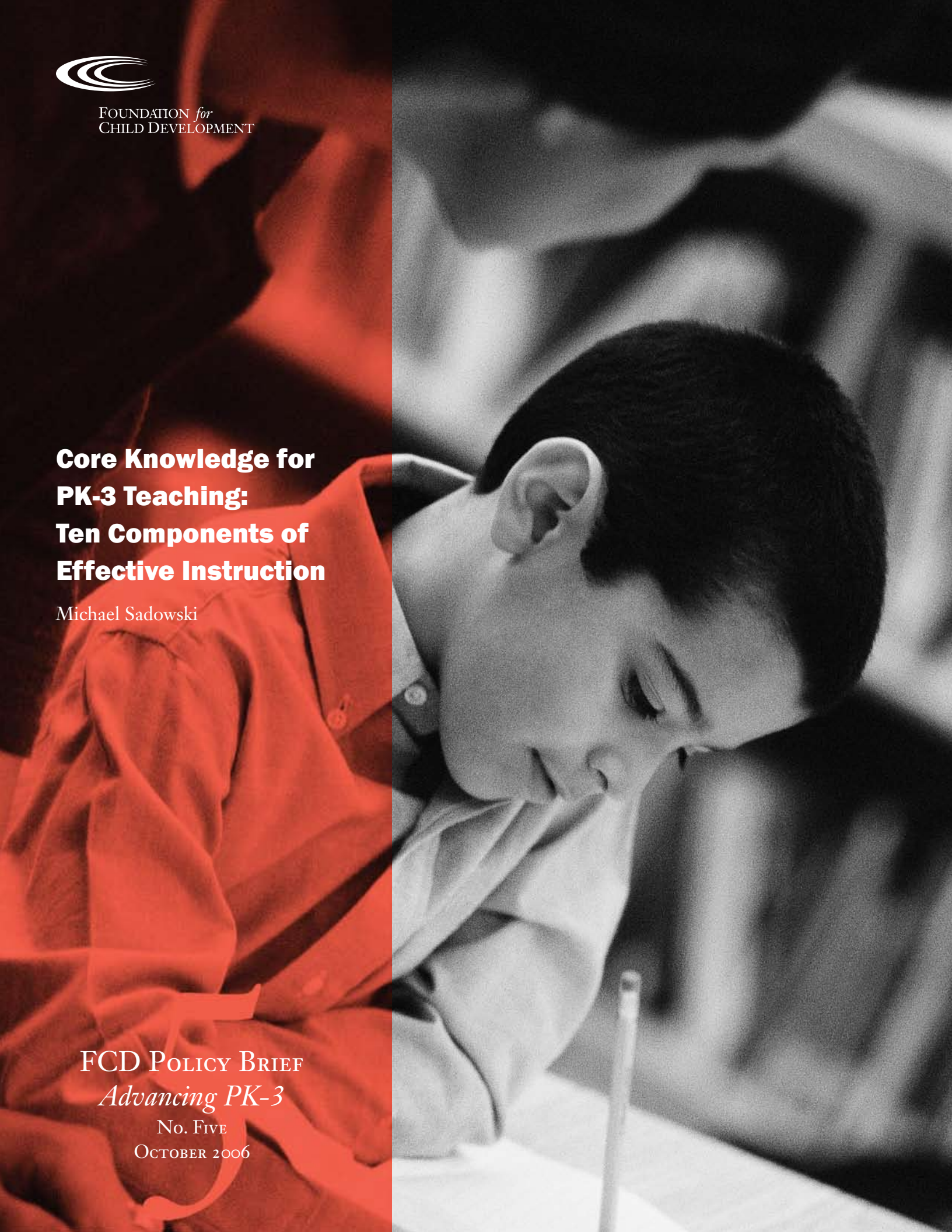

FOUNDATION *for*
CHILD DEVELOPMENT

Core Knowledge for PK-3 Teaching: Ten Components of Effective Instruction

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Advancing PK-3
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Introduction

Laying the groundwork for more complex reading, writing, and mathematical tasks.

