PreK-3rd: Next Steps for State Longitudinal Data Systems
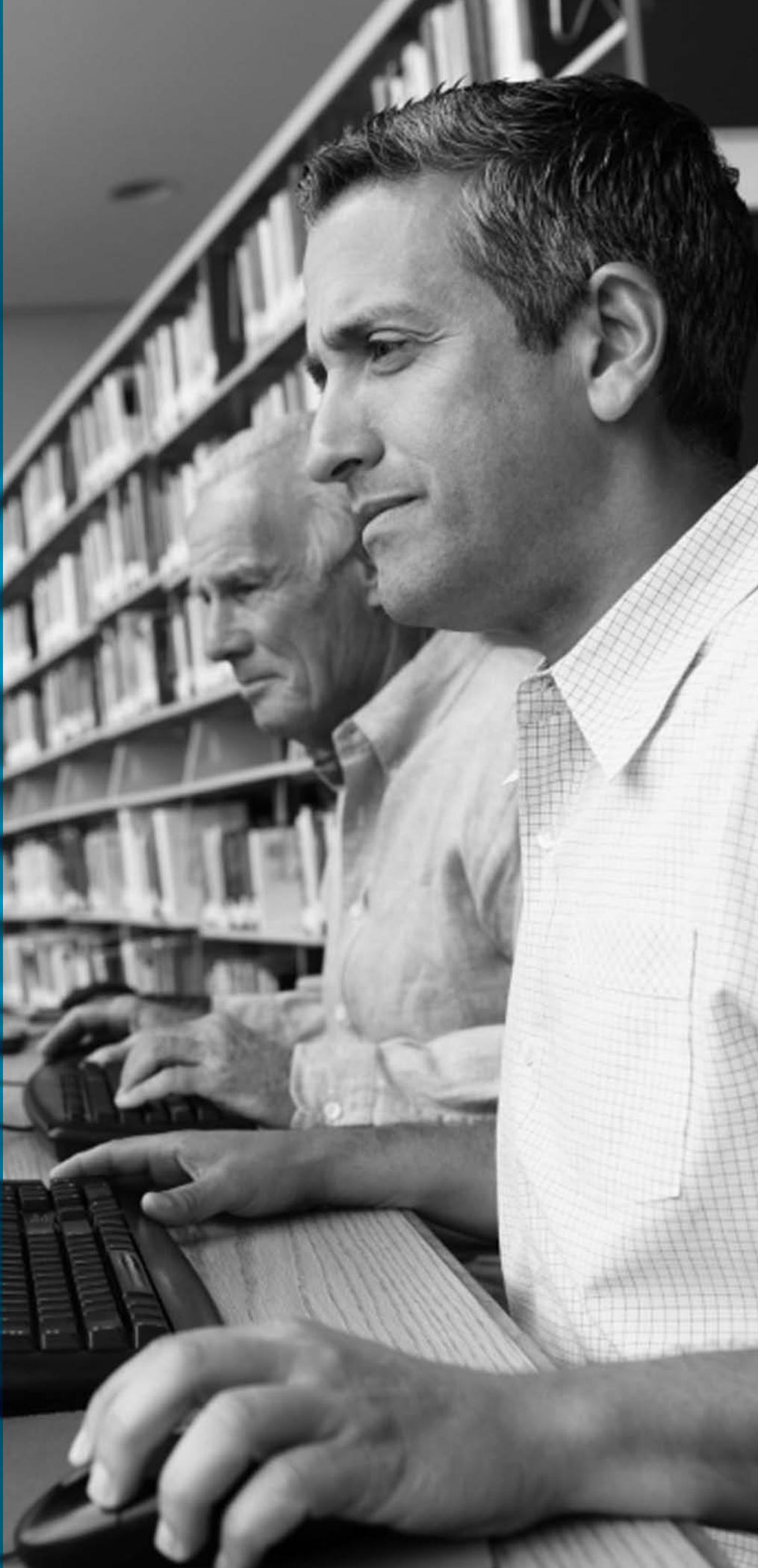
by Donald J. Hernandez

PreK-3rd Policy to Action Briefs

PreK-3rd Policy to Action Briefs seek to promote the idea of PreK-3rd and to provide guidance for its implementation. The goal of PreK-3rd Grade Education is the creation of a seamless learning continuum from PreK to Third Grade.

