

THE  
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## A Matter of Degrees: Preparing Teachers for the Pre-K Classroom

Education Reform Series  
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**T**eacher effectiveness is among the most important factors impacting the quality of pre-kindergarten programs. When teachers hold a bachelor's degree and have specialized training in early childhood education, they are better able to support children's healthy development and school readiness. State and federal leaders should implement policies to require and encourage a higher level of pre-k teacher preparation and provide support systems that help educators attain advanced qualifications.

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**Education Reform Series**

High-quality pre-kindergarten is the first step in education reform. A vast body of research demonstrates that early learning programs develop children's cognitive, social-emotional and physical readiness for success in school. This solid foundation is proven to contribute to higher literacy and math attainment, lower grade retention, reduced remedial and special education needs and increased high school graduation rates.

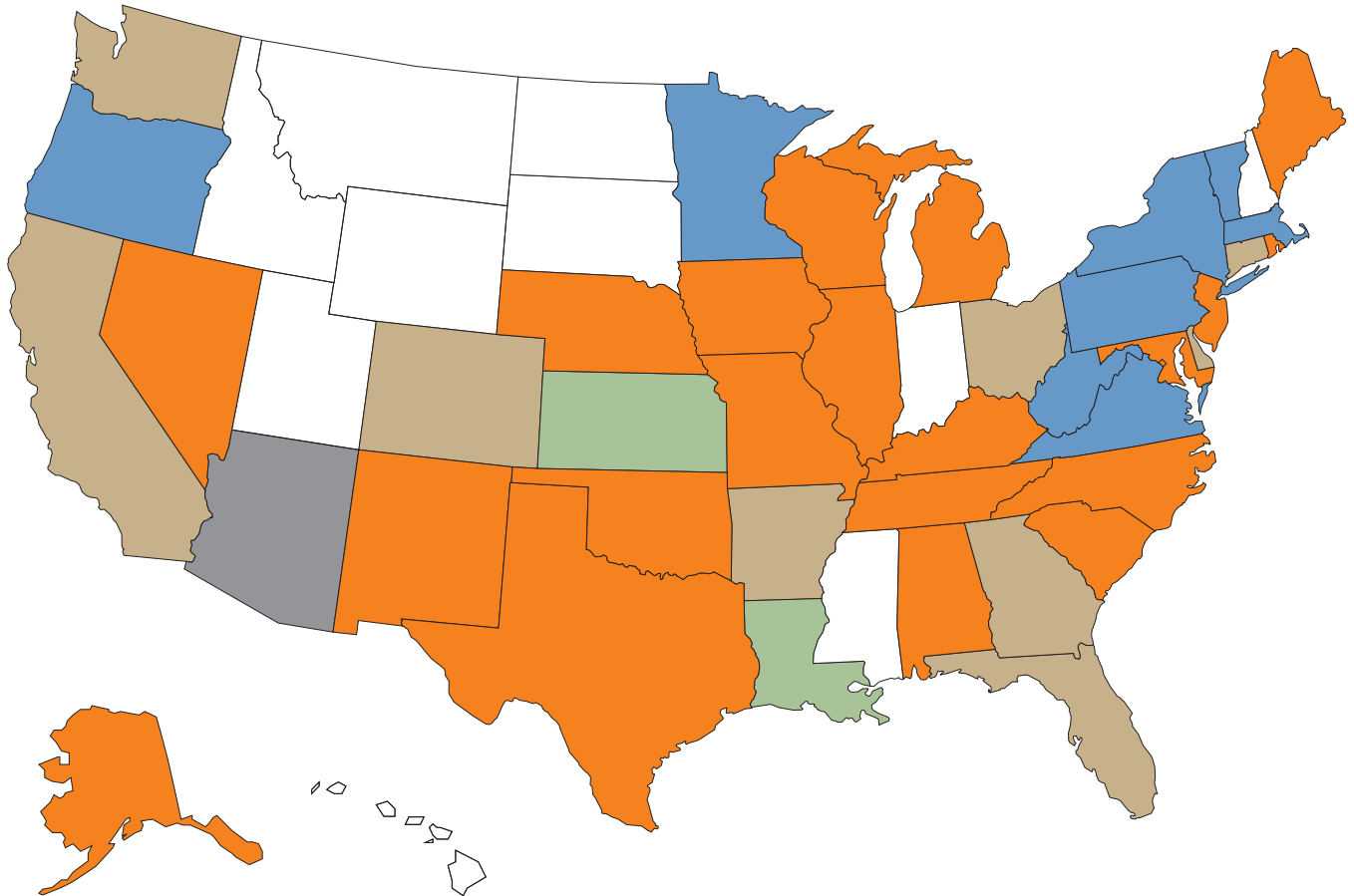
When students have a high-quality pre-k experience, they are better prepared and motivated to achieve at higher levels, multiplying the impact of other reforms. The alternative – helping children catch up in later grades – is both more costly and less effective. The evidence is clear and compelling: Successful school improvement plans, like a child's development, benefit most from investments made in the critical early years.