Narrowing early socioeconomic gaps in school performance.

Fostering the interpersonal skills that serve as a foundation not only for later schooling, but for success later in life.

Researchers and educators have documented that high-quality early education can accomplish all of these things and more.[1] When the academic demands of school begin to accelerate by around Fourth Grade, children who have had a strong foundation in Prekindergarten through Grade Three (PK-3) are better prepared for success in language arts, mathematics, science, social studies, and other school subjects. As a result, many teachers, school administrators, and policymakers now view PK-3 students as a special segment of the school population, one whose learning needs can only be met by highly trained professionals with a broad knowledge base about early childhood development and a rich repertoire of specialized strategies and subject matter teaching skills.

Drawing on guidelines set forth by national education groups and the research that underlies them, this brief outlines what experts in the field identify as "core knowledge" for high-quality PK-3 teaching in the U.S. — that is, what educators of children from Preschool through Grade Three must know and be able to do in order to be most effective in their work. Rather than a discrete set of competencies, the elements of effective teaching outlined here essentially point to an aligned set of standards, curriculum, instruction, and assessment both within and across developmental levels over the PK-3 continuum.

National Standards for Teacher Excellence

Drawing on research in cognitive science and related areas, as well as observational studies of classroom practice, several national education organizations have published guidelines to inform the work of early educators and to define what thoughtful, high-quality teaching of young children looks like in practice. Though these guidelines vary somewhat in content, the principles underlying them are highly consistent, relying on what numerous studies have demonstrated to be the most critical components of early education.

Beginning in 1990, the National Board for Professional Teaching Standards (NBPTS), which confers voluntary national certification on both primary and secondary teachers in the United States, convened a group of early childhood educators and other experts in the field to spell out the parameters of "accomplished" PK-3 teaching. According to Rebecca A. Palacios, vice-chair of the NBPTS and a longtime Prekindergarten educator, the board's special focus on PK-3 reflects its growing awareness about the importance of these early years, particularly as a foundation for later academic achievement: "What we do in the formative years has a profound effect on children's performance in the upper grades."

The NBPTS PK-3 standards, called the Early Childhood Generalist Standards, were revised in 2000 and have been used as benchmarks for the national certification of more than 9,000 early childhood educators around the country. Broken into areas of "accomplished" teaching practice, the NBPTS standards outline the kinds of competencies PK-3 educators need to teach effectively and provide all young children with the best possible preparation for education following Third Grade. The NBPTS standards, along with standards from the National Association for the Education of Young Children (NAEYC) and examples of relevant research and practice, serve as the basis for the core knowledge framework that follows.[2,3]

Ten Areas of Core Knowledge for PK-3 Educators

1. Knowledge of Child Development

Accomplished PK-3 educators, the NBPTS standards state, "use their knowledge of child development and their relationships with children and families to understand children as individuals and to plan in response to their unique needs and potentials." Put another way, good teachers of PK-3 students *know* and *know about* young children — not just intuitively, but from analytical and scientific perspectives. They understand how learning builds during these crucial early years, and they design instruction to support this building process most effectively for all students, across multiple skill levels.

Early childhood experts recognize that young children's cognitive growth occurs interdependently along with their social, emotional, physical, and linguistic development. For example, research has demonstrated that young children's literacy development and academic achievement are closely connected to their development of prosocial skills, as well as factors such as curiosity and motivation.[4] Understanding how the many aspects of development interrelate as young children grow is a key aspect of the knowledge base for effective PK-3 teaching.