PreK-3rd is a national movement of schools, districts, educators and universities seeking to improve how children from ages 3 to 8 learn and develop in schools. While these different efforts use a variety of names, all are working to connect high-quality PreK programs with high-quality elementary schools to create a well-aligned primary education for all our nation's children.

What is PreK-3rd Education?

PreK-3rd approaches require that educational standards, curricula, assessment and professional development are strongly aligned across high-quality PreK, Kindergarten, First, Second and Third Grades.

The PreK–3rd approach consists of:

• Public funding for Full-Day education starting at age three, including:

 – Voluntary, Full-Day PreK for three- and four-year-olds

 – Required, Full-Day Kindergarten

• Aligned educational strategies within and across grades, including:

 – Aligned standards, sequenced curriculum, instruction, and assessments

 – Well-rounded curriculum, including literacy, math, arts, physical education, social and emotional learning and science

 – Regular joint planning and shared professional development among all PreK, Kindergarten, and 1st–3rd grade teachers and staff

• Principal leadership to support joint professional development and teacher collaboration around PreK-3rd curriculum and instruction

• Family engagement focused on supporting what children learn in school and on promoting a Dual-Generation strategy

Introduction

The growing movement to strengthen PreK-3rd education as an essential foundation for student success, along with the rapid expansion in public funding for PreK, has created an urgent need to measure children's educational progress, in a continuous fashion, from the beginning of PreK through Grade Three.

Currently, some state governments are building longitudinal data systems that aim to:

- Provide information on teachers and programs;

- Identify students who would benefit from intervention and other services;

- Evaluate programs, schools, principals, and teachers;

- Inform local and state policy decisions.

(Bornfreund and Severns, 2010)

These efforts have been implemented, in large part, with federal investments from the U.S. Department of Education's Institute of Education Sciences and the American Recovery and Reinvestment Act of 2009 (Data Quality Campaign, 2011 (a, b, & c); Jennifer Cohen, 2010).

Most data system development efforts, however, focus on K-12, with little or no attention paid to PreK education. It is essential that PreK data be included in state longitudinal data systems, because this is the only way in which it will be possible to analyze how the PreK experiences children have (or have not had) are related to later achievement in K-12 and beyond. But incorporating PreK poses difficult challenges. PreK education is provided by a wide variety of sources with varying funding mechanisms, making data collection and integration difficult. Furthermore, little systematic attention has focused on defining the kinds of information specific stakeholders—policymakers, school districts, schools, principals, teachers, and parents—need, or on developing electronic access to that information. Finally, data collection is complicated by high rates of student mobility within and across state lines, which has not been addressed in the development of these data systems.

Building on the work of the Data Quality Campaign (2011b), this brief recommends that the federal government convene a national advisory group, made up of policymakers, educators, researchers, and technical experts to develop guidelines

that will help states create longitudinal data systems for PreK-3rd Grade. The group should help states in three key areas:

- Fully integrating PreK data from both public and private programs into state longitudinal data systems;

- Designing and implementing three distinct "electronic gateways" or "portals" to make appropriate levels and types of information available to a variety of stakeholders; and

- Revising laws and regulations to maintain student confidentiality while ensuring easy and timely access to information.

(For related discussions and recommendations, see Data Quality Campaign, 2005; Council of Chief State School Officers, 2009; Gruendel, 2009; Guernsey, 2010; The Early Childhood DATA Collaborative, 2010a, 2010b; Demma, 2010; Bruner, 2010; The NAESP Foundation Task Force on Early Learning, 2011).

Barriers to Creating State Longitudinal Data Systems

States attempting to create longitudinal data systems face several challenges:

1. **Fragmented PreK delivery.** Sources of PreK education include state- and locally funded public school programs, federally funded early education programs like Head Start and Even Start, private childcare providers, and more, all with differing funding mechanisms and accountability requirements.

2. **Lack of definition of data needed, and lack of development of electronic access to the data.** There has been no agreement on what information specific stakeholders need, or on developing access to that information.

3. **High rates of mobility and transiency of PreK students.** Parents of young children move within, and across, state lines making data collection difficult.

