to teach Algebra I, Algebra II and Geometry in recognition of the New Jersey Transformation of Secondary Schools graduation requirements. As members of high school and middle school faculties, these highly motivated men and women will receive the support of a project-assigned, experienced mentor for two years as they bring their maturity, skill, and expertise to the classroom. They will also have the advantage of being able to engage their students successfully by relating the math curriculum to the concrete, real-world experiences that they themselves have had - a significant benefit to their students that cannot be overstated!

Progressive Science Initiative: Teaching Certificate Endorsement in Physics, New Jersey Education Association (NJEA) and Kean University

Improving student achievement in science is now a national priority. To that end, increasing the number of skilled science teachers is also a national priority. The good news is that New Jersey is ready to take on the challenge of science education by training a talented corps of teachers who will lead the next generation to high levels of student achievement in science. The New Jersey Center for Teaching and Learning is launching a new science teacher certification program designed for current certified teachers with great teaching skills and an interest in science education.

The PSI course sequence assumes that high school students will participate in an algebra-based physics course first, followed by chemistry, then biology. The physics-chemistry-biology sequence is logical as biology requires a foundation of both chemistry and physics, and chemistry requires a foundation of physics. This sequence also supports higher levels of math achievement as math is embedded in the science program – students taking algebra and geometry experience a practical application of their math skills in their science classes.

Program Basics--The Progressive Science Initiative (PSI) is a curriculum based on the Advanced Placement (AP) Science curriculum. Research shows that students in the United States generally perform poorly compared to other nations on the Trends in International Mathematics Science Study or TIMSS. However, students who take, but do NOT pass the AP Physics B exam (scoring 1 or 2) perform on average as well as students in other countries. And students who take and pass the AP Physics B exam (scoring 3 and higher) outperform students from other countries. The PSI initiative incorporates the skills included in the AP curriculum since this curriculum has proven to increase student achievement. PSI raises the science achievement of average US students to international levels.

Research Proven Results--Research has shown that students of average academic aptitude (as measured by SAT scores) have demonstrated remarkable math and science achievement through the PSI program. By the time these students graduated from high school, they had taken five times as many AP science exams as the average New Jersey high school student and passed (3+) four times as many. These results were reported in the peer-reviewed journal of the American Association of Physics Teachers (Goodman & Etkina, The Physics Teacher, April 2008).

A Talented Corps of Science Teachers--The traditional "alternate route" program seeks to recruit science professionals to become teachers. This approach has many flaws, starting with the fact that there is already a shortage of science professionals. This is the core reason why we need to improve science education. Also, it's not clear that science professionals want to leave their jobs, or that they would be good teachers. We question the assumption that "science is hard; teaching is easy." The PSI approach to science education is different. PSI has demonstrated that all students can learn science. We extend that to a strong belief that all teachers can learn science. We propose to use the PSI approach to teach science to highly skilled teachers – adults who have a passion for teaching, a commitment to the profession, an interest in science, and the dedication to lead the profession. Our goal is to get the best teachers we can find to become science teachers by taking coursework in the PSI approach.

A 21st century classroom--The PSI curriculum was developed by a talented corps of New Jersey teachers--teachers just like you--who meet on a regular basis to refine and develop their lessons. An important component of the program is access to Smart Board technology and a classroom setup that promotes student interaction and the opportunity for teachers to interact in a web-based environment about their lessons. Therefore,

districts that participate in this program by sending teachers through the certification program also commit to providing a 21st century classroom to our graduates, including a Smart Board, Senteo remote responders for students, projectors, laptops, and round tables.

PSI Professional Learning Community--PSI teachers will become part of a Professional Learning Community and collaborate through a website where materials such as textbooks, curricula, Smart/Senteo notebooks and assessments will be posted. New PSI teachers will extend this PLC as they download, use, discuss, and upload improved versions of these materials. The same collaborative teacher-led approach that developed PSI in one school will be extended to a virtual PSI community encompassing many schools.

How do we measure success?--Success in the PSI program is measured in several ways. For students, success will be determined by the number of students who pass the mid-term and end-of-course exam in physics. In addition, success will be measured by the number of students who enroll in AP science courses after completing the basic physics course. Success can also be measured by performance on state-developed science exams (when available) and by performance on SAT II content area tests. PSI will also monitor student interest in pursuing science and math majors in college. The measure of PSI's success will also be determined by teachers, including the number who complete the PSI program, the number who pass the exit exam for the program and the Praxis, the number who become fully certified – and teacher and student attitudes about the program.

Appendix C

Summary of Recommendations from the Evaluation of New Jersey's Alternate Route Program
(*The New Jersey Alternate Route Program: An analysis of the perspectives from alternate route teachers, alternate route instructionrs, and alternate route mentors*, the College of New Jersey, November, 2007)

General Recommendations

- Convene a group of nationally renowned researchers who are studying alternative pathways to teaching, components of pathways to teaching, what impact they have in producing effective teachers and what impact these findings are having on future directions for all pathways to teaching.
- Create a framework for collecting data and information statewide about teachers and their effectiveness. Research frameworks are only as sound as the valid data available to them and the New Jersey State Department of Education and Alternate Route sites lack adequate infrastructure in the area of data management, integration, and reporting.
- Create and maintain a unit record database that tracks alternate route teachers from initial application through certification through tenure.
- Broaden the pool of individuals entering teaching in New Jersey.
- Conduct focus groups and a more definitive survey of alternate route teachers in the state to elicit more definitive and useful information from them concerning their transitioning to teaching than the current surveys and interviews were able to do.
- Be open to making radical changes when the evidence suggests they should be made.

Recruitment and Selection of Alternate Route Candidates

- Identify specific job vacancies in specific subjects and grade levels in each school.
- Actively recruit high quality individuals who already have at least a baccalaureate degree to come into teaching to fill those specific positions through the New Jersey Alternate Route to certification programs.
- Hold a statewide conference/job fair to explain New Jersey's specific needs for specific teachers and the various pathways by which one can enter teaching in New Jersey.
- Establish a state computerized database for applicants to teaching in New Jersey that could be used to match applicants with job openings in the state.
- Carefully screen and select individuals from the pool of applicants who would be most likely to succeed as teachers by using such methods as the Haberman Interview, the Kaplan review process, an adaptation of the recruitment and selection processes utilized by The New Teacher Project.

Standards for the Preparation of Alternate Route Candidates

- Develop consistent procedures across sites for assessing AR candidates by AR instructors as they move through the program.
- There already exists a procedure for gathering feedback about AR candidate performance from principals, supervisors and mentors. Enhance the procedure by creating a forum for educational administrators to discuss this feedback with AR providers to develop Professional Improvement Plans (PIP).
- On an annual basis, AR providers should submit to New Jersey State Department of Education a document that aligns program standards, curriculum, and performance assessments. Require a companion document indicating number of classroom hours devoted to covering each standard, in which phase of the AR program those hours are delivered, and how candidate knowledge is assessed. This should be written in the form of measurable objectives and be based upon performance.

Design, Delivery, and Approval of AR Programs

- To improve consistency across programs, create models for program design and delivery and share them with AR providers.
- Have AR providers select a model and design and develop curriculum around that model.
- Revise program approval requirements.
- Monitor AR site visit process and make adjustments.

Mentoring and Candidate Assessment (Formative and Summative)

- Utilize the New Jersey Department of Education Mentoring Toolkit.
- Enhance the Mentoring Toolkit by adding a section on mentoring AR teachers as part of the school district induction of novice teachers.
- Provide practicing administrators with in depth understanding of AR programs, which will enable them to provide proper support for AR candidates.
- Provide in depth information about AR programs to administrators enrolled in administrator preparation programs.
- Carefully select mentors for AR teachers and provide mentor training.
- Select mentors who show evidence of excellent teaching performance; ability to develop high quality instruction in others; knowledge of practical classroom management; working with diverse populations and students with special needs.
- When possible, release mentors part time so they can properly observe and mentor AR teachers or relieve mentors of non-teaching activities so they can have proper time to mentor.
- Hold a statewide conference on mentoring AR teachers.

Policy Implications

- When considering enacting policy on recruitment, ensure that structures are in place to support data collection to inform data driven decision making. One of the challenges of this evaluation study and the district's ability to monitor progress of students in the licensure funnel is the lack of a funded capacity to track and report out progress relative to valid standards/guidelines.
- A teacher recruitment plan with explicitly stated targets for various licensure funnels should be developed with a particular emphasis on increasing the number of candidates with the following characteristics:
  - Interest and/or experience working in high need schools.
  - Interest and/or experience working with at risk students
  - Specialization in high shortage subject areas, including mathematics, science, world language,
  - Special education and early childhood education.
- Alternate Route programs should emphasize classroom management that promotes positive relationships, cooperation and collaboration, and purposeful learning.
- AR teachers should complete Phase IA, Survival Strategies, before entering their classrooms, unless their district can guarantee full time mentoring for their first 20 days.
- New Jersey Professional Teaching Standards should be consistently integrated into the Alternate Route expectations at each site, monitored by districts, and assessed.
- The implementation of district mentoring programs that support novice teachers in developing deeper content knowledge and pedagogical skills should be enhanced and strengthened.

December 4, 2009

Ms. Mary A. Miller
Policy & Budget Development Staff, PPI
Office of Postsecondary Education
U.S. Department of Education
1990 K Street, NW Room 8066
Washington, DC 20006-8542

Dear Ms. Miller:

The New Jersey Department of Education (NJDOE) is requesting approval to continue to use an alternative teacher shortage area selection methodology. The NJDOE has identified our teacher shortage areas for 2009-2010 to address current and anticipated needs. These are presented in the enclosed document entitled "Proposed Designated Teacher Shortage Areas for New Jersey." Since the Teacher Education Assistance for College and Higher Education (TEACH) Grant Program is for people enrolled in teacher preparation programs, we have also included preschool and technology education to address shortages in these areas anticipated for 2010-2011.

The following sources were used to determine the shortage areas: The New Jersey State Board of Education resolution, NJDOE district factor groupings, data from the NJDOE Division of Early Childhood Education, a November 2006 survey from the Technology Educators Association of New Jersey, and the language of New Jersey public law P.L. 2009 c. 5.

We believe that our alternative methodology that includes multiple, reliable sources accurately represents teacher shortage areas in New Jersey. We have enclosed our list of designated teacher shortage areas for the 2009-2010 school year accompanied by: New Jersey State Board of Education resolution to identify subject areas with a critical shortage of teachers (Appendix A); information on New Jersey's District Factor Groupings (Appendix B); an outline of the NJDOE preschool expansion initiative (Appendix C); the November 2006 survey from the Technology Educators Association of New Jersey (Appendix D); and the text from New Jersey public law P.L. 2009 c.51 authorizing pilot teacher preparation programs to address shortages in math and science (Appendix E).

If you require additional information, please contact Willa Spicer, Deputy Commissioner, at 609-984-5063.

Sincerely,

Lucille E. Davy
Commissioner

LED/CP/EA/JD/ L:\ReferralDatabase\Michelle'sReferrals\Beregon9 8-11-2008-2009 designated shortage areas.doc
Enclosures
c: Willa Spicer
Cathy Pine
Robert Higgins
Suzanne Ochse
Eileen Aviss
Melissa Fantozzi

Proposed Designated Teacher Shortage Areas for New Jersey

Prepared: **November 30, 2009**
State: **New Jersey**
School Years: **2008-2009**
Total FTE Teaching Positions: **112,938** (from NJ public schools fact sheet http://www.state.nj.us/education/data/fact.htm)

Instructional Endorsements
(For documentation see Appendices A, B, D, and E)

- Bilingual/Bicultural (K-12)
- English as a Second Language (ESL)/(K-12)
- Mathematics (K-12)
- Science (K-12)
- Special Education (K-12)
- Preschool (P-3)
- Technology Education (K-12)
- World Languages (K-12)

School Districts

Data were collected in the 2000 census; the groupings are determined by socio-economic status. The following districts belong to the "A" (lowest socio-economic) District Factor Groupings (see Appendix C).

Asbury Park City
Atlantic City
Bridgeton City
Buena Regional
Camden City
Chesilhurst
City Of Orange Twp
Commercial Twp
Dover Town
Downe Twp
East Newark Boro
East Orange
Egg Harbor City
Elizabeth City
Fairfield Twp
Fairview Boro
Irvington Township
Keansburg Boro
Lawrence Twp
Millville City
New Brunswick City
Newark City
North Wildwood City
Passaic City
Paterson City
Paulsboro Boro
Penns Grove-Carney's Pt Regional
Perth Amboy City
Pleasantville City
Quinton Twp
Salem City
Seaside Heights Boro
Trenton City
Union City
Vineland City
Washington Twp
West New York Town
Wildwood City
Woodbine Boro

APPENDIX A

In August 2002, the New Jersey State Board of Education approved a resolution that identifies subjects which have a critical shortage of teachers.

RESOLUTION TO IDENTIFY SUBJECT AREAS OF CRITICAL SHORAGE OF TEACHERS

WHEREAS, the State Board of Education has adopted regulations to issue a limited certificate for foreign teachers to teach in subject areas determined to be critically in need of teachers; and

WHEREAS, the State Board of Education is responsible under N.J.A.C. 6:11-4.9 for determining those subject areas of critical shortage of teachers; and

WHEREAS, the Department of Education and the State Board of Education have reviewed the numbers of emergency certificates issued by the Office of Licensure and Credentials and have further solicited information from local school districts on employment practices; now therefore be it

RESOLVED, that the New Jersey State Board of Education hereby determines that the following are subject areas of critical shortage as of January 2003: Special Education; World languages; English as a Second language (ESL); Bilingual/Bicultural Education; Mathematics and Science; and be it further

RESOLVED, that the New Jersey State Board of Education will periodically review these subject areas of critical shortage upon the recommendation of the Department of Education.

APPENDIX B

New Jersey Preschool Expansion Initiative

The state of New Jersey is a national leader for funding high quality preschool programs in school districts with high concentrations of low-income children. Through the current state-funded full day, full year preschool program, approximately 40,000 children in 31 school districts state-wide are getting the early start they need to be successful in school. Because of the success of this state funded program, the Governor and the Legislature have made a commitment to expand the preschool initiative to reach as many as 30,000 additional preschool age children with high quality preschool programs.

Research has shown that one of the primary elements of the success of a high quality preschool program includes an appropriately certified teacher. Therefore, over the next five years, approximately 500 school districts state-wide will need appropriately certified teachers for their state-funded preschool programs. It is estimated that approximately 2,000 new teachers will be necessary to properly staff preschool classrooms to serve the entire projected universe of 72,000 children. (400 teachers will be needed in the first year of implementation; 350 additional teachers will be needed in each of the second, third and fourth years of implementation; and 500 more teachers will be needed in the fifth year of implementation) Making financial assistance available to educators who become certified to teach in this high need area would greatly assist New Jersey in the success of this preschool initiative.

APPENDIX C

District Factor Groups
Executive Summary

The District Factor Groups (DFGs) were first developed in 1975 for the purpose of comparing students' performance on statewide assessments across demographically similar school districts. The categories are updated every ten years when the Census Bureau releases the latest Decennial Census data. The most recent data were collected in 2000.

Since the DFGs were created, they have been used for purposes other than analyzing test score performance. In particular, the DFGs played a significant role in determining the initial group of districts that were classified as Abbott districts. Additionally, subsequent to the Abbott IV court ruling, the DFGs were also used to define the group of school districts on which Abbott v Burke parity remedy aid would be based.

The DFGs represent an approximate measure of a community's relative socioeconomic status (SES). The classification system provides a useful tool for examining student achievement and comparing similarly-situated school districts in other analyses. The DFGs do not have a primary or significant influence in the school funding formula beyond the legal requirements associated with parity aid provided to the Abbott districts.

In updating the DFGs using the data from the most recent Decennial Census, efforts were made to improve the methodology while preserving the underlying meaning of the DFG classification system. After discussing the measure with representatives from school districts and experimenting with various methods, the DFGs were calculated using the following six variables that are closely related to SES:
1) Percent of adults with no high school diploma
2) Percent of adults with some college education
3) Occupational status of adult household members
4) Unemployment rate
5) Percent of individuals in poverty
6) Median family income.

Unlike the model used to create the DFGs based on the 1990 census data, this model has omitted population density as a relevant variable. The same statistical method (principal components analysis) was used to determine districts' relative SES and to determine a single measure of socioeconomic status for each district. Districts were then ranked according to their score on this measure and divided into eight groups based on the score interval in which their scores were located. Eight DFGs have been created ranging from A (lowest socioeconomic districts) to J (highest socioeconomic districts) and are labeled as follows: A, B, CD, DE, FG, GH, I, J.

A number of methodological decisions were made to avoid classifying a school district in an inappropriate DFG category. First, communities in which there were fewer than 70 respondents to the Census questionnaire are omitted. Second, school districts in which more than half of the school-aged population is enrolled in non-public schools were not classified in a DFG. Both of these limitations are consistent with methods used in the previous DFG report. Third, school districts' DFG ratings are adjusted to account for students who are part of sending-receiving relationships and, as such, live in other communities. This is the first time that such a method has

been used. Note that since students' characteristics are counted in the school district in which they attend school, non-operating school districts do not receive a DFG classification.

It has been suggested that the Decennial Census data may not accurately reflect the demographics of enrolled in a district's schools. Despite this concern, the census data are used for two reasons. First, experimentation with other data demonstrates that there are no viable alternatives to the census data. Second, considerable research suggests that community characteristics, not only an individual's characteristics, are relevant in terms of the impact of demographics on student performance.

Additionally, a small number of school districts have experienced exceptionally rapid enrollment growth in the past few years. It is possible that, despite having similar socioeconomic backgrounds, students who have lived in a particular community for a shorter period of time may not perform as well as their peers who have not recently been relocated. Some caution should be exercised when comparing student performance in such districts to others.

APPENDIX E

New Jersey Public Law P.L. 2009, c. 51

SENATE EDUCATON COMMITTEE STATEMENT TO
SENATE, No. 2707
STATE OF NEW JERSEY

DATED: MARCH 9, 2009

The Senate Education Committee favorably reports Senate Bill No. 2707.

This bill establishes an 18-month pilot program in the Department of Education to recruit and issue teaching certificates to individuals with mathematics or science skills and work-related backgrounds in those subject areas. The pilot program is designed to address the documented shortage of mathematics and science teachers in this State and, in addition, help to provide displaced workers in New Jersey with assistance and retraining to re-enter the job market.

Under the pilot program the State Board of Examiners, which by law has the authority to issue appropriate certificates to teach, will be required to issue a certificate of eligibility to an individual who:

(1) holds a bachelor's degree from a regionally accredited college or university;

(2) passes the appropriate State test of subject matter knowledge; and

(3) meets such other criteria as the commissioner shall set forth in regulation.

The bill specifies that the commissioner will have the authority to establish different criteria for teaching certification under the program based on factors such as the subject area in which the individual intends to teach and whether or not the individual participating in the program currently is certificated.

In the case of a certificated teaching staff member who participates in the pilot program, the State Board of Examiners will issue a subject area endorsement in mathematics or science, as appropriate, upon successful completion of the program.

The bill includes a delayed effective date that states that the bill will take effect two months following the date of enactment, but allows that Commissioner of Education to take such administrative action before that time as is necessary to effectuate the provisions of the act.