Predictably, several research studies have shown that young children who are educated by teachers with both a bachelor's degree and specialized training in the various aspects of child development gain several advantages that set them up for later school success. These children have better social skills, perform at higher levels on cognitive tasks, and show stronger language development than other children.[5] Debra J. Ackerman of Rutgers University's National Institute for Early Education Research explains what teaching based on knowledge of the many interrelated aspects of child development looks like in practice:

> [H]igh-quality, developmentally appropriate classrooms feature many meaningful interactions between children and teachers and their peers, whether working one-on-one with a teacher or within small-group or large-group activities. Children also have the opportunity to participate in a wide variety of age-appropriate activities, which are responsive to their individual interests, developmental abilities, curiosity, and home language and culture. . . . In sum, good teachers help children build on their emerging understandings and skills by introducing them to new activities and engaging in interactions that are sensitive, responsive, and foster children's social, emotional, and cognitive growth. [6]

2. Methods for Teaching Diverse Children

Few would dispute the notion that all students have the right to attend school in an environment where they feel safe, supported, and able to learn to their full potential. Yet the reality is that some children may be at a disadvantage in certain schools simply by virtue of their culture, their native language, or other factors — unless their teachers are specifically prepared to work with the diversity of learners in their classrooms.

The NBPTS standards call for PK-3 teachers to promote the values of "equity, fairness, and diversity" among students by treating all students fairly and by instilling these same principles in the young children they teach. The best PK-3 teachers recognize that *all* children are different and benefit when they learn to view both their own and their peers' differences as assets, not deficits that need to be erased or overcome.[7]

While student diversity can take on myriad dimensions, it is particularly important for PK-3 teachers to develop competency in working with children from immigrant families and English-language learners (two groups that sometimes, but not always, intersect in U.S. classrooms). According to recent statistics, one in five children in the United States now comes from an immigrant family, and more than 70 percent of these children speak a language other than English at home. In addition, children from immigrant families are now the fastest-growing segment of the U.S. child population.[8] Still, studies have shown that woefully few early educators receive adequate preparation, whether in their pre-service training or on the job, to meet the needs of this changing population. A recent study by researchers at Chicago's Erikson Institute, for example, found that while officials in many college and university early childhood education programs acknowledge the need for graduates to be able to teach linguistically and culturally diverse students, few devote adequate course work hours to such instruction.[9]

In addition, PK-3 teachers must know how to work effectively with students of various skills and abilities, including those identified as having special needs. While most PK-3 teachers are not and cannot be expected to be special education experts, all teachers need to work from a solid knowledge base about the kinds of physical, emotional, and learning differences children might have and employ strategies for working with students of various abilities and skills all within one classroom.

3. Use of Multiple Forms of Assessment

In this era of widespread standardized testing, there is increasing pressure on educators — even at the earliest levels — to "teach to the test," often at the expense of richer forms of assessment that can uncover young children's strengths in more accurate and age-appropriate ways.

Lorrie A. Shepard, a professor of education at the University of Colorado whose research has specialized in the assessment of young children, notes that effective PK-3 teachers use assessment not merely to sort students or gauge ability, but to guide student learning and foster growth across the developmental spectrum. The effective early childhood educator, therefore, knows how to use a variety of assessment strategies as teaching tools in themselves. "For young children, context is everything," Shepard explains. "In the teaching of young children, assessment should nearly always be embedded in the learning experience, as opposed to there being a detachment or separation."

Shepard draws a distinction between "summative assessment," which teachers might use at the end of a week or instructional unit to measure learning, and "formative assessment," which is ongoing and takes place *during* and *as part of* the learning process.[10] "Formative assessment should be dominant in any instructional context, but it is especially important for younger children," notes Shepard.

Both the NBPTS and NAEYC standards highlight the understanding and use of multiple, developmentally appropriate assessment processes as a necessary area of competency for today's PK-3 teachers. More comprehensive approaches to assessment, the NBPTS standards state, help provide teachers with an "unfolding picture of the individual child as a learner and person."

4. Organization of Learning Environments

The NBPTS standards state that accomplished PK-3 educators promote all aspects of child development by "organizing and orchestrating the environment in ways that best facilitate the development and learning of young children." As researchers in early learning have noted, this means knowing how to balance both teacher-directed and student-directed activity, and using play effectively as a means to enhance cognitive, social, and other forms of development, especially for the youngest children. Similarly, the NAEYC standards

emphasize the need for teachers to create learning environments that address the broad range of children's developmental needs.