4. **Limited existing assessment data.** Collection of child assessment data for PreK-3rd is limited and haphazard. For example, only a few states require statewide assessments in Grades K-2, and childcare programs typically do not require any assessments.

5. **Lack of usability of the data.** Even states that do compile data for both PreK and K-12 store the data in separate data systems, making longitudinal analyses difficult, costly, and time-consuming.

6. **Confidentiality concerns.** Student confidentiality must be carefully maintained and student-specific data made available only on a very strict need-to-know basis.

Recommendation 1: Start at the beginning by integrating PreK data into state longitudinal data systems.

High-quality early education programs have been found to be cost-effective and beneficial, resulting in positive long-term educational outcomes and subsequent adult outcomes (Lynch, 2004; Haskins and Rouse, 2005; Heckman and Masterov, 2007; Reynolds, Temple, White, Ou, and Robertson, 2011). As PreK programs become an increasingly essential part of state education systems, the need to align standards, curricula, instruction, and assessments across the PreK-3rd Grade years is growing. This involves joint planning and shared professional development among all PreK, Kindergarten, and Grades One to Three teachers and staff, as well as leadership by principals to support joint professional development around standards, curriculum, instruction, and assessment (Mead, 2011).

To assess the effectiveness of specific PreK programs and to track progress in creating integrated PreK-3rd systems, it is critical that state longitudinal data systems include data on the educational experiences of all children from PreK onward. Creating a fully integrated PreK-12 database is an essential first step in assessing children's early educational experiences and the impact of early education on later school success. Data collection should begin as children enter PreK, and continue to be compiled through PreK, Kindergarten, and the early years of elementary school – all in one integrated data system (see Recommendation 9 of The NAESP Foundation Task Force on Early Learning, 2011). This electronic "education data warehouse" should include data on the children; early learning programs and program quality; and characteristics of the early childhood workforce, collected from both public PreK programs and private programs funded by public sources.

 Gathering this data will not be an easy task, for several reasons. The range of PreK providers is extremely diverse, including school districts, for-profit, not-for-profit, faith-based, and home-based childcare providers. Moreover, children are often moved between programs, and frequently participate in multiple programs or a single program funded by multiple sources.

PreK education is also funded through diverse mechanisms with varying accountability standards. For example, early education or childcare programs with federal support and administered by states include Even Start through the U.S. Office of Elementary and Secondary Education, and Head Start, Early Head Start, Child Care, and TANF programs through the Administration for Children and Families in the U.S. Department of Health and Human Services (Harbin, Rous, and McLean, 2004). State programs are also based, in part, on federal programs. The result is that school districts may need to provide information in response to different sets of federal, state, and local reporting requirements, leading to inconsistent educational practices and involving resources that might be better used in the provision of education to children rather than meeting different reporting requirements.

These challenges point to the need for a coordinated state and federal effort to create a single data system for PreK education, which can then be linked to the K-12 data system.

Collection of child assessment data for the PreK-3rd years currently is limited and uncoordinated. All Offices of Special Education Programs (OSEP) must assess children and report data on three functional outcomes, but childcare programs typically do not require any assessments, and Head Start has a framework of learning outcomes but no consistent assessment approach. Only a few states administer statewide student assessments in K-2.

Florida, for instance, is a leader in compiling information for both the PreK and K-12 years, but this information is currently archived in two separate data systems, making it difficult, costly, and time-consuming to conduct analyses across the PreK-3rd years. That analysis would be easy, however, if the data were archived in a single integrated longitudinal data system from the outset.

These challenges point to the need for a coordinated state and federal effort to create a single data system for PreK education, which can then be linked to the K-12 data system. Without such an integrated data system, it is not possible to systematically compare children's PreK experiences and assess how these experiences influence their subsequent educational progress.

Information Portals for Researchers and Evaluators, Parents and Teachers, Schools and Policymakers

This Policy to Action Brief recommends that state longitudinal data systems create three electronic "gateways" or "portals" to make the information accessible to diverse stakeholders.

- A **Microdata Portal** to meet research and evaluation needs. This portal would provide electronic access to microdata, that is, to raw data for a large number of individual students, but without individual student identifiers, allowing researchers and evaluators to conduct statistical analyses and create system-indicators and student-indicators.