New Jersey Teacher Quality Partnership Grants:
William Patterson University—Wayne, New Jersey; $1,733,003.64
Project Name: The Garden State Partnership For Teacher Quality
Project Director: AnaMaria Schuhmann

- Recruiting and retaining highly qualified teachers by reforming traditional teacher preparation programs and creating a teacher residency program
- Collaborate with Kean University and Rowan University, high-need urban school districts in Bridgeton, Camden, Jersey City, Passaic, Paterson and Union City and the LEAP Academy University Charter School of Camden, and the New Jersey Department of Education.
    - School districts enroll nearly 92,000 students, or one out of every 17 NJ students.
- Focus on reforming pre-baccalaureate teacher preparation programs at the partnering universities by designing a clinically based program, expanding the number of school-based experiences for students to provide more hands-on preparation and offering targeted instruction in critical needs areas such as literacy, special education, working with English language learners and parent relationships
- Garden State Urban Teacher Residency Program in high need school districts to train 60 highly qualified teachers. Fifteen professional development schools will be established as part of the residency program to support and retain teachers and educational leaders in New Jersey's most challenging urban communities. Each professional development school will have a professor in residence to mentor the resident teachers. The 18-month program will lead to dual certification in a content area and an area of critical shortage, such as special education, ESL, or bilingual education and will culminate in a master's degree
- Development of a tracking system in partnership with the New Jersey Department of Education to track whether residency candidates are retained in an urban school district, and if so, what impact they have on student learning.
- William Paterson, Kean and Rowan universities graduate more than 2,500 traditionally prepared teachers each year, accounting for approximately 40 percent of all new teachers in the state.
- The three universities have collaborated for more than a decade to improve teacher education through joint efforts funded by previous Teacher Quality Enhancement grants in 1999 and 2004

Montclair State University—New Jersey; $674,473.64
Project Name: Teaching Residency Program
Project Director: Rosemary Steinbaum

- Newark- Montclair Teaching Residency Program (NMTRP)
- Partners include the College of Science and Mathematics, Newark Public Schools and the Newark Teachers' Union.
- Coupling rigorous research-based teacher preparation with the concrete needs and realities of Newark Public Schools
- 100 teacher residents will participate in full-time, paid clinical apprenticeships with highly qualified mentor teachers
- Residents will engage in rigorous coursework and will receive a master's degree and teacher certification in either mathematics, science or elementary and special education
- Upon completion of the master's degree, residents will be hired by Newark Public Schools and will receive induction support through the NMTRP, which will also be made available to all new teachers in Newark Public Schools
- Intensive, carefully designed professional development will support both novice and experienced teacher mentors in the continued development of their knowledge and skills for teaching, mentoring, and ultimately improving student achievement.
- Over the course of the project, 100 experienced teachers in Newark Public Schools will undertake National Board Certification as master teachers in their fields.

Full Summaries of Traders to Teachers, Progressive Science Institute, Progressive Math Institute, and World Languages

This past March, legislation was passed (commonly referred to as Traders to Teachers) that allowed for the establishment of pilot programs to create flexibility around certification requirements. The legislation refers to displaced workers and instructional areas of high need.

Traders to Teachers run by Montclair State University
This pilot program is a teacher preparation program that allows individuals displaced from the financial sector or similar industries to pursue certification to teach mathematics. This accelerated program, which is supported by the collaborative efforts of the College of Education & Human Services and the College of Science & Mathematics is for individuals who have used mathematics in their jobs, and have a sincere desire to become mathematics teachers, whether or not they majored in mathematics in college.

- The program began in September 2009 and additional cohorts will begin in the Spring of 2010. Successful applicants spend three months in an intensive, full-time (five days/week) program learning mathematics and how to teach it and spending one day each week observing and beginning to teach mathematics in a high school or middle school. Upon successful completion of the three-month component of the program, candidates will be placed in paid teaching positions in public schools in New Jersey. A commitment to teach at least through two years in these schools is expected from candidates. Intensive professional support will be provided during these first two years. After teaching successfully for two years, completing additional mathematics courses as determined on an individual basis, and passing the secondary mathematics PRAXIS II exam, candidates will be recommended by the University to the state for standard, permanent teaching certification in Mathematics.
  http://cehs.montclair.edu/academic/cop/t2t.shtml

There is another one we can discuss that is in its planning phase out of Drew University.) – Follow up with Sandra.

Progressive Science Initiative run by NJEA's Center for Teaching and Learning : One of the programs that has been very successful in its early phase of implementation is the Progressive Science Initiative (PSI). This pilot is run by NJEA's Center for Teaching and Learning in cooperation with Kean University.

- The concept behind this pilot is to take currently certified teachers who have the pedagogical talent and skills and teach them the content required to lead

highly effective science classrooms. The program includes curriculum and pedagogy. Forty-two teachers from Newark, Paterson and Jersey City spent an intensive summer learning physics and are currently teaching physics. They are supported through continuing classes, both during the week and on some Saturdays. They are also part of a virtual network that shares their materials as well as reflections on teaching. All of the classrooms in which the course is being taught are equipped with an interactive white board and student responders. The emphasis in this pilot is not only the quantity of qualified teachers, but also the quality of the student experience as well. The program will continue by adding additional teachers and additional science content. They began with physics and will next go on to chemistry and biology. http://www.njpsi.org/welcome.aspx

- Improving student achievement in science is now a national priority. To that end, increasing the number of skilled science teachers is also a national priority. New Jersey is taking on the challenge of science education by training a talented corps of teachers who will lead the next generation to high levels of student achievement in science. The New Jersey Center for Teaching and Learning (CTL), in collaboration with Kean University, have launching a new science teacher certification program designed for current certified teachers with great teaching skills and an interest in science education.

- The PSI course sequence assumes that high school students will participate in an algebra-based physics course first, followed by chemistry, then biology. The physics-chemistry-biology sequence is logical as biology requires a foundation of both chemistry and physics, and chemistry requires a foundation of physics. This sequence also supports higher levels of math achievement as math is embedded in the science program – students taking algebra and geometry experience a practical application of their math skills in their science classes.

- The curriculum of the Progressive Science Initiative (PSI) is based on the Advanced Placement (AP) Science curriculum. Research shows that students in the United States generally perform poorly compared to other nations on the Trends in International Mathematics Science Study or TIMSS. However, students who take, but do NOT pass the AP Physics B exam (scoring 1 or 2) perform on average as well as students in other countries. And students who take and pass the AP Physics B exam (scoring 3 and higher) outperform students from other countries. By dramatically increasing the number of students who take, and pass, AP science exams, PSI raises the science achievement of average US students to international levels.

- Research has shown that students of average academic aptitude (as measured by SAT scores) have demonstrated remarkable math and science achievement through the PSI program. By the time these students graduated from high school, they had taken five times as many AP science exams as the average New Jersey high school student and passed (3+) four times as many. These results were first reported in the doctoral dissertation of Robert Goodman and reported in the peer-reviewed journal of the American Association of Physics Teachers (Goodman & Etkina, The Physics Teacher, April 2008).

- The traditional "alternate route" program seeks to recruit science professionals to become teachers. This approach has many flaws, starting with the fact that there is already a shortage of science professionals. This is the core reason why we need to improve science education. Also, it's not clear that science professionals want to leave their jobs, or that they would be good teachers. We question the assumption that "science is hard; teaching is easy." The PSI approach to science education is different. PSI has demonstrated that all students can learn science. We extend that to a strong belief that all teachers can learn science. We use the PSI approach to teach science to highly skilled teachers – adults who have a passion for teaching, a commitment to the profession, an interest in science, and the dedication to lead the profession. Our goal is to get great teachers to become great science teachers through PSI.

- An important component of PSI is the use of Smart boards, notebooks and responders, as well as round tables, to create a classroom that presents students a coherent curriculum via a social constructivist pedagogy that is rich in real time formative assessment. These technology tools make possible the creation of both in-school face-to-face and interschool virtual professional learning communities (PLC), driving a cycle of continual improvement.

- PSI teachers become part of in-school and interschool PLCs, collaborating through a website where materials such as textbooks, curricula, Smart notebooks and assessments are posted. New PSI teachers extend this PLC as they download, use, discuss, and upload improved versions of these materials. The same collaborative teacher-led approach that developed PSI in one school is extended to a virtual PSI community encompassing many schools.

- The main mode of delivering PSI instruction is through the use of Smart boards, notebooks and responders. Content and formative assessment are embedded in all instruction through these tools. Since electronic notebooks

can easily be posted to, and downloaded from, www.njpsi.org, the lessons that are delivered in one classroom can be delivered in hundreds. This process also maintains both the fidelity of the model as well as drive its continuous improvement. The website created to support the current expansion of PSI from 1 to 22 schools can support hundreds of schools across the state or country.

- Also, the second and third cohorts of teachers are being instructed by teachers who learned physics and how to teach it in the first cohort. The same tools that are used to teach the teachers, are then used by them to teach their students, and then also used by these new teachers to teach the next cohorts of teachers. Exponential growth is made possible by the power, easy duplication and continuous improvement of curriculum materials.

- Success in the PSI program is measured in several ways. For students, success will be determined by the number of students who pass the mid-term and end-of-course exam in physics. In addition, success will be measured by the number of students who enroll in AP science courses after completing the basic physics course. Success can also be measured by performance on state-developed science exams (when available) and by performance on SAT II content area tests. PSI will also monitor student interest in pursuing science and math majors in college. Also, we will measure student achievement in mathematics; comparing the grades and results on state mathematics tests should show improvement versus students not engages in PSI.

- The measure of PSI's success will also be determined by teachers, including the number who complete the PSI program, the number who pass the exit exam for the program and the Praxis, the number who become fully certified – and teacher and student attitudes about the program.

- **Status of current expansion -** Last June, 42 teachers, mostly from Newark, Paterson, and Jersey City, began an intensive one-year program to better learn physics, and how to teach it; 33 of those teachers began without a teaching certificate in physics, but they will all have one soon after completing the program. In fact, in the program's first year PSI will have trained and certified twice the number of physics teachers than were certified in prior years by all the universities in New Jersey.

- More than 1,200 students are studying physics from that first cohort of PSI teachers. A preliminary indicator of success is that more than 40% of those students, when surveyed in December, have indicated that they intend to take AP Physics B, in addition to PSI Chemistry, next year. If even half these

students follow through, this group of students will, in the first year of the program, have

Progressive Math Initiative Background - Successfully completing algebra by the end of ninth grade is strongly correlated to eventual graduation from college or university. A key goal of the "Math Grants" program that was initiated by the New Jersey Center for Teaching and Learning (CTL) in June 2007 was to work with middle schools to increase the percentage of students who complete algebra by the conclusion of eighth grade; increasing the rigor of their middle school mathematics experience and reducing, to near zero, the number of students who have not completed algebra by the end of ninth grade. The program began by giving $25,000 grants to each of three middle schools to support their formation and resourcing of Professional Learning Communities (PLCs) with the goal of having the teachers develop approaches to achieve the goal of having more students complete algebra by the end of eighth grade. In addition, three regional meetings and a summer conference were held each year so that the PLCs could collaborate between schools. Also, math fellows from the CTL participate in the school PLC meetings at least once each month.

- The Accuplacer test is used by all two-year and many four year colleges in New Jersey to determine college readiness with respect to mathematics. The two tests that must be passed are Arithmetic and Elementary Algebra. Since these tests are online, adaptive and inexpensive, they can be taken annually to monitor progress by individual students as well as schools. The operational measure of student achievement in mathematics used by the math program is the percentage of students passing those two tests, as defined by New Jersey colleges.
- This also addresses the serious disconnect between K-12 and college curriculum. The fact that such a high percentage of New Jersey students pass the high school exit tests and then fail the very minimal college entrance tests is testament to that disconnect. This approach makes it clear to middle school teachers and students what is expected of them by colleges. As this information and expectation moves into high schools, the discontinuity between K-12 and college can be significantly reduced.

- At the end of first two years of the program, the percentage of eighth graders passing the Accuplacer Arithmetic test had risen from about 15% to about 25% and the percentage passing Accuplacer Algebra had risen from about 2% to about 12%.
- Three additional schools joined the program last July. At the same time, lessons learned from the Progressive Science Initiative (PSI) were used to transform what had been the "Math Grants" program to the Progressive Mathematics Initiative (PMI). Specifically, while schools had been moving towards using Smart boards, notebooks and responders, this direction was strongly encouraged for all PMI classrooms. This allowed the six in-school PLCs to begin sharing instructional materials, in the form of Smart notebooks, and work together on improving them.
- A key focus of the PMI has become to develop units of instruction that can be shared and continuously improved between the current six schools now, and with additional schools in the future. This year, the goal is to develop a 20 unit sequence that leads from the end of fourth grade arithmetic through to algebra. The sequence of units was determined this last summer and schools each chose a unit for their PLC to work on. Those units are then shared and reviewed by CTL math fellows and the other schools at each regional meeting. The goal is that the sequence of units is created through this team effort so that all schools feel confident in their value and use them to teach in their schools.
- The process involves each school posting a Smart notebook unit on www.njpmi.org about two weeks before the regional meeting. A review committee composed of two teachers from each school and a CTL math fellow review two units prior to the regional meeting. They then meet in person to discuss the unit and suggest improvements. The math fellow leads this discussion to a consensus and then implements the suggested changes. The unit is then posted on the website for use by all the schools and to

encourage further comments and improvement by all PMI participants. The unit is never "complete", but it is now considered useable and subject to continuous improvement. The cycle then repeats through the year until that course is complete. Then work will begin on the next course. The three courses that will comprise middle school mathematics, Arithmetic/Algebra, Geometry, and Probability and Statistics, are being developed in that order.

- A key value of this approach, in addition to creating these course materials, is that in the process of working as multi-grade mathematics teams developing each notebook the teachers are forced to confront differences in curricular approaches that detract from coherence, between and even within courses. Terms, approaches and methods are discussed in the context of creating a Smart notebook that will be used by all. Where before, teachers would often go their own way, leading to confusion on the part of students; this approach forces teachers to discuss their practice and reach consensus.
- The new PMI approach is geared towards scalability. The more schools that are participating the more powerful the model becomes; more teachers will be engaged in using and improving the materials for the benefit of all the schools. The website, www.njpmi.org is not a limitation; it can support hundreds of schools, not just the current six. Also, current PMI teachers can become math fellows to support new PMI schools; this aspect of the program also contributes to its scalability. However, the CTL will not have the funding to provide grants to new schools; in fact, new schools will have to pay the expenses necessary to support their participation.

World Languages

Since the release of the 1996 Core Curriculum Content Standards, New Jersey has required the study of world languages in the elementary through high school grades resulting in more students studying world languages in grades K-8 than in any other state according to a 2005 state survey. New Jersey has also conducted the largest statewide assessment of world languages in the country in grade 8 (70,000 students) using online technologies over a three-year period. This initiative yielded important

research data and paved the way for allowing students to receive graduation credits by demonstrating language proficiency in lieu of seat time.

In February 2010, the department will launch a project entitled **New Jersey's Model for High School Reform in World Languages: *Building a Linguistically and Culturally Competent Workforce*** in partnership with the American Council on the Teaching of Foreign Languages and the Foreign Language Educators of New Jersey. The goal of the consortium is to examine within the context of high school reform, an effective way to improve world languages instruction in high school programs that will result in a greater number of students achieving higher levels of language proficiency for use in the global workplace and in New Jersey's diverse communities. The world languages high school reform plan is based on the following key concepts: increased student language proficiency is periodically measured by reliable and valid proficiency-based assessments; results measured in terms of increased language proficiency are rewarded by valued incentives; and measuring and rewarding results in terms of language proficiency (the ability to function in the language in real world situations), will enable students to realize the value of acquiring language competency as a major asset in any chosen career path. The plan includes a four-year pilot program in high schools (north, central and southern regions) that offers options and resources to assist in improving student outcomes in world languages. The program is voluntary and is open to high schools that exhibit a desire to participate and that meet certain criteria. Criteria include documentation of administrative, local school board, staff and community support of the pilot.

Expansion of Chinese

New Jersey has focused on creating an infrastructure to support the implementation of new programs by building teacher capacity. In 2005, the department initiated discussions that led to a collaboration with the Rutgers University World Languages Institute, Department of Asian Language and Cultures, Graduate School of Education(GSE) and Chinese Language Association for Elementary and Secondary Schools (CLASS) to develop an ***Accelerated Chinese Language Teacher Certification Program*.** This first program of its kind in New Jersey was state approved in 2006 and provides training for native or heritage speakers of Chinese currently working in other fields that seek to earn New Jersey Chinese teacher certification to meet the needs of the state's schools. The program has served 102 teacher candidates from 2006 – 2008 with 27 earning Certificates of Eligibility to teach Chinese over the two-year period. The program includes a Practicum in language education offered by the Graduate School of Education. The course was conducted in 2007 and 2008 for two weeks at the Highland Park Summer Camp followed by two weeks at Princeton H. S. with students from Princeton and West Windsor-Plainsboro K-12 school districts. It was funded by grants from the Freeman Foundation and STARTALK. The Rutgers GSE has also developed an alternate route program specifically for teachers of Chinese who have already earned their Certificate of Eligibility enabling them to complete the requirements for standard

certification and to continue study in the GSE Ed.M. Language Education program. The GSE has also obtained state approval as the first **World Languages Alternate Route Center** that provides ongoing in-service support for teachers of Asian languages and other world languages. **The Rutgers Multimedia Chinese Teaching System (RMCTS)** currently constitutes a complete on-line set of textual and audio course materials for use in teaching Chinese from beginning to advanced levels and includes a component suitable for use in K-12 classrooms. The site's interactivity and multimedia capabilities will be enhanced through the addition of podcasts and video lessons and the development of a set of on-line teacher manuals outlining strategies and methods for using RMTCS both in and outside of the classroom. Additional information on the Rutgers Chinese Language initiative may be accessed at http://k12chinese.rutgers.edu/Site/The_Initiative.html .

The next phase of this initiative involves expansion of these initiatives to include **Hindi, Korean and Arabic Certification Programs.** New department initiatives that support international education and the expansion of critical language programs include a partnership with i Tunes University, and the development of a virtual school policy and state virtual learning initiative.

areas of strength and improvement for schools using the indicators of effective school practice from a document entitled the *Teaching and Learning Tool*.

Collaborative Benchmark Meetings provide ongoing technical assistance to Title I schools and districts in need of improvement to aid them in implementing CAPA recommendations, conducting of data analysis using one (Exhibit A) and three-year trend charts (Exhibit B) and cluster results (Exhibit C), needs assessment and creation of the unified school improvement plan. The benchmark follow-up process consists of at least two full-day visits each year for all schools having received a CAPA visit. There are approximately 200 schools that continue to receive assistance from a highly skilled educator.

- **Restructuring Process** – A total of 123 schools in NJ were required to restructure under federal law. All schools/districts planning for restructuring participate in two status meetings that include district leadership, school leadership, school improvement consultants, and NJDOE staff. During these meetings, the participants review the content and implementation status of the CAPA recommendations and the most recent NCLB Unified Plan. Participants also review the instructional improvements and governance changes already underway. The selection of an option must take into account the capacity of the district and of the school; but, most importantly, the decision must be based on which option is most effective in helping students meet proficiency benchmarks. The district is responsible for a continuous assessment of the school's needs to identify those strategies that are successful and those that need modification.

Workshops and Technical Assistance Sessions - On an annual basis**, workshops and technical assistance sessions** are required for schools in advanced levels of improvement status. These workshops focus on needs assessment, the Title I Unified Plan, restructuring, systems thinking, data analysis, walkthroughs, accountability and effective practices/research-based programs. School improvement consultants and DOE school support specialists provide on-going follow up after the workshops to assist schools with turn keying or implementing the processes.