To support recent efforts to expand access to Prekindergarten for children in the state's low-income communities, the New Jersey Department of Education recently published guidelines for high-quality PK teaching that echo many of the recommendations made by these organizations. While focused specifically on Prekindergarten, New Jersey's guidelines call for a balance of child-initiated and teacher-initiated activities, the incorporation of both small-group and individual activities along with full-class instruction, and the integration of play with learning activities.[11]

5. Curriculum Design That Helps Children Make Connections

Recognizing that learning happens most effectively when children are able to transfer learning from one experience to another, both within and across academic disciplines, the NBPTS standards state that accomplished PK-3 educators "design curriculum to promote skill development in such areas as language, mathematics, science, and the arts, integrating learning across disciplines and around key concepts and essential questions."

Early childhood education researcher Sue Bredekamp explains what curriculum integration, which numerous studies have found to be effective in fostering children's transfer of knowledge and skills, can look like in practice:

> The curriculum is integrated so that learning occurs primarily through projects, learning centers, and playful activities that reflect current interests of children. For example, a social studies project such as building and operating a store or science project such as furnishing and caring for an aquarium provide focused opportunities for children to plan, dictate, and/or write their plans (using invented and teacher-taught spelling), to draw and write about their activity, to discuss what they are doing, to read nonfiction books for needed information, to work cooperatively with other children, to learn facts in meaningful context, and to enjoy learning.[12]

6. Strategic Use of Resources and Technologies

As important as it is for PK-3 teachers to know how to build content-rich curriculum that enables children to make

Ten Components of Effective PK-3 Instruction

1. Knowledge of Child Development
2. Methods for Teaching Diverse Children
3. Use of Multiple Forms of Assessment
4. Organization of Learning Environments
5. Curriculum Design That Helps Children Make Connections
6. Strategic Use of Resources and Technologies
7. Parent and Family Outreach
8. Professional Collaboration and Development
9. Reflection for Enhanced Teaching
10. Vertical Alignment

connections within and across disciplines, it is also necessary for educators to know how to use the resources available to bring that curriculum to life. Like all aspects of technology, the technological resources available for teaching are always changing. More traditional resources such as books, magazines, and games are also in a constant state of flux, as new materials become available and older materials are revised and updated. Yet simply knowing what resources are available is not enough; the best teachers know how to use resources to help them achieve their learning goals for their students.

7. Parent and Family Outreach

Both the NBPTS and NAEYC standards stress the importance of parents and families as crucial allies in a child's education. A solid body of research points to the fact that when families and schools work together, the benefits to student learning are multiplied.

In a recent review of studies by the Harvard Family Research Project, Heather Weiss, Margaret Caspe, and M. Elena Lopez note that parent involvement in schooling has been shown to have strong and long-lasting effects on children's school performance and to benefit the development of their language, self-help, motor, adaptive, and basic school skills.[13] For example, in a study of the Chicago Public Schools' Child-Parent Centers (CPC), a PK-3 program with an extensive parent outreach component, participating children had higher levels of achievement and lower levels of remediation than other students, and their parents were more involved in and had better attitudes about their children's schooling than parents in the control group.[14]

In addition, Weiss, Caspe, and Lopez point to evidence that parent outreach may be especially important during a child's earliest years of schooling, since it sets the stage for later family involvement, which, in turn, is associated with lasting academic benefits. They explain:

> There is growing consensus that both early childhood settings and elementary schools have a responsibility to support families and help them to sustain their family involvement trajectories. . . . [S]chools that provide more opportunities for family involvement and nontraditional contact — such as home visits, parent discussion groups, parent resource rooms, and home lending libraries — enjoy increased levels of family participation.