- A **System-Indicators Portal** to meet the needs of parents, teachers, schools, and policymakers for the evaluation and continuous improvement of schools. This portal would provide electronic access to aggregated indicators developed by researchers and evaluators related to the effectiveness of curricula, teachers, and schools.

- A **Student-Indicators Portal** to meet the needs of teachers, principals, and parents to assess the progress of their individual students. This portal would provide electronic access to student-indicators measuring the skills of specific students only to those people with immediate responsibility for the education of the student.

Recommendation 2: Create a microdata portal to meet PreK-12 research and evaluation needs.

After a state creates an education data warehouse where all relevant data have been compiled, the next step is to transform these raw data into useful information. This is the task of researchers and evaluators, who use sophisticated research designs, measurement methods, and statistical procedures to conduct studies that develop scientifically valid indicators—statistical values or measurements—and findings relevant to a variety of audiences.

To conduct these studies, researchers and evaluators must have access to microdata files with information on individual students for the entire PreK-3rd period. This should include data on each child's student assessments, attendance, teachers, and schools, as well as information from other administrative records systems, including demographics, health care providers, and participation in special education, free and reduced price lunch programs, or programs such as child welfare, TANF, and SNAP. (Data Quality Campaign, 2011c; The Early Childhood Data Collaborative, 2011).

These data would provide the capacity and opportunity for a range of additional, valuable analyses and reports. For example, the data could be used to report on demographic trends, such as an increase in immigrant families with young children; to track achievement disparities for subgroups of young children; to analyze the influence of different sequences or mixes of early childhood and K-3 learning environments, or to study the impact of family engagement on young children's early learning.

Further recommendation for national advisory group:

The national advisory group should develop detailed guidelines regarding the full range of content to be included in state longitudinal data systems and available through the microdata portal. The group also should develop guidelines on the structure and format of the microdata with particular attention to the need for all data to be included in a single, integrated dataset. Simply creating the capacity to link data from various sources or years is insufficient. The data must be organized with individual students as the unit of analysis and with all data for that student on the individual record, including data about the child's classrooms, teachers, schools, and family. KIDS Integrated Data System (2011) provides an example of a fully functional integrated data system, including data from a wide range of programs and agencies, in the Philadelphia metropolitan area.

Recommendation 3: Create a system-indicators portal for decision-making by parents, schools, and policymakers.

Parents, teachers, principals, school districts, and other policymakers who need information for program- and system-level decision-making would benefit from scientifically designed and developed "system-indicators" — aggregated measures, developed by researchers and evaluators in collaboration with educators — rather than "raw statistics" or microdata. (See recommendation 10 of The NAESP Foundation Task Force on Early Learning, 2011).[i]

To illustrate the superiority of system-indicators over raw data: Simply measuring the average increase in students' knowledge and skills is not a sound education evaluation procedure, any more than calculating the death rate for patients treated by a particular physician is a sound health care system evaluation procedure. In medicine, this approach can lead to incorrect conclusions about the quality of care provided by the physician, because of a variety of variables in patients. Similarly, without taking into account students' differences in social, economic, and family circumstances that can profoundly influence their learning, or the variations in the quality of educational materials and other resources available to particular schools or teachers, incorrect conclusions can be drawn.

[i]Recommendation 10 is "Evaluate models of early learning integration and alignment through research."

Well-designed indicators are required for accurate evaluations of specific teaching methods, alternative curricula, professional development strategies, and schools. These system-indicators are useful for continuous improvement efforts, such as reporting trends in the quality of early learning opportunities and outcomes, and identifying unusually effective PreK-3rd efforts, including approaches that show the most promise in preventing or closing achievement gaps for children at risk of low achievement. These indicators can also be valuable to teams of PreK-3rd administrators, staff developers, and teachers drawn from the full range of PreK-3rd grades to study how children are progressing, and to design PreK-3rd instructional strategies in professional development meetings for targeting needs for aligned professional development.

System-indicators can be made available through a system-indicators portal in formats ranging from comprehensive written reports to descriptive tables presenting specific indicators with interpretive text. Since parents, teachers, principals, and school districts have overlapping but distinct information needs, the system-indicators portal can be designed to make only relevant indicators available to particular groups.