The **School Support Services Project** focuses on NJ's 29 lowest achieving Title I schools. These schools were selected based on their AYP status and the state's differentiated model (Exhibit D). The NJDOE school support specialist works intensively with the

identified schools to assist with planning and implementation of the action plans contained in the approved Title I Unified Plan (school improvement plan). The specialists visit their assigned schools at least twice a month. Using a prescribed protocol, they conduct 8 to 10 classroom walkthroughs with the principal and school leaders.

School Improvement Funds - NJJDOE uses the **school improvement Part G funds** for Title I schools in the most advanced levels of school improvement directing these resources to support the implementation of designated improvement strategies. Ongoing monitoring and implementation checks are conducted by school improvement consultants.

The **NLCB School Improvement Learning Community** meets monthly and provides professional development to enhance the knowledge, capacity and skills of school improvement consultants and DOE staff for their work in conducting school reviews and follow-up services to schools and districts.

The Reward Grant and Case Studies on Effective Practices Project recognizes and rewards those schools that met state benchmark for two consecutive years and came out of improvement status after receiving services from the statewide system of support process. In 2009, twenty six schools were recognized and awarded Reward Grants of $100,000. The *Case Studies on Effective Practices* portion of the project closely examines (1) which practices have proven more difficult to change, (2) relationships between the different practices, and (3) whether certain practices are more critical for improvement. These schools represent an important opportunity to learn how the leadership in these schools was able to implement effective practices. Lessons learned from these schools helps to build a knowledge base for NJDOE to e provide supports to schools that have not experienced improvement.

District In Need of Improvement Project (DINI) - In 2009, fifteen districts reached the federal corrective action phase of district in need of improvement status. As a result, the NJDOE launched a **DINI Project** of intervention to provide onsite technical assistance and support. The intent of the project is to assist districts with the design and implementation of programs using the ARRA funds as well as the completion of the required DINI plan. **Safe and Civil Schools: A Coordinated Approach for Social-Emotional and Character Development** – In response to the research findings on the importance of social and emotional learning to student performance and success, the department has been collaborating with Rutgers University since 2007-2008 to provide technical support to 44 schools in fully integrating social-emotional learning (SEL) throughout their educational programs. The **Turnaround Leadership Network**, a

professional development initiative to create collegial networks for school leaders across the state, fosters the abilities of educational leaders by providing opportunities to enhance and hone leadership skills. Through an established partnership beginning in 2008 with Montclair State University (Northern Region), The College of New Jersey (Central Region), and Rowan University (Southern Region), the network works to assist new and veteran educational leaders, as well as those in schools in years three to five of NCLB corrective action status.

Partnerships with Regional Assistance Centers assist NJ in its school turnaround efforts. The USDE funded **Mid Atlantic Comprehensive Center (MACC)** works with the NJDOE with technical assistance, research, project design and provides the state with national education perspectives. The **Regional Education Laboratory (REL) Mid-Atlantic Center at Rutgers University** has collaborated with the NJDOE to present to NJ educators relevant research developed as practice guides by USDE's Institute of Educational Sciences.

List of Intents to Apply

Promise Neighborhoods Planning Grants

U.S. Department of Education

May 21, 2010

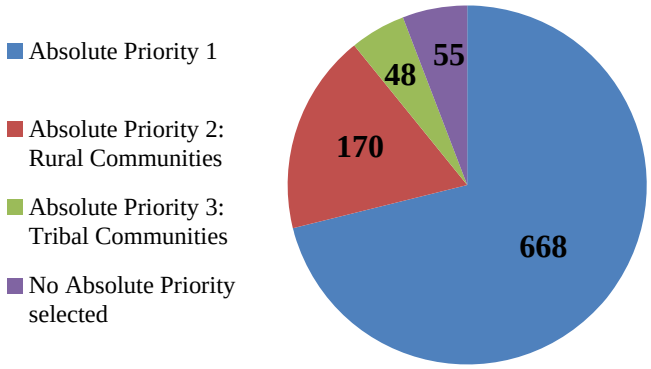
PLEASE NOTE:

The following information was submitted to the Department on or before May 21, 2010 by entities intending to apply for a Promise Neighborhoods planning grant . Submitting an intent to apply was **not required,** and an eligible entity that did not submit an intent to apply may still apply for a planning grant. Furthermore, entities that submitted an intent to apply are not required to submit an application. These entities have not been screened for eligibility.

The Department received some notices of intent to apply in unreadable file formats or as blank documents. If an entity submitted an intent to apply and its information does not appear here, that may be the reason. An entity gains no competitive advantage or disadvantage by appearing on this list.

This information is used for planning purposes only. The Department collects this information with the goal of informing our internal planning for the peer review process.

Total Intents to Apply Received: **941**



Richard Stockton College	Atlantic City	New Jersey	Absolute Priority 1
Rowan University	Camden	New Jersey	Absolute Priority 1
Rutgers Univeristy-Camden/Center for Strategic Urban Community Leadership	Camden City	New Jersey	Absolute Priority 1
St. Michael the Archangel Regional School	Clayton	New Jersey	Absolute Priority 2: Rural Communities
DH/Perfil Latino TV, Inc.	Cumberland County	New Jersey	Absolute Priority 2: Rural Communities
AAA ACADEMY FOR CHILDREN	Dover	New Jersey	Absolute Priority 1
AIM FOR A TWO Z, INC	EAST WINDSOR TWP AND EWING TWP	New Jersey	Absolute Priority 1
Kingdom Kids	Mercer County, New Jersey	New Jersey	Absolute Priority 1

Catholic Charities DOM	Middlesex County	New Jersey	Absolute Priority 1
New Community Corporation	Newark	New Jersey	Absolute Priority 1
The Center for Collaborative Change	Newark	New Jersey	Absolute Priority 1
Unified Vailsburg Services Organization (UVSO)	Newark	New Jersey	Absolute Priority 1
Family Life Education Center (FLEC), Program of the Metro Regional Diagnostic and Treatment Center, Newark Beth Israel Medical Center	Newark, Hillside, and Elizabeth	New Jersey	Absolute Priority 1
Against all Odds Foundation	Newark-Essex County	New Jersey	Absolute Priority 1
Missionary Society of Salesian Sisters, Inc.	Paterson	New Jersey	Absolute Priority 1
New Jersey Community Development Corporation	Paterson	New Jersey	Absolute Priority 1
Paterson Education Fund	Paterson	New Jersey	Absolute Priority 1
Paterson Free Public Library	Paterson	New Jersey	Absolute Priority 1
Paterson Public Schools	Paterson	New Jersey	Absolute Priority 1
United Way of Passaic County	Paterson	New Jersey	Absolute Priority 1
YMCA of Paterson	Paterson	New Jersey	Absolute Priority 1
Central Jersey Community Development Corporation	Somerset/New Brunswick	New Jersey	Absolute Priority 1
Children's Futures	The City of Trenton in Mercer County	New Jersey	Absolute Priority 1
Young Scholars' Institute	Trenton	New Jersey	Absolute Priority 1
United Way of Greater Union County	Union County	New Jersey	Absolute Priority 1

NCLB Advisory Council - External Members by Titled Program

LName	FName	District/Organization	Reg-Term	Title IA	Title IB	Title IC	Title ID	Title IF	Title IIA	Title IID	Title IIIA	Title IV, Part A	Title IV, Part B	Title V, Part A	Title VI, Part A	Title VI, Part B	Title X
Adair	Marie	NJ Assn for Supervision and Curriculu	C 2011	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
Aklonis	Lorraine Je	Rahway Public Schools	C 2010	☑	☐	☐	☐	☐	☑	☐	☑	☐	☐	☑	☑	☐	☐
Amabile	Joseph	Newark Teachers Union AFT Local 48	N 2011	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Benford	Melissa	International Charter School of Trento	C 2010	☑	☐	☐	☐	☐	☐	☑	☐	☑	☐	☐	☐	☐	☐
Bradley	Debra	New Jersey Principals and Supervisor	C 2011	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Brown	Philip	NJ Center for Character Education	C 2011	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐
Catena	Anne N.	Princeton University	C 2012	☐	☐	☐	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐
Chavis	Janet	Newark Public Schools	N 2012	☑	☐	☐	☑	☐	☑	☐	☐	☐	☐	☑	☐	☐	☐
Coleman	John	Toms River Regional Schools	C 2011	☑	☐	☐	☑	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐
Corriston	Christine	NJSACC (NJ School-Age Care Coaliti	N 2012	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐
Corwell	George	New Jersey Catholic Conference	C 2010	☑	☐	☐	☐	☐	☐	☑	☑	☑	☐	☑	☐	☐	☐
Davidson	Donna E.	Office of Catholic Schools	C 2013	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Dyer	Cheryl	Bridgewater-Raritan Regional School	C 2010	☑	☐	☐	☐	☐	☑	☑	☑	☑	☐	☑	☐	☐	☐
Fratz	Amy	NJ Education Association (NJEA)	C 2011	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Fredericks	Charles	Egg Harbor Township Public Schools	S 2011	☑	☐	☐	☐	☐	☑	☑	☑	☑	☐	☑	☐	☐	☐
Gaspich	Jon	Association of Student Assistance Prof	C 2010	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	☐	☐	☐	☐
Gerry	Mitchell	Newark Teachers Union	N 2010	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
Grant	Brenda	Pemberton Township School District	S 2010	☑	☐	☐	☑	☐	☑	☑	☑	☑	☑	☑	☐	☐	☐
Hernandez-Ma	Yasmin	Newark Public Schls/Newark Intl Newc	N 2010	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐
Holoduek	John C.	Hudson County Schools of Technolog	N 2010	☐	☐	☐	☑	☐	☐	☑	☐	☐	☑	☑	☐	☐	☐

LName	FName	District/Organization	Reg-Term	Title IA	Title IB	Title IC	Title ID	Title IF	Title IIA	Title IID	Title IIIA	Title IV, Part A	Title IV, Part B	Title V, Part A	Title VI, Part A	Title VI, Part B	Title X
Horowitz	Ellen S.	Freehold Regional HS District	C 2010	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐
Hutcheson	Craig M.	NJASA and Kittatinny Regional SD	N 2011	☑	☐	☐	☐	☐	☑	☑	☐	☑	☐	☐	☐	☐	☐
Jennings	Debra	Statewide Parent Advocacy Network (	N 2011	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
Knox	Wanda	Parent Rep/Pemberton	S 2010	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Kobik	Christopher	Lower Cape May Regional School Dist	S 2010	☑	☐	☐	☐	☐	☑	☑	☑	☑	☐	☑	☐	☐	☐
Kusielewicz	Janina J.	Clifton Public Schools	N 2010	☑	☐	☐	☐	☐	☑	☑	☑	☐	☐	☑	☐	☐	☐
Ledford	Geri	Garfield Public Schools	N 2010	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐
Mazzarella	Joseph D.	Eatontown Public Schools	C 2010	☑	☐	☐	☐	☐	☑	☑	☑	☑	☐	☑	☐	☐	☐
McKenzie	Victa C.	Middletown Board of Education	C 2012	☑	☐	☐	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐
O'Connor	Ellen	New Jersey Association of Federal Pro	N 2010	☑	☐	☐	☐	☐	☑	☑	☑	☑	☑	☑	☐	☐	☐
Patterson	Brenda	Paterson Public Schools	N 2011	☑	☐	☐	☐	☐	☑	☑	☑	☑	☐	☑	☐	☐	☐
Polk	Deborah	Camden County Public Schools	S 2010	☑	☐	☐	☑	☐	☑	☑	☑	☑	☑	☑	☐	☐	☐
Pruzansky	Josh	Agudath Israel of New Jersey	N 2012	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Puryear	Thomas La	NAACP: Oranges & Maplewood	N 2012	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐
Quinn Kreider	Barbara	Moorestown Friends School	S 2010	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Rivas	Jenaro	Jersey City School District	N 2011	☑	☐	☐	☑	☐	☑	☑	☑	☑	☐	☑	☐	☐	☐
Seyler	Sharon	New Jersey School Boards Associatio	C 2013	☑	☑	☑	☑	☐	☑	☑	☑	☑	☑	☑	☑	☑	☑
Singh	Bickram	Essex County Vocational-Technical Sc	N 2010	☑	☐	☐	☐	☐	☑	☑	☑	☑	☐	☑	☐	☐	☐
Stiles	Brian M.	Jersey City Golden Door Charter Scho	N 2012	☐	☐	☐	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐
Tomeo-Rehm	Rose	Mt. Olive School District	N 2011	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐
Turner	Amos	Parent Rep/Perth Amboy	C 2010	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Tyler	Ryan	Center for Equity and Excellence		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Folder 2: District Mentoring Plan: The District Plan Development and Approval Process

Introduction

The Mentoring Resource Toolkit is designed to provide the local professional development committee (LPDC) with resources to develop effective mentoring plans based on the state regulations for mentoring and aligned with the New Jersey Professional Standards for Teachers. This folder, *District Mentoring Plan: The District Plan Development and Approval Process*, will provide detailed information on the required components of a local mentoring plan and offers numerous resources to support LPDCs in designing an effective standards-based mentoring program. This folder will also provide the criteria boards of education will use to approve local mentoring plans. Numerous resources are provided in this folder to assist districts in fulfilling their responsibilities.

Guiding Questions

- What are the regulations that govern the development of a local mentoring plan?
- How do the New Jersey Professional Standards for Teachers and the *NCLB* Key Elements of High Quality Professional Development align to ensure effective design and implementation of a local mentoring plan?
- What are the component parts of a local mentoring plan?
- How does the LPDC assess current mentoring efforts prior to developing a local mentoring plan?
- How does the LPDC develop measurable goals to guide the local mentoring plan?
- How does the LPDC ensure rigorous criteria for mentor selection?
- How does the LPDC ensure rigorous learning opportunities for mentors and novice teachers?
- How does the LPDC design an action plan that will have the necessary resources and can be implemented once the local mentoring plan has been approved?
- How does the LPDC build data-gathering into the local mentoring plan to support ongoing program evaluation efforts?
- How are local mentoring plans approved?
- What are the procedures for the local mentoring plan approval process?
- Who is involved in the approval process?

Glossary

County superintendent: the county superintendent of schools represents the New Jersey Department of Education and is responsible for certifying receipt of approved local district mentoring plans to the Commissioner.

District board of education: provider of publicly-funded preschool, elementary, secondary, and adult high school education programs and responsible for approving the local mentoring plan and for reporting the results of ongoing mentor program evaluation.

Local mentoring plan: a plan developed by the LPDC that specifies the mentoring program components, aligned with the New Jersey Professional Standards for Teachers that will be implemented as the district's mentoring program for novice teachers.

Local Professional Development Committee (LPDC): the local committee established by the district board of education pursuant to *N.J.A.C.* 6A:9-15.3(d) assigned to plan and implement local district professional development programs, including the mentoring for quality induction program.

Quality Assurance Annual Report (QAAR): an annual report submitted by the district board of education which includes a report on the effectiveness of implementation of the local mentoring plan. (*N.J.A.C.* 6A:9-8.4(b) 4)

Key Resources

- Visual Graphic for Development of District Mentoring Plan (R1)
- Professional Standards Alignment Activity (R2 – 5)
- Development of a Mentoring for Quality Induction Program (R6)
- Rubric for Assessment of Current Status of a District/School Mentoring Plan (R7)
- District Mentoring Plan Checklist (R8)
- Section 1: District Profile
    - District Profile Sheet
    - Sample Table of Contents for District Mentoring Plan (R10)
    - LPDC Signoff Sheet (R11)
    - District Board of Education Approval Form (R12)
- Section 2: Needs: Mentoring Plan Self-Assessment Tool (R13)
- Section 3: Vision and Goals: SMART Goal Framework (R14)
- Section 4: Mentor Selection
    - Qualities of Effective Mentors (R15)
    - Criteria for Mentor Selection (R16)
    - Sample Mentor Application Forms (R17 – 19)
- Section 5: Roles and Responsibilities for Mentors
    - Sample Mentoring Contract (R20)
    - Ethical Practice Code for Mentors (R21)
    - No-Fault Exit Process (R22)
- Section 6: Professional Learning for Mentors
    - Sample Training Agendas (R23 – 24)
    - Common Mentoring Activities (R25)
- Section 7: Professional Learning for Novices: Sample Requirements (R26)
- Section 8 – 10: Action Plan: Sample Templates (R27 – 29)
- Section 11: Program Evaluation: Five Levels of Program Evaluation (R30)
- Visual Graphic for District Mentoring Plan Approval Process (R31)

State Regulations Governing the District Mentoring Plan

State regulations require the following components be included in the mentoring plan (*N.J.A.C.* 6A:9-8.4(c)1):

- Goals that, at a minimum, enhance teacher knowledge of and strategies related to the Curriculum Core Content Standards (CCCS) in order to facilitate student achievement; identify exemplary teaching skills and educational practices necessary to acquire and maintain excellence in teaching; and assist novice teachers in the performance of their duties and adjustment to the challenges of teaching;
- An application process for selecting mentor teachers;
- Criteria for mentor teacher selection;
- Provisions for comprehensive mentor training;
- Identification of mentor teacher responsibilities;
- Logistics for mentoring plan implementation;
- Consideration of collaborative arrangements with colleges and universities; and
- Provisions for the use of State funds.

To the LPDC: Before You Begin

Since 2000, the LPDC has had responsibility for planning and implementing district professional development for teachers. This experience makes LPDCs the ideal group to focus on the specialized professional development needs of novice teachers. Take a moment to review the visual graphic for plan development (R1) to see how all the component parts fit together to create a support system that will aid novice teachers in assuming their professional responsibilities.

The mentoring plans LPDCs develop must align with the New Jersey Professional Standards for Teachers. In order to enhance your ability to align your plan to these standards that underlie what New Jersey expects teachers to know and be able to do, please take the time to work through the standards alignment activity (R2 – 5) as a group. Doing so will make your planning more effective and will serve to clarify your own understanding of the standards and their role in supporting teacher focus on those things that will enhance professional practice and support student achievement.

Beyond writing the local mentoring plan, the LPDC has a vital role in the success of the Mentoring for Quality Induction initiative. LPDCs can further support their district's efforts to create a strong induction program by:

- Welcoming novice teachers and verbally supporting the mentoring program;
- Advocating for the mentoring program because it is good for the students, school, district, and community;
- Maintaining open communication about the mentoring program with teachers, parents, and community; and
- Facilitating ongoing program evaluation.

Assess Current Status of District/School Mentoring Efforts

Many districts have been engaged in mentoring activities or have even piloted and established mentoring programs prior to the Mentoring for Quality Induction initiative. Other districts are beginning now to address the issue of mentoring for novice teachers in a systemic way. It is important for LPDCs to assess their district's current state with regard to mentoring. LPDCs may find their district already has a program that meets or even exceeds the regulatory requirements. Documenting this should make creation of the local mentoring a simple and straightforward activity. For LPDCs that are guiding the development of their district's first systemic mentoring programs, the items on the checklist for developing a Mentoring for Quality Induction program (R6) will serve to highlight those program components and activities that contribute to a strong program of support for novice teachers and will satisfy state requirements.

Begin with the End in Mind

LPDCs that are beginning to draft a local mentoring plan will want to study the rubric (R7) that district boards of education will use to assess and approve local mentoring plans. The categories on this rubric match the sections of the mentoring plan (needs assessment, vision and goals, mentor selection, professional learning opportunities for mentors and novice teachers, program evaluation, etc.). District plans must satisfy the "Beginning" level, which aligns with state regulations, in order to be approved. As districts implement and refine their local mentoring plans, they may move on to "Developing," "Established' or "Sustained" levels. The resources in this toolkit are intended to help LPDCs and districts not only satisfy state regulations, but create powerful Mentoring for Quality Induction programs that will help novice teachers acclimate to the demands of a complex profession and will focus all professional staff on enhancing teacher effectiveness and student success.