As both the NBPTS and NAEYC standards illustrate, effective family outreach means more than holding annual parent-teacher conferences or a back-to-school night. It means creating multiple opportunities for family members to be involved, both at home and at school, as well as communicating with a wide range of families, including those who may not speak English at home and those who may face cultural or other barriers to being involved in their children's education.

8. Professional Collaboration and Development

There is wide consensus among early education experts that the best PK-3 educators do more than simply work within the isolated confines of their classrooms. Like all teaching, effective PK-3 teaching requires educators to work in productive collaboration with one another and with others both in their own schools and in the larger professional community. Collaboration among PK-3 teachers, both within and across grades, is necessary to ensure alignment of curriculum content, expectations, and assessment, since children learn best when learning happens continuously. As the NBPTS standards state, "Accomplished early childhood educators are able to work effectively with and assume leadership among supervisors, paraprofessionals, interns, peers, professionals from other disciplines, and volunteers."

The NAEYC also points to professionalism and professional growth as key to effective PK-3 teaching and, like the NBPTS, calls for early childhood educators to participate in professional development on an ongoing basis, rather than remaining static in their knowledge base and teaching approaches. As one of the NAEYC standards aptly puts it, "Continuous, collaborative learning to inform practice is a hallmark of a professional in any field."

Research suggests that the typical U.S. teacher today spends very little time in professional development — one study estimates that teachers, on average, spend less than the equivalent of one day *per school year* in professional growth activities.[15] Yet research has also shown that teachers, both at the early childhood and other levels, are eager for both *more* and *more meaningful* professional development opportunities than are offered in most school systems.[16]

9. Reflection for Enhanced Teaching

Along with the importance of professional growth and development comes the need for PK-3 teachers to reflect on and learn from their practice on an ongoing basis so that they can ultimately improve their work with young children. As stated in the NBPTS standards, the accomplished PK-3 educator knows how to "analyze, synthesize, and refine [her or his] teaching practice" using a variety of processes, which can include:

- Meeting with colleagues regularly to discuss teaching
- Having a working relationship with a teaching mentor
- Keeping a journal
- Conducting classroom-based research, aimed at examining specific teaching practices in order to gauge their effectiveness

10. Vertical Alignment

As comprehensive as the NBPTS standards are, Vice-Chair Rebecca A. Palacios notes that they are an "evolving" document subject to periodic revision and that there are ongoing discussions among the board around other factors that are important to effective PK-3 teaching. For example, while the NBPTS standards explicitly state that it is important for early childhood educators to integrate subject areas *horizontally* within their curriculum, it is equally important, Palacios says, for them to align their instruction and expectations *vertically* across grade levels, thereby providing a continuum of learning from ages three to eight.

The National Association of Elementary School Principals (NAESP) recently conducted case studies in collaboration with the Foundation for Child Development that looked at the PK-elementary continuum in various schools across the country. The case studies demonstrate both the many possible forms vertical alignment can take and the ways it can benefit instruction and student learning:

- At Rolling Hills Elementary School in Orlando, Florida, for example, teachers work to align instruction, teaching strategies, and assessments through a series of meetings that gradually move down through the grade levels. Teachers meet first in grade-level groupings, then with teachers from the previous grade (to discuss what students need to know and be able to do before entering a given grade), moving all the way down to PK.
- Teachers at Cleveland Elementary School in Washington, D.C., design curriculum with the help of an "alignment map," which is also used to illustrate academic expectations across the grade levels to both parents and students.
- At Cottonwood Elementary School in Yakima, Washington, teachers align instruction to focus on the learning of core themes and concepts at increasingly deeper levels. (For example, First Graders may learn about motion while in higher grades the concept is reinforced in lessons on energy.)[17]

Vincent Ferrandino, NAESP's executive director, says vertical alignment is an especially important tool for bridging the often separate worlds of PK and the elementary grades, where children can be held to vastly different expectations and often experience little continuity in their learning: "In many schools, PK and elementary are two different worlds," Ferrandino says. "We need better coordination between those two worlds."