Further recommendation for national advisory group:

The national advisory group should develop guidelines regarding the structure and format for system-indicators. This will involve defining "pre-populated" tables, and it also could involve the development of a system for creating special user-defined tables. Both approaches have been developed and refined over the years by the U.S. Census Bureau to provide Population Census results to the public. The advisory group should explore these and other models to develop guidelines that will ensure easy access to information in a timely fashion.

Recommendation 4: Create a student-indicators portal for instructional planning by teachers, principals, and parents.

Teachers, principals, and parents routinely rely on indicators of student skills and achievement to provide feedback on individual students' progress and as the basis for adapting the educational experience to the needs of particular students (See recommendation 8 of The NAESP Foundation Task Force on Early Learning, 2011).[ii] One example is a specific assessment tool designed by test development experts and administered by individual teachers or schools. These assessments provide immediate information regarding specific students' skills, strengths, weaknesses, and challenges.

Giving PreK-3rd teachers ready access to a more complete longitudinal record of their students' early childhood program experiences, early learning, and development through a student-indicators portal would strengthen their understanding and help them meet their students' needs by crafting learning opportunities to help them progress. With a more comprehensive data system, teachers in communities with high rates of family mobility could more quickly become prepared to work with students who enter at different points in the year, and reduce the risk of those children falling through the cracks.

Further recommendation for national advisory group:

The national advisory group should develop guidelines regarding the types of information needed, or not needed, by principals, teachers, and parents. For example, parents will require specific types of information only for their own children, while teachers will need access to a broader array of information for each of their students, and principals will need access to information for all students in the school.

[ii]Recommendation 8 is "Develop and administer age-appropriate assessments that include both formative and summative evaluations to help guide teaching and learning and to inform program effectiveness."

Recommendation 5: Maintain confidentiality while ensuring easy and timely access.

The national advisory group should develop guidelines on the methods and procedures by which various audiences can access data through each of the three portals in a way that ensures the confidentiality of students, teachers, and schools. Systems that could serve as a starting-point for developing these methods and procedures for the microdata gateway are those of the Adolescent Health Survey, the National Longitudinal Survey of Youth, the Inter-University Consortium for Political and Social Research, and U.S. Census Bureau. It will be important to develop an approach that maximizes each audience's access to the data while also assuring confidentiality. To that end, procedures should allow researchers to analyze data, under strict controls, at their home institutions.

The federal and state legislation, regulations, rules, and procedures that are currently in place to ensure confidentiality represent a patchwork of fragmented and inconsistent approaches. This fragmentation poses a serious barrier to creating integrated and comprehensive longitudinal data systems.

Further recommendation for national advisory group:

To address this inconsistency, the group should develop guidelines for safeguarding the confidentiality of the data, and for creating common standards to ensure confidentiality among the currently fragmented legislation, regulations, rules, and procedures. Data should also be easily available in a timely fashion to researchers, evaluators, teachers, principals, school districts, other policymakers, and parents.

Challenges to Compiling State and School District Statistics on PreK Funding from Federal and State Sources

The Federal Education Budget Project (FEBP) houses the most comprehensive, publicly available database on education funding, demographics, and achievement covering K-12 and higher education. In April 2011, the New America Foundation received a grant from the Foundation for Child Development to explore the feasibility of expanding the FEBP to include data on PreK for children ages three to four. The study's findings illustrate the magnitude of challenges confronting states as they seek to compile PreK data that would be included in state longitudinal data systems.

- Enrollment data for state-funded PreK are available for only 27 states, and PreK funding data are available from only 20 states. More specifically, although data are plentiful on state PreK programs at the school-district level, data are not available on the many PreK programs that are funded and operated by community-based organizations in addition to or instead of school districts.

- Data on total funding for state PreK programs are available, but some of the data do not clearly identify the various sources of funding (local, state, federal).

- Some duplication in enrollment tallies exists, leading to overestimates of the proportion of children who are enrolled.

- Data do not capture the full extent of PreK in a given state, because many districts operate their own PreK programs in addition to a formal state program, and states have the option of using funds from other federal and state sources to fund PreK programs, but these are not included in available statistics.