Write the District Mentoring Plan

LPDCs who have written district professional development plans will find writing the local mentoring plan a familiar experience. Figure 1 shows the component parts of the local mentoring plan. The checkmarks to the left indicate those portions of the plan that are required in the state regulations governing mentoring. The Department of Education strongly recommends that LPDCs provide information for each section of the plan. Resources to assist the LPDC in writing each section of the local mentoring plan are described briefly in each section and are included in the Appendix. There is a Local Mentoring Plan checklist (R8) to help LPDCs organize and assemble the materials needed for each section of the plan.

Figure 1. Key Components of District Mentoring Plan

Regulations	Components of District Mentoring Plan
	Section 1: District Profile
	Section 2: Needs Assessment
✓	Section 3: Vision and Goals
✓	Section 4: Mentor Selection
✓	Section 5: Roles and Responsibilities for Mentors
✓	Section 6: Professional Learning Components for Mentors
✓	Section 7: Professional Learning Components for Novice Teachers
✓	Section 8: Action Plan for Implementation
	Section 9: Resource Options Used
✓	Section 10: Funding Resources
✓	Section 11: Program Evaluation

Section 1: District Profile

This section includes basic demographic information about the district to aid in the data-gathering essential for ongoing program evaluation. Resources for this section include a District Profile Sheet (R9), a sample table of contents for the plan (R10), LPDC signoff sheet (R11), and a local board of education approval form (R12) that will be returned to the LPDC once the board of education reviews the mentoring plan.

Note: District profile sheet may be the same sheet referenced in the local professional development plan.

Section 2: Needs Assessment

This section includes a current needs assessment of the mentoring program. The needs assessment should include data on mentors and novice teachers, training components of the current mentoring program, and identified needs of the mentoring program. The needs assessment should establish priorities which align with state regulations for mentoring and the district goals. A plan development checklist (R6) and a self-assessment tool (R13) will aid LPDCs in the needs assessment process.

Section 3: Vision and Goals

This section includes a vision statement for the district's Mentoring for Quality Induction program. The goals for the mentoring plan must align with the New Jersey Professional Standards for Teachers, the NCLB Key Elements of High Quality Professional Development, and state regulations. At a minimum, the goals must:

- Enhance teacher knowledge of and strategies related to the CCCS in order to facilitate student achievement;
- Identify exemplary teaching skills and educational practices necessary to acquire and maintain excellence in teaching; and
- Assist novice teachers in the performance of their duties and adjustment to the challenges of teaching.

Section 4: Mentor Selection

This section includes the application process and criteria for selection of mentors. Minimum criteria include selection of a certified teacher with at least three years of experience, who demonstrates commitment to the goals of the mentoring plan, agrees to maintain confidentiality in the mentor-novice teacher relationship, demonstrates exemplary content knowledge and pedagogy, and is matched with the novice teacher's content area, if possible. The Appendix contains resources that identify qualities of effective mentors (R15), list selection criteria (R16), and offer sample mentoring applications (R 17 – 19). The Appendix also offers a sample mentoring contract (R20), an ethical practice code (R21), and a no-fault exit process (R22).

Additional resources for mentor selection are included in Folder Four.

Section 5: Roles and Responsibilities for Mentors

This section identifies the roles and responsibilities of the mentors as they provide support and guidance to novice teachers. LPDCs are encouraged to use material contained in Folder Four, *District Mentoring Plan: Components of Mentor Training*, in developing this section of the local mentoring plan. LPDCs should also refer to the chart indicating stakeholder roles and responsibilities that is located in the Overview that precedes Folder One.

Section 6: Professional Learning Components for Mentors

This section includes the professional learning components the district will use to train and support mentors. The district must ensure that these components are aligned with the New Jersey Professional Standards for Teachers, NCLB professional development requirements, and the New Jersey Professional Development Standards. Training components could include: roles and responsibilities; transition to mentoring; communication and building trust; mentoring challenges; adult learning theory; questioning techniques; using standards-based formative assessments; classroom visitations; collegial coaching; designing professional growth activities; and ongoing networking for mentors. The Appendix contains sample training agenda and schedule (R23 – 24) and common mentoring activities (R25), but most of the material to support planning this section will be found in Folder Four, *District Mentoring Plan: Components of Mentor Training*.

Note: Section 6 should be referenced in your local professional development plan.

Section 7: Professional Learning Components for Novice Teachers

This section includes the professional learning components the district will use to provide novice teachers with rigorous mentoring to impact teacher effectiveness and student learning. The district must ensure that these components are aligned with the New Jersey Professional Standards for Teachers, NCLB professional requirements, and the New Jersey Professional Development Standards. Training components could include: new teacher orientation; understanding and applying the New Jersey Professional Standards for Teachers; working with a mentor; classroom and behavior management; meeting the needs of diverse students; lesson planning; and designing professional goals.

The Appendix contains a sample training schedule (R26) but most of the material to support planning this section will be found in Folder Five, *District Mentoring Plan: Components of Novice Teacher Training.*

Note: Section 7 should be referenced in your local professional development plan.

Section 8: Action Plan for Implementation

This section includes the steps to developing an action plan for implementation of the local mentoring plan. Resources for action planning, which include listing goals and expected outcomes, procedures for mentor selection; professional learning activities for mentors and novice teachers; and the timeline for development, approval, implementation and evaluation of the program components are included in the Appendix. The Appendix offers sample action plan templates (R27 – 29), one of which has been completed, to help LPDCs understand and implement the planning process.

Section 9: Resource Options Used

This section includes identification of the district resources that will be used to support the implementation of the local mentoring plan (i.e., release time for classroom visitations, video resources, published resources, substitute coverage, training providers).

Section 10: Funding Resources

This section includes plans for use of the funding outlined in state regulations and additional funding options available within the district, by the state or through grants. District funds could be used for additional professional learning and training, materials (e.g., books, videos, printing), additional stipends, and salary for a program coordinator.

Section 11: Program Evaluation

This section includes resources for planning the program evaluation required in the state regulations. The purpose of program evaluation is to support program improvement as well as to ensure accountability for resources. By building in a plan for evaluation at the outset, districts will be able to gather and analyze data to support program refinements as well as to meet state reporting obligations. The Appendix contains guidance as to five levels of professional development evaluation (R30). Additional resources to support the planning and implementation of program evaluation are located in Folder Three, *District Mentoring Plan: Program Evaluation Process*.

District Plan Approval Process

The procedure for approving the local mentoring plan is outlined in the visual graphic for mentoring plan approval (R31):

1. The LPDC presents the mentoring plan to the district board of education for approval;
2. After the review and approval, the board of education submits the plan to the county superintendent; and
3. The county superintendent notifies the Commissioner of the receipt of the approved local mentoring plan from the district.

District Plan Approval Timeline

The deadline for submission of the 2005-2006 mentoring plan will be **September, 2005**.

- The LPDC must submit the local mentoring plan to the district board of education by **September 1, 2005**.
- After review and approval, the district board of education will submit the approved mentoring plan to the county superintendent by **September 30, 2005**.
- The county superintendent will certify receipt of approved plans to the Commissioner by **October 15, 2005**.

Updated information about timelines can be accessed through the Department of Education (DOE) website at http://www.state.nj.us/njded/profdev/mentor/.

Appendix: Resources

Key Resources

F2-R1	Visual Graphic for District Mentoring Plan Development and Approval Process
F2-R2	New Jersey Professional Standards for Teachers Awareness Activity
F2-R3	New Jersey Professional Standards for Teachers
F2-R4	*NCLB* Key Elements of High Quality Professional Development
F2-R5	Matrix Alignment Chart: New Jersey Professional Standards for Teachers and *NCLB* Key Elements
F2-R6	Mentoring for Quality Induction Program Checklist
F2-R7	Rubric for Assessment of a District/School Mentoring Plan
F2-R8	District Mentoring Plan Checklist
F2-R9	District Profile Sheet
F2-R10	Sample Table of Contents for District Mentoring Plan
F2-R11	LPDC Sign-Off Sheet
F2-R12	District Board of Education Approval and Comment Form
F2-R13	Self- Assessment Tool for District Mentoring Plan
F2-R14	SMART Goal Framework
F2-R15	Qualities of Effective Mentors
F2-R16	Criteria for Selection of Mentor Teachers
F2-R17	Sample Mentor Teacher Application and Assignment Form 1
F2-R18	Sample Mentor Teacher Application and Assignment Form 2
F2-R19	Sample Mentoring Intent Form
F2-R20	Sample Mentoring Contract
F2-R21	An Ethical Code of Practice for Mentoring
F2-R22	No-Fault Exit Process
F2-R23	Sample Mentor Training Agenda
F2-R24	Sample Mentor Training Schedule

F2-R25 Sample of Summer Required Courses for Novice Teachers
F2-R26 Common Mentoring Activities
F2-R27 Sample Standards-Based Action Plan
F2-R28 Sample Action Plan
F2-R29 Sample District Professional Development Action Plan for Mentoring
F2-R30 Five Levels of Professional Development Evaluation
F2-R31 Visual Graphic for Timeline of District Mentoring Plan Development and Approval Process

State of New Jersey
DEPARTMENT OF EDUCATION
PO BOX 500
TRENTON, NJ 08625-0500

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

BRET SCHUNDLER
Commissioner

May 17, 2010

To: Chief School Administrators
Charter School Lead Persons

From: Bret Schundler
Commissioner

SUBJECT: Network Turnaround Officer Recruitment

The New Jersey Department of Education (NJDOE) is seeking highly skilled professionals to serve as school Network Turnaround Officers (NTO) as part of its School Improvement Grant (SIG) program. The NTO, assigned to one or more schools, will provide support and oversight. Periodic reporting to the NJDOE will occur and input from the NTO will be used during the decision making process regarding the school's annual renewal of the SIG grant. The NTO contract period with the NJDOE is for up to one year depending upon the individual circumstances of each school. The NTO will be paid by the NJDOE using federal SIG administrative funds.

The NTO will play a critical role in turning around struggling schools. As a facilitator of reform, the NTO will be responsible for initiating improvements in classroom instruction by helping to incorporate research-based practices to identify solutions to problems with student learning. In collaboration with the school principal, the NTO will set a clear pathway toward distributed leadership within the schools, working with a highly capable team to build a cohesive, professional teaching culture. The NTO will also help the principal develop turnaround management skills. As an evaluator, the NTO will monitor the schools' adherence to the intervention plan and tracking performance metrics, including academic achievement, against quantifiable plan objectives and assist the NJDOE in evaluating implementation. The NTO will participate in the Leadership Academy along with the district and school staff.

The NJDOE is conducting a selection process to find candidates who are outstanding and highly skilled school leaders. The state will create LEA networks comprised of three to five schools, taking into account geographic factors, each school's root causes of low performance, and school and district context. The LEA superintendents will participate in the NTO selection. In some cases all the schools will be located in one district while in others, the NTO will serve schools in multiple districts and will be responsible for coordinating operations across the LEAs in which the schools reside.

School Improvement Grants (SIG), authorized under section 1003(g) of Title I of the Elementary and Secondary Education Act of 1965 (Title I of ESEA), are issued through state educational agencies (SEAs) to local educational agencies (LEAs) for use in Title I schools identified for improvement that demonstrate the greatest need for the funds and the strongest commitment to use the funds to provide adequate resources to raise substantially the achievement of their students so as to enable the schools to make adequate yearly progress and exit improvement status. Under the final requirements, as amended through the interim final requirements published in the Federal Register in January 2010 (final requirements, available at http://www.ed.gov/programs/sif/index.html), school improvement funds are to be focused on each state's "Tier I" and "Tier II" schools.

Tier I schools are a state's persistently lowest-achieving Title I schools in improvement. Tier II schools are a state's persistently lowest-achieving secondary schools (grades 9-12) that are Title I served and Title I eligible for, but do not receive, Title I, Part A funds. In each of the Tier I and Tier II schools an LEA chooses to serve, the LEA must implement one of four federal school intervention models: turnaround model, restart model, school closure, or transformation model.

The NJDOE also encourages currently employed school leaders who have outstanding accomplishments in the area of school improvement to apply. In this instance, a loan agreement with the district will be sought. Attached is a description of NTO roles and responsibilities. If you need additional information, contact the program manager, Dr. Patricia A. Mitchell, at (973) 727-6063 or by email at pat.mitchell@doe.state.nj.us

It is my sincerest wish that you will take this opportunity to participate in this effort to promote practices that are effective in advancing student achievement. We are looking forward to working together to support New Jersey's struggling schools.

BS\PM\s:\sig 2010 school improvement grant\network turnaround officer\nto recruitment package.doc
Attachments
c: Members, State Board of Education
Willa Spicer
Senior Staff
Diane Shoener
Suzanne Ochse
Elaine Davis
Patricia A. Mitchell
Executive County Superintendents
Lee Group
Garden State Coalition of Schools

Network Turnaround Officer Application Process
New Jersey Department of Education
School Improvement Grant (SIG) Program

Who will be selected?
Administrators and classroom teachers who are recognized as leaders, have shown high levels of professional competence, and who represent New Jersey's diverse workforce.

What are the eligibility criteria?
Applicants shall have:
--> Administrator and/or teacher certification
-->Minimum of 5 years experience as an educator
--> Experience as an educator/administrator within the last 3 years
--> Knowledge of current educational practice in New Jersey
--> Working knowledge of the Interstate Standards for School Leaders Consortium (ISSLC) and New Jersey Core Curriculum Content Standards
--> Ability to work and communicate effectively with all school staff
--> Personal integrity and high ethical standards
--> Good judgment
--> Ability to solve problems
--> Ability to provide leadership
--> Commitment to accept up to a one year assignment
--> Readiness to model lessons in classrooms
--> Willingness to travel

What is the selection process?
All applicants who (1) meet the eligibility criteria and (2) submit the following documents by June 14, 2010, will be included in the selection process.
(a) Application
(b) Resume
(c) Four confidential references

The selection process for the 2010-11 school year is underway with the posting of this notice and the application forms. This current selection process will conclude by the end of June 2010.

Selection Process

The application process consists of the following additional steps:

1. Reference Checks:
NJDOE personnel conduct in-depth reference checks for the applicants who successfully complete the performance evaluation. Background checks by the New Jersey State Police Agency are also completed.

2. Interview:
NJDOE personnel conduct an interview with each prospective candidate.

Network Turnaround Officers Training

Once applicants are selected, they are required to participate in three weeks of training during the months of July and August. The specialized training assures that these educators have the skills and resources necessary to deliver exceptional service to schools under a variety of diverse and unique circumstances. Additionally, network meetings continue throughout the school year.

Schools Receiving Assistance and NTO Assignment

Network Turnaround Officers provide assistance to one or more assigned schools receiving a SIG grant. NTO educational and professional experiences are matched with the needs of the schools in need of assistance. Geographical information is also a consideration when making placement decisions.

NTO Employment and Compensation for Employee Loan

NTOs remain employees of their home district. The New Jersey Department of Education signs a Memorandum of Agreement (MOA) with the NTOs' home district on an annual basis.
NTOs continue to receive their salary, with no loss of benefits, through their home school districts.

NTO Employment and Compensation for Individuals

Salary for individuals who are not on loan from a school district will be negotiated and paid by the NJDOE.

Evaluation of Network Turnaround Officers

Evaluations are used to assess the work of the NTOs on a continuing basis using the following:

a. NTO monthly reports
b. NTO mentor visits
c. NTO participation in trainings and the Leadership Academy
d. Development and presentation of NTO training tools, resources and documents
e. Anecdotal information shared by NTOs
f. Feedback from assigned district and schools
g. NTO end of the year and/or exit reports
h. SIG reports for assisted schools
i. External Evaluation

SIG External Evaluation

On an annual basis, the NJDOE will conduct an external implementation audit of curriculum, academic growth, school climate, teacher evaluations, and accompanying targeted professional development. The report will address all areas of the model implementation and explicitly report on progress against the quantifiable benchmarks of the intervention plan. These annual audits of each persistently low-performing school will include constructive feedback and recommendations for program improvements, as appropriate.

In the absence of sufficient progress or lack of implementation fidelity, the audit may include a recommendation for school closure or restart. The results of this audit will be reported publicly and will serve as part of the evaluation of the NTO who is assigned to the school. These audits will be submitted to the LEA superintendent for review. A face-to-face meeting will occur with the NJDOE and each LEA superintendent to discuss the results and determine if refinement of the SIG plan for each of the served schools is necessary. The results will assist the NJDOE in annual SIG renewal decisions.

The critical external evaluations relative to the NTO are as follows:

Curriculum and Instruction

a. Improvement in teaching
b. Improvement in teacher knowledge of effective teaching
c. Improved curriculum and instructional coordination in the school
d. Increasing attention to state test and formative assessment data

Professional Development

a. Professional development is focused on curriculum and instruction and the critical needs of the school

Leadership, School Organization

a. Strong school leadership
b. Improved morale and a shared school-wide focus and a culture of collaboration that had not previously existed

Test Scores

Overall, SIG schools should achieve significant growth on state and quarterly formative assessments.

Application

NJDOE Network Turnaround Officers Program

Deadline for Submission: June 14, 2010

Personal Information:

Mr. ____ Mrs. ____ Ms. ____ Dr. _____	Name (First, Middle, Last)
Home Address: Street: City, State, Zip:	
Home Phone (include area code):	Cell Phone (include area code):
Date of Birth:	Social Security Number:
Home E-mail Address (other than work):	

Present/Past Employment:

School District/Agency:	School Name/Worksite:	
Work E-mail Address:	Work Phone:	Position Title:
District Experience:	Years of teaching experience in New Jersey: Total years in education:	
Are you currently teaching; if yes, what grade(s): Content areas you teach (or have taught):	If not currently teaching: what year _____and grade(s) did you teach in last:_____	

READ AND SIGN THE FOLLOWING STATEMENT:

By applying for the New Jersey Network Turnaround Officers Program, I am participating in a selection process and may not be provided with feedback for personal growth and/or professional development needs. Further, I will respect the integrity and fairness of the process and those associated with it. In the event that I am selected and accept the position of Network Turnaround Officer, I agree to perform the duties as outlined.

Signature of Candidate_____ Date_____

Deadline for Submission: June 14, 2010

The following items must be completed and electronically returned to the NJDOE by June 14, 2010, in order for your application to be processed. Return this application to: Dr. Patricia A. Mitchell at pat.mitchell@doe.state.nj.us.

1. Return a resume citing work history including dates, professional experiences and leadership roles with dates and employers, which support your involvement in this program.

2. Include four (4) professional references regarding your qualifications for designation as a Network Turnaround Officer. Copy the Confidential References Questionnaire accompanying this application and distribute to your four choices. Please read and note all directions and deadlines. It is your responsibility to ensure your four references have been submitted to NJDOE. Without receipt of all four by June 14, 2010, your application will not be complete and considered.

Your references (item 2) may be emailed by the person completing the form to: pat.mitchell@doe.state.nj.us as well as any questions you have concerning the program and receipt of your application information.