Recommendations

If the research on teaching children from three to eight suggests one thing, it is that teaching today's young children well is no simple task. PK-3 teachers must be able to draw on and continually develop a wide range of skills — but they can't do it alone.

Teacher education programs should ensure that they are providing candidates for early childhood certification with the depth and breadth of knowledge and competencies suggested by the 10 aspects of core knowledge highlighted herein.

State agencies that certify teachers of young children should use these 10 aspects of core knowledge as benchmarks for the certification and recertification of PK-3 teachers. They also should replace certifications that cover unrealistically wide age ranges (such as K-8 or even PK-8) with a PK-3 certification that more appropriately reflects the specialized knowledge and skills required to teach young children effectively.

The federal government should specify the 10 aspects of core knowledge as standards for the teaching of young children, rather than simply denoting teachers with vague or broad qualifications as "highly qualified."

Superintendents and other administrators who make decisions about early education should encourage teachers to work toward these competencies by improving access to professional development, facilitating teacher collaboration toward vertical alignment, and supporting the use of developmentally appropriate curriculum, assessment, and other classroom practices.

Decisionmakers at all levels should do more to recognize PK-3 teaching for the intellectually and professionally demanding job that it is. PK-3 teachers must be given sufficient professional growth opportunities and appropriate compensation — on a par with teachers at other levels — so that the profession can attract the well-educated, caring, and motivated people we need to teach young children.

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Endnotes

[1]For a concise review of some of the research documenting the benefits of high-quality early education, see the Rand Corporation's Research Brief, "Proven Benefits of Early Interventions" at http://rand.org/pubs/research_briefs/RB9145/index1.html. Also see the page "PK-3 Research and Profiles" on the Foundation for Child Development web site at http://www.fcd-us.org/PK3ResearchandProfiles.html

[2]NBPTS Early Childhood Generalist Standards, Second Edition: For Teachers of Students Ages 3-8. National Board for Professional Teaching Standards, 2000. Available at http://www.nbpts.org/the_standards/standards_by_cert?ID=17&x=60&y=11

[3]NAEYC Standards for Early Childhood Professional Preparation. National Association for the Education of Young Children, 1996.

[4]See Sarah B. Miles and Deborah Stipek, "Contemporaneous and Longitudinal Associations between Social Behavior and Literacy Achievement in a Sample of Low-Income Elementary School Children." *Child Development* 77, no. 1, 103-117.

[5]Findings synthesized in Carrie Lobman, Sharon Ryan, and Jill McLaughlin, "Reconstructing Teacher Education to Prepare Qualified Preschool Teachers: Lessons from New Jersey." *Early Childhood Research and Practice* 7, no. 2.

[6]Debra J. Ackerman, "Getting Teachers from Here to There: Examining Issues Related to an Early Care and Education Teacher Policy." *Early Childhood Research and Practice* 7, no. 1.

[7]For a discussion of how early childhood educators can view cultural and language differences as assets instead of deficits, see Evangeline Harris Stefanakis, "Assessing Young Immigrant Students: Are We Finding Their Strengths?" In Michael Sadowski (Ed.), T*eaching Immigrant and Second-Language Students: Strategies for Success*. Cambridge, MA: Harvard Education Press, 2004.

[8]See Donald J. Hernandez, "Demographic Change and the Life Circumstances of Immigrant Families." *The Future of Children 14*, no. 2.

[9]See Aisha Ray, Barbara Bowman, and Jean Robbins, "Preparing Early Childhood Educators to Successfully Educate *All* Children: The Contribution of Four-Year Undergraduate Teacher Preparation Programs." Report to the Foundation for Child Development. Chicago, IL: Erikson Institute, April 2006.

[10]See Lorrie Shepard, Karen Hammerness, Linda Darling-Hammond, Frances Rust, et al., "Assessment." In Linda Darling-Hammond and John Bransford (Eds.), *Preparing Teachers for a Changing World*. San Francisco: Jossey-Bass, 2005.