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## Minimum Educational Requirements for Lead Teachers in State-Funded Pre-K



- Bachelor's degree with training or certification in early childhood education
- Bachelor's degree with training or certification in early childhood education in certain settings only
- Bachelor's degree without training or certification in early childhood education
- Training or certification in early childhood education
- High school diploma
- No state-funded pre-k program

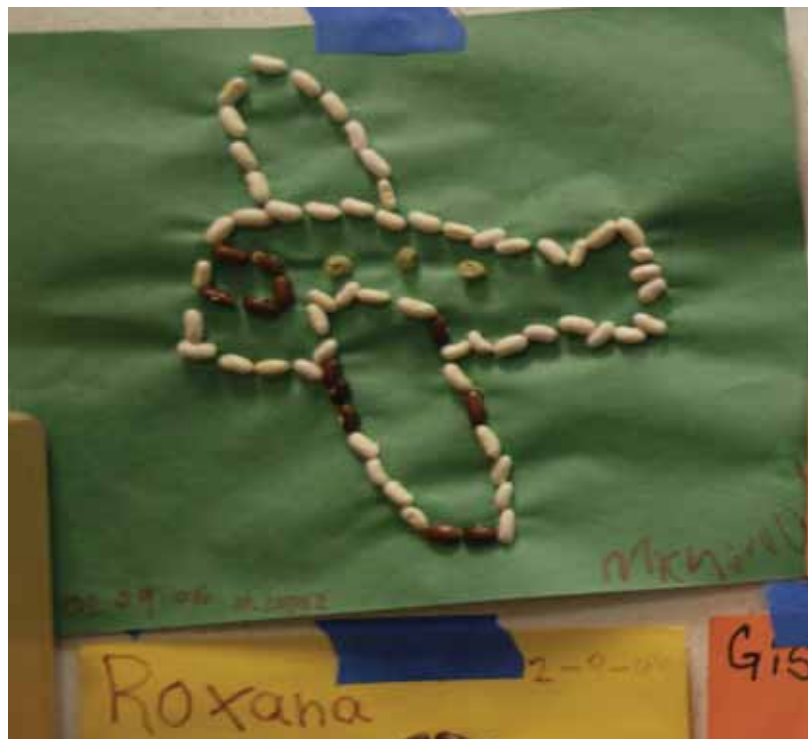
Sources: W. Steven Barnett et al., "The State of Preschool: 2008 State Preschool Yearbook," (New Brunswick: National Institute for Early Education Research, Rutgers, The State University of New Jersey, 2009); Jennifer D. Jordan, "R.I. To Offer Its First Public Pre-K Program," *projo.com* (2009), [http://www.projo.com/education/content/early\\_childhood\\_pilot\\_07-27-09\\_30F4FTK\\_v72.3a61c05.html](http://www.projo.com/education/content/early_childhood_pilot_07-27-09_30F4FTK_v72.3a61c05.html); "Request for Applications - Alaska Pilot Pre-Kindergarten Project (AP3)," (Juneau: Alaska Department of Education and Early Development, 2009); Office of Early Childhood Education, "Program Operating Guidelines for the Pre-Kindergarten Enhancement and Expansion Program for Funding Year: 2009-2010," (Washington, DC: Office of the State Superintendent of Education, 2009); Starting at 3, "State Laws - District of Columbia: Teacher Certification/Qualification Standards for Preschool Program," Education Law Center, [http://www.startingat3.org/state\\_laws/statelawsDCdetail.html#TeacherQualifications](http://www.startingat3.org/state_laws/statelawsDCdetail.html#TeacherQualifications).

## Introduction

Across the nation, states are investing substantial dollars in publicly funded, voluntary pre-kindergarten programs. These investments and initiatives come in response to research on brain development,<sup>1</sup> accountability pressures to improve student achievement in elementary and secondary schools and strong evidence that high-quality pre-k can yield long-term benefits for children and society.<sup>2</sup> The ultimate value of those investments, however, depends not only on the legislation that establishes a state pre-k program but also on the policies created to define and support program quality. Among these, none are more directly linked to young children's success than those governing teachers.