Confidential Reference Questionnaire

Please use this form to submit your reference for the applicant for New Jersey's Network Turnaround Officer Program. References not submitted on this form or a copy of this form will not be accepted. These are confidential and are not shared with the applicant. Please note: The reference consists of two pages: complete both pages and return. This reference should be submitted as soon as possible. References not received by June 14, 2010 will not be accepted. They are to be emailed to:

Dr. Patricia A. Mitchell, Manager
E-mail: **pat.mitchell@doe.state.nj.us**

Name of Applicant:	
Name of Person Completing Form:	
Title/Position:	
Work Address: (school/district name and address)	
Work Phone:	

Relationship to applicant (check appropriate category):					
Supervisor		Colleague		Other (list)	
How long have you known the applicant:					
Professionally:		Personally:			

What interpersonal skills have you observed in the applicant that will successfully help others to improve?

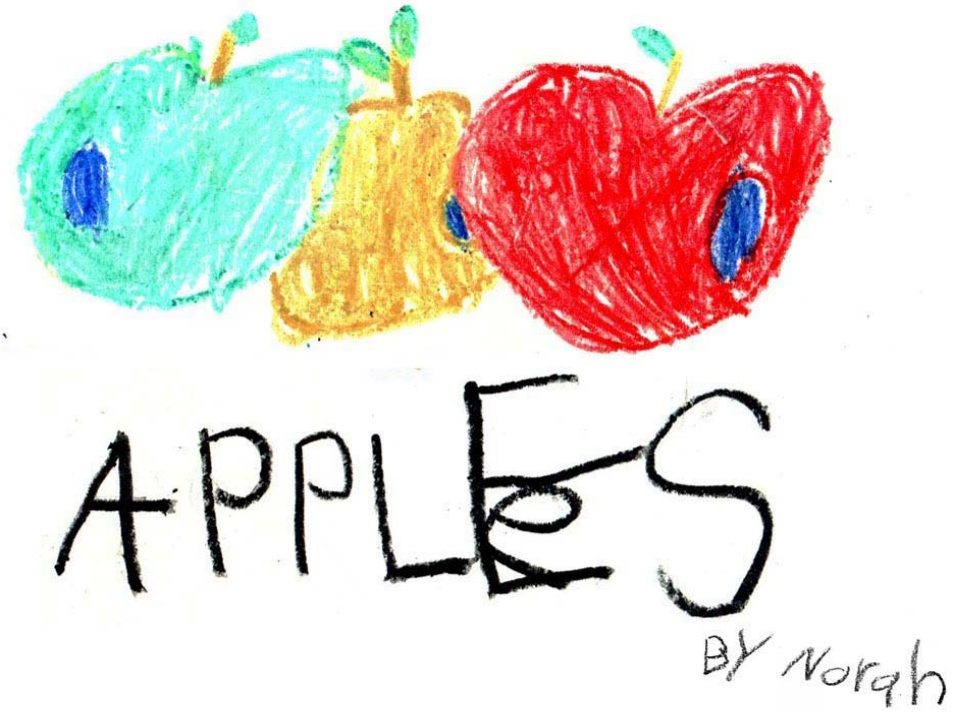
What are this applicant's greatest assets as an educational leader and supporter of change? Please include specific examples.

NTO SKILL DIMENSION

Please rate the candidate in the following areas by checking the appropriate column:

4 = Outstanding | 3 = Well Developed | 2 = Developing | 1 = Needs to Develop

SKILL/DIMENSION	1 Lowest	2	3	4 Highest
1. Professional Attitude/Judgment				
2. Leadership Skills				
3. Organizational Skills				
4. Written Communication Skills				
5. Motivational Skills				
6. Sensitivity to Others				
7. Time Management Skills				
8. Oral Communication Skills				
9. Stress Management Skills				
10. Program Planning and Evaluation Skills				
11. Conflict Resolution Skills				
12. Skill in Working with Diverse Groups				
13. Skill in Analyzing and Interpreting Assessment and Other Data				
14. Skill in Working with Parents/Community				
15. Interpersonal Skills				
16. Facilitation Skills				
17. Presentation Skills				
18. Work Ethic				
19. Awareness of Standards & Indicators for School Improvement (school and/or district version)				
20. Knowledge of Current Educational Practice in New Jersey				



The APPLES Blossom:
Abbott Preschool Program Longitudinal Effects Study (APPLES)
Preliminary Results through 2nd Grade

Interim Report
June, 2009

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The research reported in this document was conducted under a Memorandum of Agreement with the New Jersey Department of Education (NJ DOE) and with partial funding from The Pew Charitable Trusts. The conclusions are those of the authors and do not necessarily represent the views of the funding agencies.

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The authors wish to acknowledge the support and assistance of Dr. Ellen Wolock and Dr. Jacqueline Jones of the Division of Early Childhood Education, NJ DOE for comments on an earlier draft. In addition, we thank the children, parents, teachers, supervisors and administrators in New Jersey's Abbott districts who have graciously assisted us in this critical data collection and analysis. Without their assistance the research could not have been conducted.

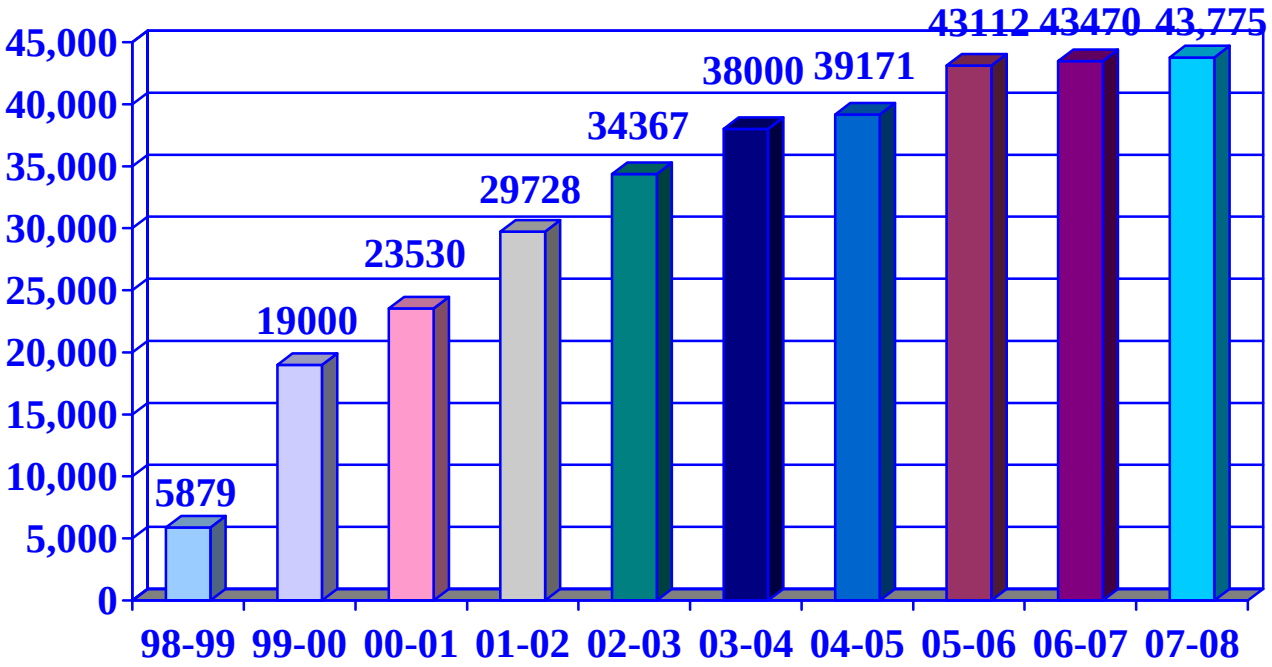
Introduction

This study investigates the persistence of educational effects of state funded prekindergarten education for children at ages three and four in New Jersey's Abbott districts through second grade. The program providing that education was developed in response to the landmark New Jersey Supreme Court school-funding case, *Abbott v. Burke*. In the 1999-2000 school year, 3- and 4- year old children in the highest poverty districts in the state began to enroll in a new high-quality preschool education program. This program has been designed to prepare them to enter school with the knowledge and skills necessary to meet the New Jersey Preschool Teaching and Learning Expectations: Standards of Quality (NJ Department of Education, 2004b) and the Kindergarten New Jersey Core Curriculum Content Standards (NJDOE, 2004a). Through a Department of Education (DOE) and Department of Human Services (DHS) partnership, Abbott preschool classrooms combine a DOE-funded six-hour, 180-day component with a DHS-funded wrap-around program that provides daily before- and after-care and summer programs. In total, the full-day, full-year program is available up to 10 hours per day, 245 days a year.

Enrollment in the Abbott preschool program has increased dramatically since its inception in 1999. During the 2008-2009 school year, the tenth year of Abbott preschool implementation, the 31 Abbott districts served over 43,000 3- and 4-year-old children in preschool – about 80 percent of the population. The preschool program is delivered by a mixed public-private delivery system overseen by the public schools. Private child care providers and Head Start agencies contract with local boards of education to serve about

two-thirds of the children. The rest are served in public school classrooms. The increase in enrollment over time is shown in Figure 1 below.

Figure 1: Abbott Preschool Enrollment 98-99 to 07-08



The Court established basic program standards for preschool education in the Abbott districts that included a maximum class size of 15, certified teachers with early childhood expertise, assistant teachers in every classroom, comprehensive services and a developmentally appropriate curriculum designed to meet learning standards. Some of these standards could be implemented quite quickly. Others like the requirement for teacher certification took time. Over the first five years, everyone from the classroom level on up worked hard to fully implement these standards and to bring classroom practices up to the level of effectiveness that these standards are designed to support. Such standards facilitate highly effect preschool education, but do not by themselves guarantee it. To ensure high quality and consistency for children across auspice and

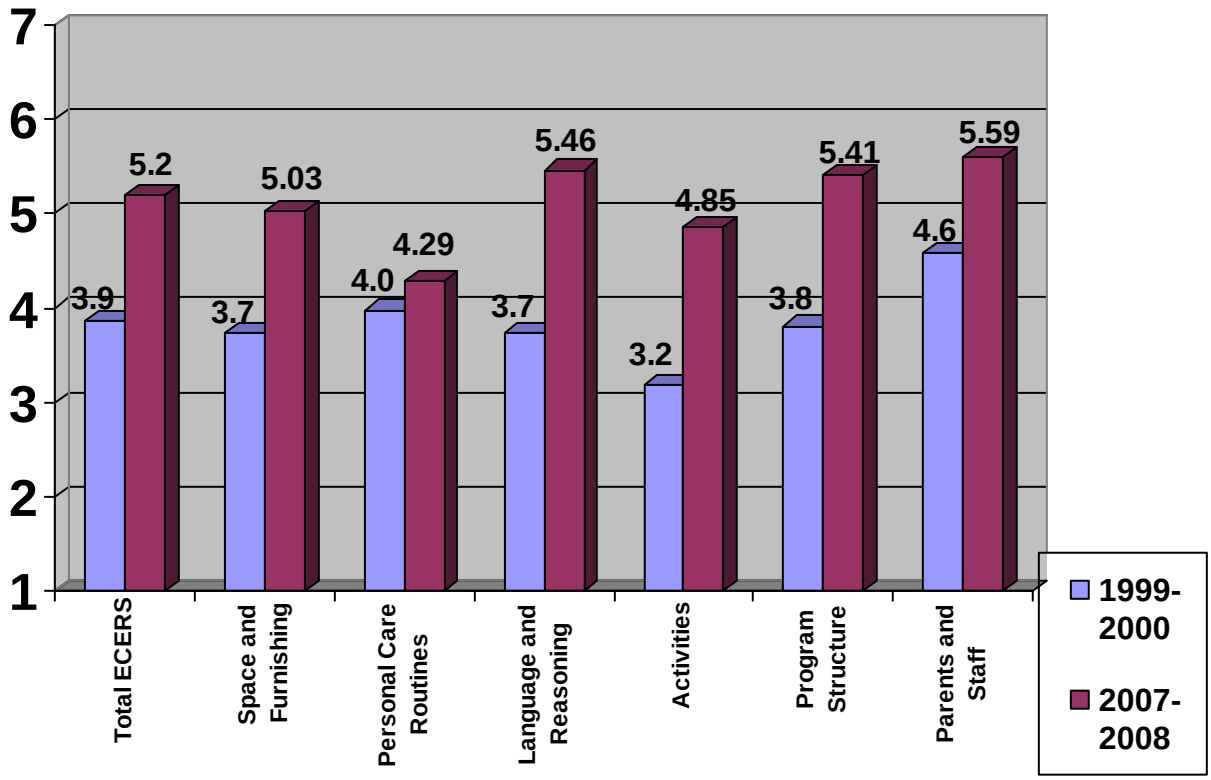
district and to assist administrators and staff who may have been inadequately prepared in early childhood education, more detailed operational standards were developed (Abbott Preschool Program Implementation Guidelines; Office of Early Childhood Education, NJDOE, 2002, revised 2005). These standards were also designed to ensure that the particular needs of children in each community were addressed. The Abbott preschool program is not designed to be simply a "cookie cutter" approach that is identical in every community.

Observation data on preschool classroom quality have been systematically collected in the Abbott districts since the 1999-2000 school year. Results have been reported periodically since (Barnett, Tarr, Lamy, & Frede, 2002; Frede et al, 2004; Lamy et al, 2005). Classroom quality rose steadily each year and, by the 2004-2005 school year, classroom quality scores had reached acceptable levels, and children were entering kindergarten with language and literacy skills closer to the national average than in prior years (Frede, et al, 2004; Lamy, et al, 2005). Therefore, this evaluation was launched to more precisely estimate the learning gains from the Abbott prekindergarten program including the extent to which gains persist into elementary school.

Classroom quality has continued to improve in the Abbott districts since 2004-05 due to local and state efforts. Figure 2 reports quality scores from the first year together with scores from 2007-08 on one indicator, the ECERS-R. The ECERS-R is the most widely used observational measure of preschool program practice and it correlates highly with other measures that are commonly used (for more information on the ECERS-R and other measured used to assess quality of the Abbott preschools see Frede et al., 2007). In 2007-08, the average Abbott classroom scored better than "good" (a score of 5) and most

programs were in the good to excellent range (5 to 7). This is a dramatic change from 1999-2000, when few classrooms reached "good." Increases have been particularly large for the two parts of the scale most closely related to children's learning and development—Language and Reasoning, and Activities. One implication of the continuing change is that Abbott preschool programs are likely to have stronger impacts on learning and school success for children attending today than they did for the children in this study.

Figure 2: Classroom Quality Scores 1999-2000 vs. 2007-2008



This is the second report on this study of the 2004-05 cohort of Abbott preschool attendees. A previous report discussed the effects of the Abbott pre-K program at the beginning and end of kindergarten (Frede, et. al., 2007). These results are only briefly

reviewed here to provide context for findings of the present report. For detailed information on the methodology and findings the reader should consult the earlier report.

Previous Results

In the fall of 2005, we implemented a two-step research process to estimate the long-term effects of attendance in an Abbott preschool classroom. The first step was to implement a Regression Discontinuity Design (RDD) to estimate the effects of the program on children's abilities at kindergarten entry (Trochim, 1984). This approach relies on the fact that eligibility for Abbott pre-K within a designated school district is determined by date of birth alone. This assignment rule allows us to construct two groups, one entering kindergarten that has already attended the program at age 4 and one entering preschool that has not yet attended at age 4. These groups are unlikely to differ with respect to measured or unmeasured child and family characteristics so that the RDD minimizes the potential effects of selection bias which occurs when the effects of differences between the two groups of children are confounded with program effects (Cook, 2008).

The RDD approach can be viewed as similar to a randomized trial for children near the age cutoff. The RDD creates groups that *at the margin* differ only in that some were born a few days before the age cutoff and others a few days after the cutoff. When these children are about to turn 5 years old the slightly younger children will enter the preschool program and the slightly older children will enter kindergarten having already attended the preschool program. By testing all of the children at that time, we obtain an unbiased estimate of the preschool program's effect under reasonable assumptions. Of course, it is quite limiting to analyze data only for children with birthdays only a few

days on either side of the age cutoff. Alternatively, the RDD can be viewed as modeling the relationship between an assignment variable (age) and measures of children's learning and development. The pre-cutoff sample is used to model the relationship prior to treatment. The post-cutoff sample is used to model the relationship after the treatment. This approach can be applied to wider age ranges around the cutoff. However, its validity depends on correctly modeling the relationship.

Unfortunately, the RDD approach cannot provide an estimate of effects beyond kindergarten entry. We employed a second design to obtain estimates beyond kindergarten entry—comparing children who attended pre-K to a conventional no-treatment comparison group identified at kindergarten entry. We then assessed the accuracy of estimates obtained from this second approach at kindergarten entry by comparing them to the RDD estimates. If the initial estimates from both analyses are similar, then we can have confidence in the longitudinal results. To the extent that they differ, we have an indication of the likely direction and magnitude of bias in the longitudinal estimates.

For the second design we drew an additional comparison sample of kindergarten children who did not attend the Abbott preschool program. We obtained a sample at kindergarten entry of 1,038 children in 15 districts. Of these, 284 did not attend the Abbott pre-K program, 451 attended for 1 year, and 303 attended for two years. As some children attended Abbott preschool for one year at age 4 and others attended preschool for two years at ages 3 and 4, we are able to separately estimate the effects of one year and two years of preschool attendance using this second design. The study has limited ability to adjust for any incidental differences between the groups or to assess their

comparability (except by way of the RDD). However, this is less of a problem than it might be because the communities in our study are fairly homogeneous; all are larger, low-income urban school districts in a single state. In addition, we have ensured that the treatment and comparison samples are balanced with respect to district, and we control for district in the analyses.

As reported previously we find positive effects on children's learning in the areas of oral language, early literacy, and mathematics at kindergarten entry. The standardized effects (i.e., converted to standard deviation units) of one year at age four using the RDD were 0.28 for the language, 0.56 for print awareness, and 0.36 for math. The estimated effects for one year of preschool based on the conventional comparison group in the longitudinal study were 0.21 for language, 0.29 for print awareness, and 0.20 for math. A reasonable conclusion is that with the design used for the longitudinal study results in a significant underestimation of the program effects because the longitudinal study design does not fully control for differences between those who do and do not attend pre-K. Therefore, we expect that the longitudinal study also will underestimate the true effects going forward through kindergarten, first, and second grade, as well.

We find that effects are larger for two years of participation than for one, and that effects persisted through the end of kindergarten. The standardized effect sizes for two years of participation were 0.42 for language, 0.31 for print awareness, and 0.34 for math. That is, two years had larger effects for language and math, but not for print awareness. When estimates were repeated for children at the end of kindergarten, the effect sizes were virtually the same as at the beginning of kindergarten for language, suggesting that advantage was fully maintained. Math effects appeared to be slightly smaller than earlier.

The print awareness measure was no longer useful at the end of kindergarten as most children have mastered the relevant knowledge and skills. It appears that these are readily taught and mastered, which explains why two years seems to give little additional benefit, as well.

Sample for Follow-up through Second Grade

Subsequent follow-ups of the sample have been conducted in the Spring of 2007 and 2008. Children would have been in first and second grade, respectively, if they were had not been retained in grade at any point. Children were followed up and assessed regardless of their actual grade level, and the 2007 data are referred to as "first grade" and the 2008 data as "second grade" even though some of the children in each year's data are actually behind a grade level. In addition, we have collected demographic data on the sample that was not previously available so that we now have information on age, gender, ethnicity, and lunch status. Sample characteristics at second grade are reported in Table 1.