The New America Foundation also attempted to collect district-level funding and enrollment data for IDEA Part B, Section 619, the federal special education program that services children ages three to five. For IDEA 619, enrollment data are available from 38 states, and funding data are available from 49 states. However, in four states the funds were pooled among several school districts. Also, many states mask (do not report) child counts in districts when the number of PreK children is lower than a specified threshold, and while data are available for children ages three to five, the data generally do not classify children by grade: some children age five have already started Kindergarten, thus skewing the data.

Local-level Head Start data are available from more than 1,400 recipients of Head Start funding. But because approximately two-thirds of Head Start grantees are community-based organizations rather than school districts, much of the data cannot be compiled and reported.

The New America Foundation also contacted Title I coordinators in every state to inquire about the existence of data for school districts using Title I funds for PreK. Under Title I regulations, states are not required to collect data on the amount of Title I funds used to provide PreK. The survey found that officials in many states were surprised to discover that their state did not have such information available. Only five states were able to provide these numbers, and officials in these states cautioned that data are self-reported by local school districts and may be unreliable for various reasons. It also is unclear whether Title I funds are used to supplement state PreK programs, or for locally operated programs, including ones which are of too low quality to be recognized as a PreK program. Moreover, enrollment figures for Title I-funded PreK are not available in a single state.

The challenges in collecting PreK enrollment and expenditure data for specific states and school districts, that is, data which are simple counts of numbers of students and dollars spent, point to even greater challenges when the data pertain to student assessments, or the quality and effectiveness of teaching methods, curricula, teachers, professional development strategies, and schools.

Conclusion

This Policy to Action Brief recommends that the federal government convene a national advisory group to develop guidelines that will assist states in developing fully integrated PreK-12 longitudinal data systems, a critical first step to assessing children's early education experiences and the impact of early education on later school success. Five additional recommendations describe key topics that should be addressed by the national advisory group.

The first recommendation points to the need to integrate PreK data fully into state longitudinal data systems currently under development for K-12. Three additional recommendations highlight the need to develop information "gateways" or "portals" that will provide electronic access to different kinds of information needed for specific purposes by key stakeholders: a microdata portal to meet the analysis needs of researchers and evaluators; a system-indicators portal for decision-making by parents, schools, and policymakers; and a student-indicators portal for instructional planning by teachers, principals and parents. The fifth recommendation reflects the need for methods and procedures that maintain confidentiality while ensuring stakeholders easy and timely access to the information.

The promise of PreK to improve educational outcomes is great. This promise will be realized only if researchers and evaluators, teachers and parents, schools and policymakers have access to the information they need to ensure that PreK programs are of high quality and are fully integrated with Kindergarten and Grades 1-3. This requires that PreK-3rd information is also well integrated into PreK-12 longitudinal data system. A national advisory group could speed the development of the data systems needed to achieve these goals.

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Online PreK-3rd Resources

These key materials aim to inform policymakers, educators, researchers, and others about PreK-3rd issues. For more information, visit our Resource Library web page (http://www.fcd-us.org/resources/) which houses all documents relating to FCD's PreK-3rd program.

This document provides direct links to the materials by accessing the FCD web site at: http://www.fcd-us.org/sites/default/files/PreK-3rdResources.pdf. Please return to the web site for updates.

The Case for PreK-3rd

- Ruby Takanishi (2011). Transforming America's Primary Education System for the 21st Century: Integrating K-12 Education with Prekindergarten. *The PreK Debates*
- Ruby Takanishi (2010). PreK-Third Grade: A Paradigm Shift. *Children of 2020: Creating a Better Tomorrow*
- New America Foundation (2010). A Next Social Contract for the Primary Years of Education
- New School Foundation & Foundation for Child Development (2010). PreKindergarten - 3rd Grade: A New Beginning for American Education (Eight-minute video)
- Kristie Kauerz (2010). PreK-3rd: Putting Full-Day Kindergarten in the Middle
- New America Foundation (2009). Fighting Fade-Out Through PreK-3rd Reform (Seven-minute video)
- Rima Shore (2009). The Case for Investing in PreK-3rd Education: Challenging Myths about School Reform
- Foundation for Child Development (2008). America's Vanishing Potential: The Case for PreK-3rd Education