[11]New Jersey Department of Education, Office of Early Childhood Education, Abbott Preschool Program Implementation Guidelines, 2002 (Revised 2005).

[12]Sue Bredekamp (Ed.), *Developmentally Appropriate Practice in Early Childhood Programs Serving Children from Birth through Age 8*. Washington, DC: National Association for the Education of Young Children, 1990.

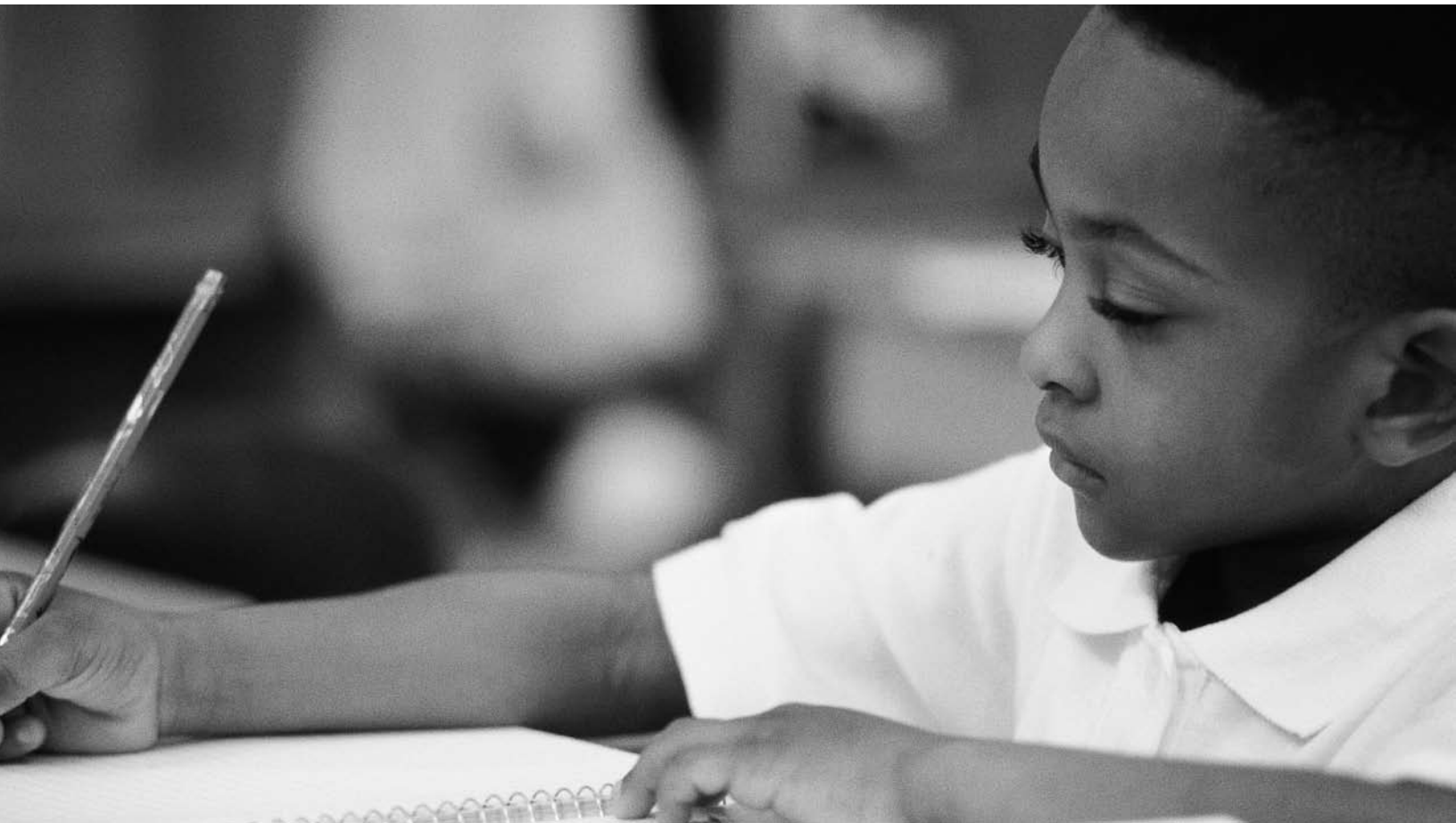
[13]Heather Weiss, Margaret Caspe, and M. Elena Lopez. "Family Involvement Makes a Difference," Research Brief No. 1. Harvard Family Research Project, Spring 2006.