Table 1
Second Grade Sample Demographics

	N	Girl %	Age *M* *(Std)*	Black %	Hispanic %	White/ Asian %	Free Lunch %	Reduced-Priced Lunch %	Full-Priced Lunch %	Missing Lunch Info %	Spanish Home Language %
No Pre-K	150	44	8.12 (0.34)	36	56.7	6.7	67.3	9.3	6.7	16.7	19.6
1 Year of Pre-K	306	52.3	8.07 (0.32)	38.2	53.6	7.2	69.3	8.8	9.8	12.1	21.5
2 Year of Pre-K	207	51.2	8.06 (0.33)	34.8	61.8	2.9	64.7	12.1	5.3	17.9	19.6

One of the challenges in every longitudinal study is locating the children who originally entered the study. This becomes more difficult the longer the study continues.

Children move outside their original districts or even out of the state, change their names or how they report their names to the schools, and may decline to participate at a later time. Loss of participants over time, or attrition, has two negative consequences. One is a decrease in sample size, which reduces statistical power. The other is that attrition may be nonrandom affecting the generalizability of the findings and potentially decreasing the comparability of the treatment (Abbott Preschool) and comparison groups.

So far attrition has been moderate. In the original analyses at kindergarten entry the number of children with valid test scores varied between 1,038 and 1,054 depending on the measure. In 2009, we will follow-up by using data from the statewide assessment in Grade 3, which may allow us to identify more children than in the previous year. However, the Grade 3 assessment does not include children who were retained in grade, which creates its own problem of non-random attrition. To address the problem we plan to identify children who were behind in grade level (many have already been identified) and we hope to administer the third grade test to them individually.

In order to assess the extent to which attrition is or is not random we have conducted analyses on the initial test scores of the children at kindergarten entry. These analyses investigate whether test scores differ between the initial sample and follow-up sample and whether differences from the initial to follow-up sample vary by the number of years of Abbott Pre-K. The results show no significant differences between the initial sample and the existing sample at 1st or 2nd grade.

Measures Collected at First and Second Grade

Data collectors trained by NIEER assessed each child individually in the Spring of 2007 and 2008. Measures administered at this time provide continuity with earlier

measures but accommodate the children's developing abilities. The battery of child assessments took an average of approximately 25 minutes per child and was administered in the child's school, in a room or quiet area appropriate for assessment.

Receptive Vocabulary. Children's receptive vocabulary has been measured every year since kindergarten entry using the Peabody Picture Vocabulary Test, 3rd Edition (PPVT-III; Dunn & Dunn, 1997) and, for Spanish-speakers, the *Test de Vocabulario en Imagenes Peabody* (TVIP; Dunn, Padilla, Lugo, & Dunn, 1986). The PPVT is predictive of general cognitive abilities and is a direct measure of vocabulary size. The rank order of item difficulties is highly correlated with the frequency with which words are used in spoken and written language. The test is adaptive (to avoid floor and ceiling problems), establishing a floor below which the child is assumed to know all the answers and a ceiling above which the child is assumed to know none of the answers. Reliability is good as judged by either split-half reliabilities or test-retest reliabilities. The TVIP is appropriate for measuring growth in Spanish vocabulary for bilingual students and for monolingual Spanish speakers.

All children in our sample were administered the PPVT, regardless of home language, to get some sense of their receptive vocabulary ability in English. In kindergarten all children who spoke some Spanish were also subsequently administered the TVIP. The testing session was then continued, with the additional measures administered in either English or Spanish, depending upon what the child's teacher designated as his or her best testing language. In this follow-up, we have discontinued Spanish-language testing as English is the language of instruction for all children and by

the end of kindergarten we found few children for whom Spanish was a stronger language than English.

Mathematical Skills. Children's early mathematical skills have been measured each year with the Woodcock-Johnson Tests of Achievement, 3rd Edition (Woodcock, McGrew, & Mather, 2001) Subtest 10 Applied Problems. For Spanish-speakers the *Bateria Woodcock-Munoz Pruebas de Aprovechamiento – Revisado* (Woodcock & Munoz, 1990) *Prueba 25 Problemas Aplicados* was used in kindergarten. Subtests of the Woodcock-Johnson are reported to have good reliability. In this follow-up, we added two more Woodcock-Johnson subtests to the assessment battery for first and second grade: Subtest 5 Calculation and Subtest 6 Math Fluency. Subtests 5, 6, and 10 together comprise the Broad Math Battery of the Woodcock-Johnson.

Literacy Skills. The literacy measures used in this study have been changed the most over time. Initially, we measured print awareness in kindergarten using a subtest of the Preschool Comprehensive Test of Phonological and Print Processing (Pre-CTOPPP; Lonigan, Wagner, Torgeson, & Rashotte, 2002). However, the Pre-CTOPPP is not appropriate for older children. Instead, in the first and second grade follow-up we used subtests from the WJ-III (Woodcock et al., 2001) to measure early literacy skills. In the first grade, Woodcock-Johnson Subtests for Letter-Word Identification, Word Attack, and Sound Awareness (Rhyming, Deletion, and Substitution) were used. Subtests Letter-Word Identification and Word Attack subtests comprise the Basic Reading Battery of the Woodcock-Johnson. In the second grade, Woodcock-Johnson Subtests for Letter-Word Identification, Reading Fluency and Passage Comprehension were used. Together these provide a measure of Broad Reading. These literacy sections of the WJ-III are widely

used in research and are reported to have good psychometric properties. As with the other measures, all children were assessed in English for this follow-up.

Follow-Up Analyses and Initial Findings: First and Second Grade

The effects of Abbott preschool program participation on children's test scores at the end of first and second grade were estimated using regression analysis. Effects on grade repetition by entry to second grade were estimated using logit and probit analyses as appropriate for a binary dependent variable. These analyses were conducted on the longitudinal sample with independent variables for student ethnicity, free or reduced lunch status, gender, age, and school district, as well as dummy variables indicating one or two years attendance in an Abbott preschool program. Analyses were conducted on raw scores. The Stata program was employed, and intra-cluster correlation is taken into account through the estimation of cluster-robust standard errors. All of the first and second grade analyses were conducted with no replacement of missing data, as all procedures for replacing missing data create problems of their own. However, in a future report we will present the results of analyses using multiple imputation procedures to replace data. The estimated effect sizes (i.e., standardized in standard deviation units for comparison purposes) at kindergarten entry and the end of kindergarten are reported below in the text and in tables that report scores for each group: no preschool, one year of preschool at age 4, and two years of preschool at ages 3 and 4.

Receptive Vocabulary. Oral language (as measured by the PPVT) forms not only the basis of social communication, but reveals conceptual knowledge and is essential for both reading and writing acquisition. At the end of kindergarten, one year of the Abbott preschool program had an effect size of 0.18 ($p<.05$) and the two year effect size was

0.38 ($p<.01$). At the end of second grade the benefits of Abbott participation continued to be significant with results of 0.22 ($p<.05$) for one year of attendance and 0.40 ($p<.01$) for two years. Keeping in mind that comparison with the regression discontinuity results at kindergarten entry indicated that the longitudinal study underestimates program effects, these results are quite strong. As was true earlier, the estimated effects of two years of participation are twice the size of those for one year of Abbott Pre-K. Table 2 displays these results together with earlier results for comparison. These results suggest that there has been no decline in the program's effects in this domain since kindergarten entry. Standard scores indicate that children are still somewhat below the national average in this domain, despite the substantial gain from two years of Abbott pre-K.

Mathematics. All of the estimated effects in mathematics favored the Abbott preschool attendees with two years having more impact than one. Math measures included Applied Problems, Calculation, Math Fluency and Broad Math. The most consistently observed difference was that Applied Problems scores were higher in first grade—effect sizes of 0.18 ($p<.05$) for one year and 0.26 ($p<.05$) for two years—and in second grade—effect sizes of 0.24 ($p<.05$) for one year and 0.44 ($p<.01$) for two years. Estimated effects on Calculation at the end of second grade were small, but were statistically significant ($p<.05$) in a one-tailed test for two years of Pre-K. Estimated effects were small for Broad Math, but effects on standard scores were statistically significant in one-tailed tests for one year and two years of Pre-K.

Estimated effects on Applied Problems from kindergarten entry through 2nd grade are reported in Table 2. Although there is some variation in these over time, they suggest little or no reduction in effects from kindergarten entry through the end of second grade,

and the effects are large enough to be meaningful. Two years of very consistently has a much larger effect than one year of Abbott Pre-K participation, though not always double. Comparison to the RDD results indicates that we substantially underestimate effects on mathematics achievement, perhaps by so much that the true effects at the end of second grade were about .40 for one year and .80 for two years. Standard scores indicate that even children in the follow-up sample who did not attend Pre-K score at about the national average in mathematics, even though behind those who attended the program.

Reading. The instruments used to assess first grade literacy skills were letter-word identification, word attack, sound awareness, and basic reading. Second grade literacy skills were measured by letter-word identification, reading fluency, passage comprehension and broad reading. Although differences in these literacy outcomes tended to favor children who had attended Abbott prekindergarten programs, they generally were small and statistically significant. Program effects are most apparent on Passage Comprehension on which the former pre-K attendees scored higher with effect sizes equal to 0.16 for one year and 0.20 for two years—both effects are statistically significant at the .05 level using a one-tailed test. These can be seen in Table 2. Standard scores indicate that children in the follow-up sample scored near the national average on Broad Reading by the end of second grade regardless of pre-K attendance.

We note that literacy is the domain where the initial comparison of results from the RDD and longitudinal designs indicated the most serious problem. The RDD result for one year of Abbott Pre-K at kindergarten entry was nearly double (90 percent larger) the result produced using the conventional comparison group. Therefore, literacy is the

domain in which the study faces the greatest challenge detecting long-term effects and for which the results must be interpreted most cautiously. This may explain the lack significant effects on Broad Reading at the end of second grade.

Table 2

Effect Sizes

		Longitudinal			
	RDD	K Entry	K End	1st	2nd
PPVT					
Year 1	.28	.21	.22	.18	.22
Year 2		.42	.41	.38	.40
WJ Applied Problems					
Year 1	.36	.20	.13	.18	.24
Year 2		.34	.29	.26	.44
Literacy					
Year 1	.56 [a]	.29 [a]	0 [a]		.16 [b]
Year 2		.31 [a]	.14 [a]		.20 [b]

Note. [a] Kindergarten literacy was measured using the Pre-CTOPP.
[b] Second grade literacy was measured by WJ subtest Passage Comprehension

Grade Retention. Now that the study children have reached second grade we are able to investigate the effects of preschool attendance on grade retention in kindergarten and first grade. Our measure should be considered an assessment of retention by entry to second grade, as it is possible that a few children were retained shortly after entering second grade. Nevertheless, it is a measure of children who repeated either kindergarten or first grade. We find that the Abbott Pre-K program

significantly reduced retention in first grade and kindergarten. Grade retention was 10.7% (16) for children who did not attend pre-K, 7.2% (22) for those who attended for one year, and 5.3% (11) for those who attended two years. The effect on grade retention of two years of Abbott pre-K is statistically significant ($p<.05$) and twice as large as the effect of one year of Abbott pre-K.

Discussion

Considerable resources have been invested in the Abbott Preschool Program. It has high program standards compared to many other state-funded pre-K programs and the federal Head Start program (Barnett, Epstein, Friedman, Boyd, & Hustedt, 2008). It also has a relatively high per pupil cost, which reflects those high standards as well as New Jersey's high cost of living. The program operates for a full school day, employs licensed teachers paid on the same scale as public school teachers, has a maximum class size of 15 with an assistant teacher assigned to each classroom, provides in-class supports to classroom staff on curriculum and differentiating instruction and has dedicated staff to work with parents and the community (Frede, 2005).

The effectiveness of any preschool program depends on how well it is implemented, but quality of implementation is not always measured in program evaluations. It is noteworthy that the Abbott pre-K program has been a work in progress. At the time the children in this follow-up study attended the program, quality was better than that in many other programs but not what it is today. The program has improved a half point over all on the 7 point scale, from fair to good on average to good to excellent on average since the children in this study attended Abbott Pre-K. When interpreting the results of this report it should be acknowledged that, even if perfectly estimated, the

program's effects reported here are smaller than we would expect for subsequent cohorts of children in the Abbott districts.

Earlier studies found that the Abbott Preschool Program has beneficial effects on children's learning in the domains of language, literacy and math abilities skills at kindergarten entry and exit (Frede et al., 2004; Lamy et al., 2005; Wong, Cook, Barnett, & Jung, 2008**).** We find positive effects on children's learning in those same domains through the end of second grade. This studies' effect sizes are reasonably large compared to the estimated effects in other studies and are about the same size as reported by the Chicago Child Parent Center study at the end of second grade (Reynolds et al.; 2007). The estimated effects on grade retention are consistent the results other studies, taking into consideration that only kindergarten and first grade are involved so far. However, there are two discrepancies with other studies in the details.

Other studies of preschool programs for three- and four-year-olds have not tended to find the same degree of persistence in PPVT scores. Our results, particularly those for two years of Abbott Pre-K, are more similar to the results of the Abecedarian (Campbell et al., 2002) and IHDP (McCarten, et al., 1997) studies where intervention began earlier and was provided in full-day, year-round programs. Perhaps the intensity of the Abbott program, which is offered for a full school day, and the provision of wrap-around child care full-day, year-round contribute to the larger and more persistent effect on the PPVT which measures language and conceptual knowledge (see also, Robin, Frede, & Barnett, 2006). The Abbott program also differs from many others in that it provides services to all children in a community, raising the possibility of peer effects and that large scale

changes in the overall performance of classrooms in years after preschool may affect the long-term results.

Other studies have found larger effects on literacy skills, though not always in the first several years of primary school. For example, the effects of the Perry Preschool program on reading achievement were not fully evident until middle school (though keep in mind that study had a small sample; Schweinhart and Weikart, 1980). One complicating factor is the intensive focus of Abbott schools on literacy in the early grades (MacInnes, 2009). Possibly this focus has enabled the children who did not attend preschool to catch up to their peers who did attend pre-K in basic literacy skills. We do not know how much extra attention children who were falling behind may have received as a result of these efforts. It remains to be seen whether the persistent language advantage from preschool participation will become more evident in reading comprehension in Grade Three where it is more thoroughly assessed than in second grade. Children's early print awareness and receptive vocabulary skills have been found to predict later reading abilities in the early elementary grades (Snow, Burns, & Griffin, 1998). However, it should be noted that relative to national norms children in the study are performing better on the reading measures than on the oral language (and conceptual knowledge) measure at second grade.

Relatively little research compares the effects of one year versus two years of preschool attendance. Some studies find little difference, while others have found substantial gains from starting earlier (Barnett, 2008). From kindergarten through second grade, children who attended the Abbott Preschool Program for two years at ages 3 and 4 out-performed children who attended for only one year at age 4. Two years of program

participation roughly doubles gains at second grade on most measures. The sole exception is literacy and reading for which two years has appeared to be at best slightly better. These results must be interpreted cautiously, as selection bias could also affect the differences between estimated effects for one and two years of program participation. Parents who know about and choose to send their children to preschool at age 3 may be different in immeasurable ways from those who only send them at 4. For this comparison we do not have the estimates from the more rigorous RDD to verify our results.

The evidence of downward bias in the longitudinal study estimates should be taken into consideration when interpreting our results. The RDD study indicated that there was substantial downward bias in estimates from our longitudinal study design and that this was most severe for literacy and least severe for language. This bias may explain why effects do not appear as sustained for literacy as for language through the end of second grade. The downward bias in the estimated initial effects on literacy is more than enough to have resulted in the lack of statistical significance even if true long-term effects were in the neighborhood of 0.25 or 0.30. Such effects would be large enough to be educationally meaningful. The estimated effects on passage comprehension in second grade are suggestive that we may be missing literacy effects because of the research design doesn't correct well enough for initial differences between the Pre-K and No-Pre-K groups that affect literacy development. An additional factor is that loss of some of the sample over time reduces our ability to detect effects.

The effects found in this study are the first links in a chain of results that have been found to produce long-term gains in school success and economic benefits in other preschool education studies that have followed children into adulthood (Campbell et al.,

2002; Reynolds, Temple, Robertson, & Mann, 2002; Schweinhart et al., 2005). There is a consistent picture in the study reported of gains in knowledge and skills accompanied by increased school success as measured by grade retention. These gains in learning and ability are large enough to be practically meaningful and are already beginning to result in savings for taxpayers who do not have to pay for extra years of schooling. The results of this study add to the considerable body of evidence indicating that quality preschool education can make significant contributions to efforts to improve children's learning and development (Frede, 1998). This study extends the evidence that such effects can be produced for today's children on a large scale by public programs administered through the public schools by demonstrating persistent and not just initial effects on children's cognitive abilities (Gormley, Gayer, Phillips, & Dawson, 2005).

References

Barnett, W.S., Epstein, D.J., Friedman, A.H., Boyd, J.S., & Hustedt, J.T. (2008). *The state of preschool 2008: State preschool yearbook.* New Brunswick, NJ: National Institute for Early Education Research.

Barnett, W. S., Jung, K., Lamy, C., Wong, V., Cook, T. (2007, March). *Effects of five state prekindergarten programs on early learning*. Paper presented at the bi-annual Society for Research in Child Development, Boston, MA.

Barnett, W.S., Lamy, C., & Jung, K. (2005). *The Effects of State Prekindergarten Programs on Young Children's School Readiness in Five States*. NIEER Policy Report. New Brunswick, NJ: National Institute for Early Education Research.

Barnett, W. S., Tarr, J., Esposito Lamy, C., & Frede, E. (2002). *Fragile Lives, Shattered Dreams: A Report on Implementation of Preschool Education in New Jersey's Abbott Districts*. Rutgers University, New Brunswick, NJ: CEER.

Campbell, F. A., Ramey, C. T., Pungello, E. P., Sparling, J., & Miller-Johnson, S. (2002). Early childhood education: Young adult outcomes from the Abecedarian Project. *Applied Developmental Science, 6,* 42-57.

Cook, T.D. (2008). Waiting for life to arrive: A history of the regression-discontinuity design in psychology, statistics, and economics. *Journal of Econometrics, 142* (2), 636-654.

Cook, T. D., & Campbell, D. T. (1979). *Quasi experimentation: Design and analysis issues for field settings*. Boston, MA: Houghton Mifflin.

Dunn, L. M. & Dunn, L. M. (1997). *Peabody Picture Vocabulary Test-Third Edition (PPVT-3).* Circle Pines, MN: AGS Publishing.

Dunn, Padilla, Lugo & Dunn, (1986). *Test de Vocabulario en Imágenes Peabody (TVIP)*. Circle Pines, MN: AGS Publishing.

Frede, E. (1998) A sociocultural analysis of the long-term benefits of preschool for children in poverty. In Barnett, W.S. and Boocock, SS (Eds) Early Care and Education: Lasting Effects for Children in Poverty. Buffalo, NY: SUNY Press.

Frede, E. (2005) Assessment in a continuous improvement cycle: New Jersey's Abbott preschool program, invited paper for the National Early Childhood Accountability Task Force with support from the Pew Charitable Trusts, the Foundation for Child Development and the Joyce Foundation. http://nieer.org/docs/?DocID=192

Frede, E., Lamy, C.E., & Boyd, J.S. (2005) Not Just Calendars and Counting Blocks: Using the NAEYC/NCTM Joint Position Statement "Early Childhood Mathematics: Promoting Good Beginnings" as a Basis for Measuring Classroom Teaching Practices and Their Relationship to Child Outcome a paper presented at the annual National Association for the Education of Young Children conference, Washington, DC.