Financing PreK-3rd

- Rima Shore (2009). PreK-3rd: What is the Price Tag?
- Lawrence O. Picus, Allan Odden & Michael Goetz (2009). An Evidence-Based Approach to Estimating the National and State Costs of PreK-3rd

Implementing PreK-3rd

- Paul Nyhan (2011). The Power of PreK-3rd: How a Small Foundation Helped Push Washington State to the Forefront of the PreK-3rd Movement
- Urban Education Institute/University of Chicago (2011). Getting on Track Early for School Success: The STEP Assessment System to Support Effective Instruction (PreK-3rd)
- The NAESP Foundation Task Force On Early Learning (2011) Building and Supporting an Aligned System: A Vision for Transforming Education Across the Pre-K-Grade Three Years
- The University of Chicago Urban Education Institute & the Ounce of Prevention Fund (2010). Working Together to Build a Birth-to-College Approach to Public Education: Forming a Partnership Between the University of Chicago Urban Education Institute and the Ounce of Prevention Fund
- Geoff Marietta (2010). Lessons for PreK-3rd from Montgomery County Public Schools
- Linda Sullivan-Dudzic, Donna K. Gearns, & Kelli Leavell (2010). Making a Difference: 10 Essential Steps to Building a PreK-3 System

Leadership by Educators

- Sara Mead (2011). PreK-3rd:Principals as Crucial Instructional Leaders
- Geoff Marietta (2010). PreK-3rd: How Superintendents Lead Change
- National Association of Elementary School Principals (NAESP) (2006). Principals Lead the Way for PK-3: Early Investment, Strong Alignment, Better Results

Online PreK-3rd Resources

Teacher Preparation/Professional Development

- Advocates for Children of New Jersey (2011). Building Early Learning Leaders: New Jersey's PreK-3rd Leadership Training
- Rima Shore (2010). PreK-3rd: Teacher Quality Matters
- Ruby Takanishi, Kimber Bogard, & Fasaha Traylor (2008). Teacher Education and PK Outcomes: Are We Asking the Right Questions?, *Early Childhood Research Quarterly*
- New America Foundation (2011). Getting in Sync. Revamping the Preparation of Teachers in PreK, Kindergarten and the Early Grades
- New America Foundation (2011). Watching Teachers Work: Using Observation Tools to Promote Effective Teaching in the Early Years and Early Grades

Educating Dual Language Learners (DLLs)

- Geoff Marietta & Elisha Brookover (2011). Effectively Educating PreK-3rd English Language Learners (ELLs) in Montgomery County Public Schools
- Dale Russakoff (2011). PreK-3rd: Raising the Educational Performance of English Language Learners (ELLs)
- Eugene Garcia (2010). Education and Achievement: A Focus on Latino "Immigrant" Children
- Linda M. Espinosa (2008). Challenging Common Myths About Young English Language Learners (English and Chinese translation)
- National Association of Latino Elected and Appointed Officials (NALEO) Educational Fund (2008). Latino Legislative Hearing on Pre-K and the Early Grades
- The National Task Force on Early Childhood Education for Hispanics (2007). Para Nuestros Ninos: Expanding and Improving Early Education for Hispanics

Federal Policy

- New America Foundation (ongoing). The Early Ed Watch Blog
- New America Foundation (2007). Ten New Ideas for Early Education in the NCLB Reauthorization
- Center for Law and Social Policy (2007). Title I and Early Childhood Programs: A Look at Investments in the NCLB Era

State Policy

- Superintendent of Public Instruction (2010). Starting Strong in Washington State: Early Learning Lessons and Success Stories
- Sara Mead (2009). Education Reform Starts Early: Lessons from New Jersey's PreK-3rd Reform
- Linda Jacobsen (2009). On the Cusp in California: How PreK-3rd Strategies Could Improve Education in the Golden State
- National Association of State Boards of Education (NASBE) (2008). Promoting a Pre-K to Three Vision for Early Learning
- Advocates for Children of New Jersey (ACNJ). For a complete listing of state policy briefs visit our website.

School District Policy

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