[14]For more information about research on Chicago's Child-Parent Centers, see Arthur Reynolds, "Promoting Well Being in Children and Youth: Findings from the Chicago Longitudinal Study." *Children and Youth Services Review 26*, No. 1 (whole issue), 2004.

[15]Jean McRobbie, "Career-Long Teacher Development: Policies That Make Sense," Knowledge Brief. San Francisco, CA: WestEd, 2000. Available at http://www.wested.org/online_pubs/teacher_dev/TeacherDev.pdf

[16]U.S. Department of Education. *Report on the State of Education in the United States*, 2000.

[17]National Association of Elementary School Principals and Foundation for Child Development, "Principals Lead the Way for PK-3: Early Investment, Strong Alignment, Better Results." Available at http://www.naesp.org/ContentLoad.do?contentId=1928



What is PK-3?

The years from Prekindergarten through Third Grade are critical to a child's development. By the end of Third Grade, children should be confident that they have the skills and resources to succeed in Fourth Grade and beyond. They must be able to communicate in words and numbers, solve problems, do well on tests, and work productively with others. PK-3 educators align standards, curriculum, instruction and assessment both within and across grades from Prekindergarten through Third Grade. To achieve this alignment, PK-3 education integrates the subject-matter focus of K-3 with the child development focus of early education.

For more information on PK-3, see these publications on the FCD web site (www.fcd-us.org).

PK-3: What Is It and How Do We Know It Works?

This FCD Policy Brief describes the five components of PK-3 based on analyses of data from longitudinal research. Components of a coherent PK-3 approach include alignment, school organization, qualified teachers, classrooms as learning environments, and accountability. The brief makes recommendations about what state departments of education and local school boards and districts can do to incorporate a PK-3 approach into existing programs.

PK-3 and School Achievement

n a Commentary published in *Education Week*, Gene Maeroff, author of *Building Blocks: Making Children Successful in the Early Years of School*, looks at the first level of education—a period beginning with Prekindergarten and continuing through 3rd grade—as a key to boosting academic achievement.

PK-3 Education: Programs and Practices that Work in Children's First Decade

Using data from the Early Childhood Longitudinal Study-Kindergarten Cohort of 1998-99 (ECLS-K), Arthur Reynolds, Katherine Magnuson, and Suh-Ruu Ou show that children participating in educational programs that include PK-3 components perform better in school than their peers who do not. The authors conclude that a critical mass of evidence in support of PK-3 now exists.

Closing the Achievement Gap Through PK-3

The New America Foundation's Early Education Initiative Issue Brief #3 summarizes research on the benefits of PK and of PK-3. It also makes specific recommendations on what the federal government can do to support a PK-3 approach.

Ladders of Learning: Fighting Fade-Out by Advancing PK-3 Alignment

Kristie Kauerz argues that alignment of standards, curriculum and assessment from Prekindergarten through Third Grade can reduce fade-out and improve academic achievement. This New America Foundation brief discusses three types of alignment: horizontal, vertical and temporal.

Early Academic Achievement of Hispanics in the United States: Implications for Teacher Preparation.

This paper from the National Task Force on Early Childhood Education for Hispanics focuses on Hispanic children from infancy through Third Grade and the educational qualifications required of their teachers to support their learning and development.

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