Frede, E, Lamy, C.E. with Seplocha, H., Strasser, J., Jambunathan, S., Juncker, J., & Wolock, E. (2004). *A rising tide: Classroom quality and language skills in the Abbott Preschool Program: Year Two Preliminary Update of the Early Learning Improvement Consortium*. Trenton, NJ: New Jersey Department of Education. **www.nj.gov/njded/ece**.

Frede, E., Weber, M., Hornbeck, A., Stevenson-Boyd, J., & Colon, A. (2005). *Preschool Classroom Mathematics Inventory*. Available from the first author at efrede@nieer.org.

Gormley, W.T., Gayer, T., Phillips, D., & Dawson, B. (2005). The effects of universal pre-k on cognitive development. *Developmental Psychology, 41*(6), 872-884.

Harms, T., Clifford, R., & Cryer, D. (2005). *Early Childhood Environment Rating Scale (ECERS-R)*, revised edition. New York, NY: Teacher College Press.

Lamy, C., Frede, E., & ELIC. (2005). *Giant Steps for the Littlest Children: Progress in the Sixth Year of the Abbott Preschool Program.* Trenton, NJ: New Jersey Department of Education. www.nj.gov/njded/ece

Lonigan, C., Wagner, R., Torgeson, J. & Rashotte, C. (2002). Preschool Comprehensive Test of Phonological & Print Processing (Pre-CTOPPP). Tallahassee, FL: Florida State University, Department of Psychology.

MacInnes, G. (2009) In plain sight: Simple, difficult lessons from New Jersey's expensive effort to close the achievement gap. New York; Century Foundation Press.

McCarton, C. M., Brooks-Gunn, J., Wallace, I. F., Bauer, C. R., Bennett, F. C., Bernbaum, J. C., Broyles, R. S., Casey, P. H., McCormick, M. C., Scott, D. T., Tyson, J., Tonascia, J. and Meinert, C. L. (1997). Results at age 8 years of early intervention for low-birth-weight premature infants. Journal of the American Medical Association, 277, 126-132.

NJ DOE (2002b). New Jersey Preschool Teaching and Learning Expectations: Standards of Quality. Trenton: author.

Reynolds, A.J., Temple, J.A., Ou, S., Robertson, D.L., Mersky, J.P, Topitzes, J.W., & Niles, M.D. (2007). Effects of a school-based, early childhood intervention on adult health and well-being: A 19 year follow-up of low-income families. *Archives of Pediatrics and Adolescent Medicine*, *161*(8), 730-739.

Robin, K., Frede, E. & Barnett, W.S. (2006) *Is more better?: The effects of full-day vs. half-day preschool on early school achievement*. http://nieer.org/docs/index.php?DocID=144

Schweinhart, L.J., Montie, J., Xiang, Z., Barnett, W.S., Belfield, C.R., & Nores, M. (2005). *Lifetime effects: The High/Scope Perry Preschool study through age 40* (Monographs of the High/Scope Educational Research Foundation, 14). Ypsilanti, MI: High/Scope Educational Research Foundation.

Schwienhart, L.J. & Weikart, D.P. (1980) *Young children grow-up: The effects of the Perry Preschool Program on youths through age 15*. Ypsilanti, MI: High/Scope Educational Research Foundation.

Snow, C., Burns, M. S., & Griffin, P. (Eds.). (1998). *Preventing reading difficulties in young children.* Washington, DC: National Academy Press.

Trochim, W. M. K. (1984). *Research design for program evaluation: The regression-discontinuity approach*. Beverly Hills, CA: Sage Publications.

Wagner, R., Torgeson, J., & Rashotte, C. (1999). *Comprehensive Test of Phonological Processing (CTOPP).* Austin, TX: Pro-Ed.

Wong, V. C., Cook, T. D., Barnett, W. S., & Jung, K. (2008). An effectiveness-based evaluation of five state prekindergarten programs. *Journal of Policy Analysis and Management, 27*(1), 122-154.

Woodcock, R. W. & Munoz, A. F. (1990). *Bateria Woodcock-Munoz Pruebas de Aprovechamiento – Revisados.* Itasca, IL: Riverside Publishing.

Woodcock, R. W., McGrew, K. S. & Mather, N. (2001). *Woodcock-Johnson Tests of Achievement.* Itasca, IL: Riverside Publishing.

STEM Module Synopsis K-2

Wind Power

Work in teams as **environmental engineers** to build anemometers to test wind speed and collect data, to determine the best location to build a wind turbine. Teams pick a location near the school to conduct the tests. Each team collects data during the testing and displays it using a bar graph. The class will then determine the best location o build the wind turbine based on the data collected.

Teams:

- Build a workable anemometer;
- Conduct an investigation, observing and recording the number of turns of the anemometer within a given time period from various locations around the school; and
- Display the data collected from 3 trials on a bar graph to enable the class to determine the best location for a wind turbine.

Math

4.4.2.A.2: Read, interpret, and construct pictographs or bar graphs with scales showing smallest to largest (range) and most frequent (mode).
4.5.2.1: Identify the question(s) asked in a problem and any other questions that need to be answered in order to solve the problem.
4.5.2.4: Select from a variety of problem-solving strategies and use one or more strategies to solve a problem.

Science

5.4.2.F.1: Observe and document daily weather conditions and discuss how the weather influences your activities for the day.

Technology

8.2.2.A.1: Describe how technology's products, systems, and resources are useful tools at school, home, and work.

Building Bridges

Work in teams as **civil engineers** to design, build and test model bridges for a specific New Jersey site. Each bridge must meet criteria using specific materials and design guidelines. Groups can build bridges to span a valley, a road, railroad track, or a body of water. The goal is to provide passage over the obstacle. Designs of bridges will vary depending on the function of the bridge, the construction materials selected, and the nature of the terrain where the bridge is to be constructed.

Teams:

- Plan and design the bridge, using a scale drawing;
- Select appropriate materials for the model;
- Construct the bridge over the obstacle; and
- Test the bridge using uniform weights.

Math

4.2.2.B.1: Measure and estimate to the nearest inch, foot, yard, centimeter, and meter.
4.2.2.B.3: Decide which unit of length is most appropriate in a given situation.
4.5.2.4: Select from a variety of problem-solving strategies and use one or more strategies to solve a problem.

Science

5.2.4.E.4: Investigate, construct, and generalize rules for the effect that force of gravity has on balls of different sizes and weights.

Technology

8.2.2.B.2: Investigate the influence of a specific technology on the individual, family, community, and environment.

Wildlife Feeder

Work as **environmental engineers** to design, build and test an outdoor wildlife-feeding device. Designs must be appropriate for a specific type of organism (birds, small mammals, deer), and must include a method of storing and releasing the food to the appropriate species. The food preferences of the focal animal should be determined in a class field study before the feeder is designed.

Teams:

- Conduct an investigation, observe, survey and record food preferences of local wildlife;
- Plan, design and construct the feeder as a class; and
- Test the feeder by placing it outdoors for use by wildlife and recording number of visits.

Math

4.2.2.B.1: Measure and estimate to the nearest inch, foot, yard, centimeter, and meter.
4.2.2.B.3: Decide which unit of length is most appropriate in a given situation.
4.4.2.A.2: Read, interpret, and construct pictographs or bar graphs with scales showing smallest to largest (range) and most frequent (mode).
4.5.2.4: Select from a variety of problem-solving strategies and use one or more strategies to solve a problem.

Science

5.3.2 B.1: Describe the requirements for the care of plants and animals related to meeting their energy needs.
5.3.2.B.2: Compare how different animals obtain food and water.

Technology

8.2.2.A.1: Describe how technology's products, systems, and resources are useful tools at school, home, and work
8.2.2.B.2: Investigate the influence of a specific technology on the individual, family, community, and environment.

STEM Module Synopsis 3-5

Rocket Boat

Work in teams as **vehicle engineers** to design a thrust system that is safe and efficient. The teams consider factors such as type of propellant, temperature, pressure, the size and shape of the container as they design their aqua thruster or rocket boat. As an engineering team, students must also consider safety as they choose a propellant and container in which the propellant will be used.

Teams:

- Choose a container and type of propellant;
- Design a fin to attach to the rocket boat;
- Predict the length of time the thrust will last;
- Conduct the investigation and record findings;
- Describe the trust produced; and
- List design modifications that will increase the trust.

Math

4.2.2.B.1: Measure and estimate to the nearest inch, foot, yard, centimeter, and meter.
4.2.2.B.3: Decide which unit of length is most appropriate in a given situation.
4.4.2.A.2: Read, interpret, and construct pictographs or bar graphs with scales showing smallest to largest (range) and most frequent (mode).
4.5.2.4: Select from a variety of problem-solving strategies and use one or more strategies to solve a problem.

Science

5.1.4.B.2: Use measurement tools and observation schedules to collect and analyze data; evaluate evidence when building and revising models and explanations of natural phenomena.
5.2.2.E.2: Predict an object's speed, path, or how far it will travel using various forces and surfaces.
5.2.2.E.3: Distinguish a force that acts by touching it with an object (e.g., by pushing or pulling) from a force that can act without touching (e.g., the attraction between a magnet and a steel paper clip).
5.2.4.E.1: Demonstrate through example that motion is a change in position over a period of time.
5.2.4.E.2: Identify the force that starts something moving or changes its speed or direction of motion.

Technology

8.2.4.F.2: Identify the resources needed to create technological products and systems.

Eye of the Beholder

Work in teams as **engineers** to design an electronic message board for the teacher to put up homework reminders, upcoming events for the school, and important class news in the line of sight for all students. Students collect data to determine the average or normal eyesight for their class by using a doctor's eye chart to measure the vision of each student. Each team will use the average eyesight of the class to determine what the message board will look like and where it should be located.

Teams:

- Discuss the relationship of vision to the nervous system;??;
- Measure the eye sight of each student (20/20 is normal);
- Display the data on a line plot;
- Find the average class eyesight; and
- Design a electronic message board that can be seen by the class and determine sign location in the classroom.

Math

4.4.5.A.1: Calculate the average (mean) of a data set that includes whole numbers, fractions, and decimals
4.5.5.6: Represent a problem situation using words, numbers, pictures, physical objects, or symbols.
4.5.5.9: Summarize mathematical information, draw conclusions, and explain reasoning.
4.5.5.11: Use technology to gather, analyze, and communicate mathematical information.

Science

5.1.4.B.2: Use measurement tools and observation schedules to collect and analyze data; evaluate evidence when building and revising models and explanations of natural phenomena.
5.3.4.A.3: Describe the systems involved in carrying out everyday life activities.

Technology

8.2.4.A.1: Investigate factors that influence the development and function of products and systems.
8.2.4.G.3: Evaluate the function, value and aesthetics of a technological product, system or environment from the perspective of the user and the producer.

Catch Me if You Can

Work as teams of **environmental engineers** to design fishing nets that fishermen could use to help avoid by-catch. Each team attempts to fish for "target fish" using their nets. Each student will use a table to collect data and use the data to determine the percentage of "target fish" caught versus the percentage of other sea animals caught. Based on the data collected, teams suggest design changes for their fishing nets.

Teams:

- Plan and design a fishing net for "target fish";
- Investigate the success of the design;
- Collect and display data;
- Compute percentages; and
- List design modifications.

Math

4.1.5.B.1: Solve problems involving multiplication and division of any whole numbers.
4.5.5.9: Summarize mathematical information, draw conclusions, and explain reasoning.
4.5.5.11: Use technology to gather, analyze, and communicate mathematical information.

Science

5.1.4.B.2: Use measurement tools and observation schedules to collect and analyze data; evaluate evidence when building and revising models and explanations of natural phenomena.
5.3.2.C.3: Communicate ways that humans protect habitats and/or improve conditions for the growth of plants and animals that live there or ways that might harm them.

Technology

8.2.4.A.2: Compare and contrast how a product has changed over time due to economic, political or cultural influences using a digital format.
8.2.4.B.3: Explain the positive and negative effects of products and systems on humans, other species and the environment.

STEM Module Synopsis 6-8

On the Road Again

Work in teams as **civil engineers** to plan, design and build a prototype of an interstate highway through New Jersey. The road may feature bridges and tunnels, but cost efficiency is an important factor.

Teams:

- Plan the best path for the road, considering topographic, demographic and cost concerns;
- Determine the length of the road and the cost per mile;
- Construct a prototype of the road; and
- Decide as a class which design is the best.

Math

4.2.8.B.3: Solve problems involving scale factors, area, and volume using ratio and proportion
4.5.8.3: Analyze and compare mathematical strategies for solving problems, and select and use one or more strategies to solve a problem.
4.5.8.5: Communicate the answer(s) to the question(s) in a problem using appropriate representations, including symbols and informal and formal mathematical language.
4.5.8.8: Make and test conjectures based on data (or information) collected from explorations and experiments.

Science

5.1.8.B.3: Build, refine and represent evidence-based models using mathematical, physical and computational tools.
5.4.6.B.2: Examine Earth's surface features and identify those created on a scale of human life or on a geologic time scale.

Technology

8.2.8.B.1: Design and create a product using the design process that addresses a real world problem with specific criteria and restraints.
8.2.8.B.2: Identify the design constraints and trade-offs involved in designing a prototype by completing a design problem and reporting results in a multimedia presentation.
8.2.8.B.3: Solve a science-based design challenge and build a prototype using science and math principles throughout the design process.

Humpty Dumpty's Ride

Work in teams as **vehicle engineers** to plan, design and test a rolling device/enclosure that will protect an egg on/in a wheeled base as it is rolled down a ramp.

Teams:

- Plan and design the vehicle;
- Record data from multiple trials, providing evidence of redesign efforts; and
- Test the safety of the vehicle at increasing slopes.

Math

4.4.8.A.2: Compare data of different data sets and describe the differences using box-and-whisker plots.
4.5.8.3: Analyze and compare mathematical strategies for solving problems, and select and use one or more strategies to solve a problem.
4.5.8.4: Represent a problem situation, describe the process used to solve the problem, and verify the reasonableness of the solution.
4.5.8.5: Communicate the answer(s) to the question(s) in a problem using appropriate representations, including symbols and informal and formal mathematical language.
4.5.8.8: Make and test conjectures based on data (or information) collected from explorations and experiments.

Science

5.1.8.A.2: Develop and use mathematical, physical and computational tools to build conceptual-based models and to pose theories.
5.2.8 E.1: Calculate the speed of an object when given a distance and time.

Technology

8.2.8.B.1: Design and create a product using the design process that addresses a real world problem with specific criteria and restraints.
8.2.8.B.2: Identify the design constraints and trade-offs involved in designing a prototype by completing a design problem and reporting results in a multimedia presentation.
8.2.8.B.3: Solve a science-based design challenge and build a prototype using science and math principles throughout the design process.

Fresh Flatware

Work in teams as **waste management engineers** to design flatware (forks, knives and spoons) that can biodegrade in a relatively short amount of time.

Teams:

- Plan and design the flatware using geometric proportions;
- Select appropriate materials for construction;
- Predict decay rates; and
- Test the durability and the rate of biodegradation of the flatware.

Math

4.3.8.B.8: Solve single and multi-step word problems involving linear functions (*including rates*) and verify the solution.
4.5.8.3: Analyze and compare mathematical strategies for solving problems, and select and use one or more strategies to solve a problem.
4.5.8.4: Represent a problem situation, describe the process used to solve the problem, and verify the reasonableness of the solution.
4.5.8.5: Communicate the answer(s) to the question(s) in a problem using appropriate representations, including symbols and informal and formal mathematical language.
4.5.8.8: Make and test conjectures based on data (or information) collected from explorations and experiments.

Science

5.1.8.A.3: Use scientific principles and theories to build and refine standards for data collection, posing controls, and presenting evidence.
5.1.8.B.2: Design investigations, collect and analyze data, and evaluate evidence to determine central tendencies, causal/correlational relationships, and anomalous data.
5.2.6 B1: Compare the properties of reactants with the properties of the products when two or more substances are combined and react chemically.

Technology

8.2.8.B.1: Design and create a product using the design process that addresses a real world problem with specific criteria and restraints.
8.2.8.B.2: Identify the design constraints and trade-offs involved in designing a prototype by completing a design problem and reporting results in a multimedia presentation.
8.2.8.B.3: Solve a science-based design challenge and build a prototype using science and math principles throughout the design process.

STEM Module Synopsis 9-12

Now We're Cooking!

Work as **mechanical engineers** to design, build and compare the performance of multiple solar cooker designs and consider their possible use in developing nations.

- Determine the differences between parabolic, cone, panel and box cookers and predict the efficiency of each model cooker;
- Plan, design and build the cooker;
- Test the cookers outside in the sunlight using water; and
- Measure and graph the temperature increases of the water.

Math

4.3.12.B.13: Solve everyday problems that can be modeled using linear, quadratic, exponential, periodic (sine and cosine) and step functions.
4.5.12.1: Analyze a problem situation and represent it mathematically.
4.5.12.6: Communicate mathematical thinking coherently and clearly to peers, teachers, and others, both orally and in writing.
4.5.12.7: Synthesize information to draw conclusions, and evaluate the arguments and conclusions of others.
4.5.12.9: Use technology to gather, analyze, and communicate mathematical information.

Science

5.1.12.B.3: Use scientific tools, technologies, theories and computational models to gather and evaluate evidence.
5.1.12.D.2: Represent ideas using literal representations such as graphs, tables, journals, concept maps, and diagrams.
5.4.12.G.4: Explain the unintended consequences of harvesting natural resources from an ecosystem.
5.4.12.G.7: Assess the potential environmental impact of large scale adoption of emerging technology (e.g., wind farming, harnessing geothermal energy) using scientific, economic, and other data.

Technology

8.2.12.A.1: Design and create a technology product or system that improves the quality of life and identify trade-offs, risks and benefits.
8.2.12.B.1: Design and create a product that maximizes conservation and sustainability of a scarce resource by using entrepreneurial skills and the design process.
8.2.12.B.2: Design and create a prototype for solving a global problem, documenting how the proposed design features affect the feasibility of the prototype through the use of engineering, drawing and other technical methods of illustration.
8.2.12.D.1: Reverse engineer a product to assist in designing a more eco-friendly version guided by an analysis of trends and data about renewable and sustainable materials.
8.2.12.E.1: Devise a technological product or system, addressing a global issue, using the design process and provide documentation through drawings, data and materials that reflect diverse cultural perspectives.

Feed the World

Work in teams as **food engineers** to design and create a prototype of a nutritional product that will prevent or reduce malnutrition, especially in developing nations.

Teams:

- Determine essential biomolecules and their sources;
- Plan and design the recipe using nutritional information and cost analysis;
- Create the prototype;
- Collectively evaluate each sample, noting benefits or drawbacks of nutritional value, taste, production cost, storage, etc.; and
- Present one or all recipes to the local Food Bank.

Math

4.4.12.A.2: Select an appropriate graphical representation for a set of data and use appropriate statistics (e.g., quartile or percentile distribution) to communicate information about the data.
4.5.12.1: Analyze a problem situation and represent it mathematically.
4.5.12.6: Communicate mathematical thinking coherently and clearly to peers, teachers, and others, both orally and in writing.
4.5.12.7: Synthesize information to draw conclusions, and evaluate the arguments and conclusions of others.
4.5.12.9: Use technology to gather, analyze, and communicate
4.5.12.4: Generalize a solution strategy for a single problem to a class of related problems, and apply strategy for a class of related problems to solve specific problems.

Science

5.1.12.A.1: Refine conceptual interrelationships and patterns of evidence among central scientific explanations using mathematical, physical, and computational tools.
5.3.12.A.1: Represent and explain the relationship between the structure and function of each class of complex molecules using a variety of physical or electronic models.
5.3.12.A.6: Describe how a disease is the result of a malfunctioning system, organ and cell and relate to possible treatment interventions (e.g. diabetes, CF, lactose intolerance).

Technology

8.2.12.A.1: Design and create a technology product or system that improves the quality of life and identify trade-offs, risks and benefits.
8.2.12.B.1: Design and create a product that maximizes conservation and sustainability of a scarce resource by using entrepreneurial skills and the design process.
8.2.12.B.2: Design and create a prototype for solving a global problem, documenting how the proposed design features affect the feasibility of the prototype through the use of engineering, drawing and other technical methods of illustration.

Environmental Justice

Work in teams as **civil engineers** to determine the best location for a bus depot, which is an environmental hazard that can affect human health.

Teams:

- Determine, using Steiner point evaluation, the spot on a given map that would be optimal for the depot location;
- Consider population density or other demographic factors that might change or influence the optimal location;
- Engage in a class discussion or debate about the location of the depot and come to a consensus; and
- Design the depot to have the least impact on human health.

Math

4.3.12.B.13: Solve everyday problems that can be modeled using linear, quadratic, exponential, periodic (sine and cosine) and step functions.
4.5.12.1: Analyze a problem situation and represent it mathematically.
4.5.12.6: Communicate mathematical thinking coherently and clearly to peers, teachers, and others, both orally and in writing.
4.5.12.7: Synthesize information to draw conclusions, and evaluate the arguments and conclusions of others.
4.5.12.9: Use technology to gather, analyze, and communicate

Science

5.1.12.A.2: Represent and evaluate evidence-based models to ask productive new scientific questions.
5.1.12.B.3: Use scientific tools, technologies, theories and computational models to gather and evaluate evidence.
5.1.12.D.1: Engage in multiple forms of discussion in order to process, make sense of, and learn from others' ideas, observations, and experiences.
5.1.12.D.2: Represent ideas using literal representations such as graphs, tables, journals, concept maps, and diagrams.
5.4.12.G.5: Analyze the impacts of human activity on the cycling of matter and energy through ecosystems.

Technology

8.2.12.A.1: Design and create a technology product or system that improves the quality of life and identify trade-offs, risks and benefits.
8.2.12.B.2: Design and create a prototype for solving a global problem, documenting how the proposed design features affect the feasibility of the prototype through the use of engineering, drawing and other technical methods of illustration.
8.2.12.C.1: Analyze the ethical impact of a product, system or environment worldwide and present findings in a web-based publication for further comment and analysis.
8.2.12.C2: Evaluate the positive and negative impacts of the design in a digital overview of the chosen product.

Content Area	**Science**
Standard	**5.1 Science Practices:** All students will understand that science is both a body of knowledge and an evidence-based, model-building enterprise that continually extends, refines, and revises knowledge. The four Science Practices strands encompass the knowledge and reasoning skills that students must acquire to be proficient in science.
Strand	**A. Understand Scientific Explanations**: Students understand core concepts and principles of science and use measurement and observation tools to assist in categorizing, representing, and interpreting the natural and designed world.

By the end of grade	**Content Statement**	**CPI #**	**Cumulative Progress Indicator (CPI)**
P	Who, what, when, where, why, and how questions form the basis for young learners' investigations during sensory explorations, experimentation, and focused inquiry.	5.1.P.A.1	Display curiosity about science objects, materials, activities, and longer-term investigations in progress.
4	Fundamental scientific concepts and principles and the links between them are more useful than discrete facts.	5.1.4.A.1	Demonstrate understanding of the interrelationships among fundamental concepts in the physical, life, and Earth systems sciences.
4	Connections developed between fundamental concepts are used to explain, interpret, build, and refine explanations, models, and theories.	5.1.4.A.2	Use outcomes of investigations to build and refine questions, models, and explanations.
4	Outcomes of investigations are used to build and refine questions, models, and explanations.	5.1.4.A.3	Use scientific facts, measurements, observations, and patterns in nature to build and critique scientific arguments.
8	Core scientific concepts and principles represent the conceptual basis for model-building and facilitate the generation of new and productive questions.	5.1.8.A.1	Demonstrate understanding and use interrelationships among central scientific concepts to revise explanations and to consider alternative explanations.

8	Results of observation and measurement can be used to build conceptual-based models and to search for core explanations.	5.1.8.A.2	Use mathematical, physical, and computational tools to build conceptual-based models and to pose theories.
8	Predictions and explanations are revised based on systematic observations, accurate measurements, and structured data/evidence.	5.1.8.A.3	Use scientific principles and models to frame and synthesize scientific arguments and pose theories.
12	Mathematical, physical, and computational tools are used to search for and explain core scientific concepts and principles.	5.1.12.A.1	Refine interrelationships among concepts and patterns of evidence found in different central scientific explanations.
12	Interpretation and manipulation of evidence-based models are used to build and critique arguments/explanations.	5.1.12.A.2	Develop and use mathematical, physical, and computational tools to build evidence-based models and to pose theories.
12	Revisions of predictions and explanations are based on systematic observations, accurate measurements, and structured data/evidence.	5.1.12.A.3	Use scientific principles and theories to build and refine standards for data collection, posing controls, and presenting evidence.

Content Area	**Science**
Standard	**5.1 Science Practices:** All students will understand that science is both a body of knowledge and an evidence-based, model-building enterprise that continually extends, refines, and revises knowledge. The four Science Practices strands encompass the knowledge and reasoning skills that students must acquire to be proficient in science.
Strand	**B. Generate Scientific Evidence Through Active Investigations:** Students master the conceptual, mathematical, physical, and computational tools that need to be applied when constructing and evaluating claims.

By the end of grade	Content Statement	CPI #	Cumulative Progress Indicator (CPI)
P	Observations and investigations form young learners' understandings of science concepts.	5.1.P.B.1	Observe, question, predict, and investigate materials, objects, and phenomena (e.g., using simple tools to crack a nut and look inside) during indoor and outdoor classroom activities and during any longer-term investigations.
P	Experiments and explorations provide opportunities for young learners to use science vocabulary and scientific terms.	5.1.P.B.2	Use basic science terms and topic-related science vocabulary.
P	Experiments and explorations give young learners opportunities to use science tools and technology.	5.1.P.B.3	Identify and use basic tools and technology to extend exploration in conjunction with science investigations.
4	Building and refining models and explanations requires generation and evaluation of evidence.	5.1.4.B.1	Design and follow simple plans using systematic observations to explore questions and predictions.
4	Tools and technology are used to gather, analyze, and communicate results.	5.1.4.B.2	Measure, gather, evaluate, and share evidence using tools and technologies.
4	Evidence is used to construct and defend arguments.	5.1.4.B.3	Formulate explanations from evidence.
4	Reasoning is used to support scientific conclusions.	5.1.4.B.4	Communicate and justify explanations with reasonable and logical arguments.
8	Evidence is generated and evaluated as part of building and refining models and explanations.	5.1.8.B.1	Design investigations and use scientific instrumentation to collect, analyze, and evaluate evidence as part of building and revising models and explanations.
8	Mathematics and technology are used	5.1.8.B.2	Gather, evaluate, and represent evidence using scientific tools,

	to gather, analyze, and communicate results.		technologies, and computational strategies.
8	Carefully collected evidence is used to construct and defend arguments.	5.1.8.B.3	Use qualitative and quantitative evidence to develop evidence-based arguments.
8	Scientific reasoning is used to support scientific conclusions.	5.1.8.B.4	Use quality controls to examine data sets and to examine evidence as a means of generating and reviewing explanations.
12	Logically designed investigations are needed in order to generate the evidence required to build and refine models and explanations.	5.1.12.B.1	Design investigations, collect evidence, analyze data, and evaluate evidence to determine measures of central tendencies, causal/correlational relationships, and anomalous data.
12	Mathematical tools and technology are used to gather, analyze, and communicate results.	5.1.12.B.2	Build, refine, and represent evidence-based models using mathematical, physical, and computational tools.
12	Empirical evidence is used to construct and defend arguments.	5.1.12.B.3	Revise predictions and explanations using evidence, and connect explanations/arguments to established scientific knowledge, models, and theories.
12	Scientific reasoning is used to evaluate and interpret data patterns and scientific conclusions.	5.1.12.B.4	Develop quality controls to examine data sets and to examine evidence as a means of generating and reviewing explanations.

Content Area	Science
Standard	**5.1 Science Practices:** All students will understand that science is both a body of knowledge and an evidence-based, model-building enterprise that continually extends, refines, and revises knowledge. The four Science Practices strands encompass the knowledge and reasoning skills that students must acquire to be proficient in science.
Strand	**C. Reflect on Scientific Knowledge:** Scientific knowledge builds on itself over time.

By the end of grade	Content Statement	CPI #	Cumulative Progress Indicator (CPI)
P	Interacting with peers and adults to share questions and explorations about the natural world builds young learners' scientific knowledge.	5.1.P.C.1	Communicate with other children and adults to share observations, pursue questions, and make predictions and/or conclusions.
4	Scientific understanding changes over time as new evidence and updated arguments emerge.	5.1.4.C.1	Monitor and reflect on one's own knowledge regarding how ideas change over time.
4	Revisions of predictions and explanations occur when new arguments emerge that account more completely for available evidence.	5.1.4.C.2	Revise predictions or explanations on the basis of learning new information.
4	Scientific knowledge is a particular kind of knowledge with its own sources, justifications, and uncertainties.	5.1.4.C.3	Present evidence to interpret and/or predict cause-and-effect outcomes of investigations.
8	Scientific models and understandings of fundamental concepts and principles are refined as new evidence is considered.	5.1.8.C.1	Monitor one's own thinking as understandings of scientific concepts are refined.
8	Predictions and explanations are revised to account more completely for available evidence.	5.1.8.C.2	Revise predictions or explanations on the basis of discovering new evidence, learning new information, or using models.
8	Science is a practice in which an	5.1.8.C.3	Generate new and productive questions to evaluate and refine

	established body of knowledge is continually revised, refined, and extended.		core explanations.
12	Refinement of understandings, explanations, and models occurs as new evidence is incorporated.	5.1.12.C.1	Reflect on and revise understandings as new evidence emerges.
12	Data and refined models are used to revise predictions and explanations.	5.1.12.C.2	Use data representations and new models to revise predictions and explanations.
12	Science is a practice in which an established body of knowledge is continually revised, refined, and extended as new evidence emerges.	5.1.12.C.3	Consider alternative theories to interpret and evaluate evidence-based arguments.

Content Area	**Science**
Standard	**5.1 Science Practices:** All students will understand that science is both a body of knowledge and an evidence-based, model-building enterprise that continually extends, refines, and revises knowledge. The four Science Practices strands encompass the knowledge and reasoning skills that students must acquire to be proficient in science.
Strand	**D. Participate Productively in Science:** The growth of scientific knowledge involves critique and communication, which aresocial practices that are governed by a core set of values and norms.

By the end of grade	**Content Statement**	**CPI #**	**Cumulative Progress Indicator (CPI)**
P	Science practices include drawing or "writing" on observation clipboards, making rubbings, or charting the growth of plants.	5.1.P.D.1	Represent observations and work through drawing, recording data, and "writing."
4	Science has unique norms for participation. These include adopting a critical stance, demonstrating a willingness to ask questions and seek help, and developing a sense of trust and skepticism.	5.1.4.D.1	Actively participate in discussions about student data, questions, and understandings.
4	In order to determine which arguments and explanations are most persuasive, communities of learners work collaboratively to pose, refine, and evaluate questions, investigations, models, and theories (e.g., scientific argumentation and representation).	5.1.4.D.2	Work collaboratively to pose, refine, and evaluate questions, investigations, models, and theories.
4	Instruments of measurement can be used to safely gather accurate information for making scientific comparisons of objects and events.	5.1.4.D.3	Demonstrate how to safely use tools, instruments, and supplies.
4	Organisms are treated humanely, responsibly, and ethically.	5.1.4.D.4	Handle and treat organisms humanely, responsibly, and ethically.

8	Science involves practicing productive social interactions with peers, such as partner talk, whole-group discussions, and small-group work.	5.1.8.D.1	Engage in multiple forms of discussion in order to process, make sense of, and learn from others' ideas, observations, and experiences.
8	In order to determine which arguments and explanations are most persuasive, communities of learners work collaboratively to pose, refine, and evaluate questions, investigations, models, and theories (e.g., argumentation, representation, visualization, etc.).	5.1.8.D.2	Engage in productive scientific discussion practices during conversations with peers, both face-to-face and virtually, in the context of scientific investigations and model-building.
8	Instruments of measurement can be used to safely gather accurate information for making scientific comparisons of objects and events.	5.1.8.D.3	Demonstrate how to safely use tools, instruments, and supplies.
8	Organisms are treated humanely, responsibly, and ethically.	5.1.8.D.4	Handle and treat organisms humanely, responsibly, and ethically.
12	Science involves practicing productive social interactions with peers, such as partner talk, whole-group discussions, and small-group work.	5.1.12.D.1	Engage in multiple forms of discussion in order to process, make sense of, and learn from others' ideas, observations, and experiences.
12	Science involves using language, both oral and written, as a tool for making thinking public.	5.1.12.D.2	Represent ideas using literal representations, such as graphs, tables, journals, concept maps, and diagrams.
12	Ensure that instruments and specimens are properly cared for and that animals, when used, are treated humanely, responsibly, and ethically.	5.1.12.D.3	Demonstrate how to use scientific tools and instruments and knowledge of how to handle animals with respect for their safety and welfare.

Content Area	Science
Standard	**5.2 Physical Science:** All students will understand that physical science principles, including fundamental ideas about matter, energy, and motion, are powerful conceptual tools for making sense of phenomena in physical, living, and Earth systems science.
Strand	**A. Properties of Matter:** All objects and substances in the natural world are composed of matter. Matter has two fundamental properties: matter takes up space, and matter has inertia.

By the end of grade	Content Statement	CPI #	Cumulative Progress Indicator (CPI)
P	Observations and investigations form a basis for young learners' understanding of the properties of matter.	5.2.P.A.1	Observe, manipulate, sort, and describe objects and materials (e.g., water, sand, clay, paint, glue, various types of blocks, collections of objects, simple household items that can be taken apart, or objects made of wood, metal, or cloth) in the classroom and outdoor environment based on size, shape, color, texture, and weight.
2	Living and nonliving things are made of parts and can be described in terms of the materials of which they are made and their physical properties.	5.2.2.A.1	Sort and describe objects based on the materials of which they are made and their physical properties.
2	Matter exists in several different states; the most commonly encountered are solids, liquids, and gases. Liquids take the shape of the part of the container they occupy. Solids retain their shape regardless of the container they occupy.	5.2.2.A. 2	Identify common objects as solids, liquids, or gases.
4	Some objects are composed of a single substance; others are composed of more than one substance.	5.2.4.A.1	Identify objects that are composed of a single substance and those that are composed of more than one substance using simple tools found in the classroom.
4	Each state of matter has unique properties (e.g., gases can be compressed, while solids and liquids cannot; the shape of a solid is independent of its container; liquids and	5.2.4.A.2	Plan and carry out an investigation to distinguish among solids, liquids, and gasses.

	gases take the shape of their containers).		
4	Objects and substances have properties, such as weight and volume, that can be measured using appropriate tools. Unknown substances can sometimes be identified by their properties.	5.2.4.A.3	Determine the weight and volume of common objects using appropriate tools.
4	Objects vary in the extent to which they absorb and reflect light and conduct heat (thermal energy) and electricity.	5.2.4.A.4	Categorize objects based on the ability to absorb or reflect light and conduct heat or electricity.
6	The volume of some objects can be determined using liquid (water) displacement.	5.2.6.A.1	Determine the volume of common objects using water displacement methods.
6	The density of an object can be determined from its volume and mass.	5.2.6.A.2	Calculate the density of objects or substances after determining volume and mass.
6	Pure substances have characteristic intrinsic properties, such as density, solubility, boiling point, and melting point, all of which are independent of the amount of the sample.	5.2.6.A.3	Determine the identity of an unknown substance using data about intrinsic properties.
8	All matter is made of atoms. Matter made of only one type of atom is called an element.	5.2.8.A.1	Explain that all matter is made of atoms, and give examples of common elements.
8	All substances are composed of one or more of approximately 100 elements.	5.2.8.A.2	Analyze and explain the implications of the statement “all substances are composed of elements.”
8	Properties of solids, liquids, and gases are explained by a model of matter as composed of tiny particles (atoms) in motion.	5.2.8.A.3	Use the kinetic molecular model to predict how solids, liquids, and gases would behave under various physical circumstances, such as heating or cooling.
8	The Periodic Table organizes the elements into families of elements with similar properties.	5.2.8.A.4	Predict the physical and chemical properties of elements based on their positions on the Periodic Table.
8	Elements are a class of substances composed of a single kind of atom.	5.2.8.A.5	Identify unknown substances based on data regarding their physical and chemical properties.

	Compounds are substances that are chemically formed and have physical and chemical properties that differ from the reacting substances.		
8	Substances are classified according to their physical and chemical properties. Metals are a class of elements that exhibit physical properties, such as conductivity, and chemical properties, such as producing salts when combined with nonmetals.	5.2.8.A.6	Determine whether a substance is a metal or nonmetal through student-designed investigations.
8	Substances are classified according to their physical and chemical properties. Acids are a class of compounds that exhibit common chemical properties, including a sour taste, characteristic color changes with litmus and other acid/base indicators, and the tendency to react with bases to produce a salt and water.	5.2.8.A.7	Determine the relative acidity and reactivity of common acids, such as vinegar or cream of tartar, through a variety of student-designed investigations.
12	Electrons, protons, and neutrons are parts of the atom and have measurable properties, including mass and, in the case of protons and electrons, charge. The nuclei of atoms are composed of protons and neutrons. A kind of force that is only evident at nuclear distances holds the particles of the nucleus together against the electrical repulsion between the protons.	5.2.12.A.1	Use atomic models to predict the behaviors of atoms in interactions.
12	Differences in the physical properties of solids, liquids, and gases are explained by the ways in which the atoms, ions, or molecules of the substances are	5.2.12.A.2	Account for the differences in the physical properties of solids, liquids, and gases.

	arranged, and by the strength of the forces of attraction between the atoms, ions, or molecules.		
12	In the Periodic Table, elements are arranged according to the number of protons (the atomic number). This organization illustrates commonality and patterns of physical and chemical properties among the elements.	5.2.12.A.3	Predict the placement of unknown elements on the Periodic Table based on their physical and chemical properties.
12	In a neutral atom, the positively charged nucleus is surrounded by the same number of negatively charged electrons. Atoms of an element whose nuclei have different numbers of neutrons are called isotopes.	5.2.12.A.4	Explain how the properties of isotopes, including half-lives, decay modes, and nuclear resonances, lead to useful applications of isotopes.
12	Solids, liquids, and gases may dissolve to form solutions. When combining a solute and solvent to prepare a solution, exceeding a particular concentration of solute will lead to precipitation of the solute from the solution. Dynamic equilibrium occurs in saturated solutions. Concentration of solutions can be calculated in terms of molarity, molality, and percent by mass.	5.2.12.A.5	Describe the process by which solutes dissolve in solvents.
12	Acids and bases are important in numerous chemical processes that occur around us, from industrial to biological processes, from the laboratory to the environment.	5.2.12.A.6	Relate the pH scale to the concentrations of various acids and bases.