The professional qualifications of teachers, both before they enter the classroom and once there, are closely related to the overall quality of early learning programs. Precisely what constitutes optimal preparation among early childhood educators – both for supporting effective teaching for a diverse student population and for encouraging salaries that can attract a stable, high-quality workforce – has been a subject of ongoing debate in the field. One view – that experience with and a deep commitment to young children is the best measure of competency – is being challenged by a growing body of research. Several recent studies indicate that a bachelor's degree and specialized training in early childhood education and development may better prepare teachers to provide high-quality classroom environments and promote academic achievement.<sup>3</sup>

Research indicates that higher levels of education and training can help improve teachers' interactions with children in ways that positively affect learning. Studies suggest that skilled professionals can more effectively promote and support young children's cognitive, social and emotional growth when they know how to capitalize on the period of critical early brain development before age five. Pre-k teachers who have earned bachelor's degrees and have additional, specialized training in early childhood education have generally been found to be more effective than those without these qualifications. In addition to improving the quality of teaching, stronger preparation requirements may help to professionalize the early childhood workforce. The resulting higher pay, in turn, would attract a better-quality workforce, reduce turnover and provide greater incentives toward the ongoing improvement of practice.<sup>4</sup>





Armed with this evidence, a number of states have raised educational requirements for early childhood teachers in order to improve the quality of state pre-k programs. As of 2008, 18 states require pre-k teachers in all settings to have similar qualifications as teachers in public kindergarten classrooms.<sup>5</sup> Further, as of 2005 – the most recent year for which data are available – about 73 percent of teachers in state-funded pre-k programs reported that they had at least a bachelor’s degree, and about 56 percent reported that they held state certifications that include teaching children younger than five years.<sup>6</sup> Similarly, the congressional reauthorization of Head Start in late 2007 included a new requirement that 50 percent of all lead teachers have bachelor’s degrees by 2013.<sup>7</sup> These increased requirements, at both the state and federal levels, reflect policy makers’ belief that teachers with more appropriate training will provide a better learning experience for young children.

This report, “A Matter of Degrees: Preparing Teachers for the Pre-K Classroom,” examines the research on pre-k teacher preparation, children’s learning and program quality. It explores the potential costs and benefits of professionalizing the pre-k workforce, the likely challenges associated with broad increases in preparation standards for early childhood educators and the strategies some states and localities have used to address those challenges. This review indicates that requiring bachelor’s degrees and specialized training for pre-k teachers and supporting the efforts of states, schools, centers and individuals to meet those requirements is likely to raise the quality of the nation’s publicly funded pre-k classrooms and to maximize the positive impacts of early learning programs on young children’s school readiness.



## How Does Teacher Preparation Influence Teacher Effectiveness?

Teacher quality plays one of the most critical roles in determining the effectiveness of early education programs.<sup>8</sup> Studies suggest that pre-k teachers with higher levels of education are more likely than those with less preparation to implement the developmentally appropriate practices linked to better learning among young children.<sup>9</sup> As one study notes, "... evidence suggests that teachers with higher educational levels and specific training in early childhood provide care that is warmer and more sensitive to children's needs and are able to create a more stimulating and language-rich learning environment."<sup>10</sup>

High-quality pre-k programs – including the High/Scope Perry Preschool Program and the Chicago Child-Parent Centers – that were found in longitudinal evaluations to have significant positive effects on students' academic achievement, high school graduation rates and later-life success all employed teachers with at least a bachelor's degree and early childhood certification.<sup>11</sup> Similarly, Tulsa, Oklahoma's pre-k-for-all program, which was found to produce strong gains in children's language and cognitive test scores across all racial, ethnic and socioeconomic backgrounds, also requires that teachers hold a bachelor's degree and have specialized training in early childhood education.<sup>12</sup>

While these studies indicate that education influences teacher effectiveness, questions remain about the specific aspects of teacher training that are related to higher-quality classroom practices and about how those practices lead to better results for children. Policy makers need to know whether the current evidence is strong enough to justify the investments necessary to institute higher educational standards for pre-k teachers, and, if so, what kinds of requirements and supports are most important for developing a quality workforce.

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### What Do Quality Teacher-Child Interactions Look Like?

*The following is based upon observations conducted by one of the authors<sup>a</sup> in a Virginia classroom and demonstrates the approach of a well-trained pre-k teacher.*

Five children sit on the floor in a pre-k classroom: Three are playing together with blocks and cars; two are arguing over who gets to play with the tractor; one child sits apart, reluctant to join in the activity. The pre-k teacher, who has training in developmental psychology, understands how a young child's mind acquires social, emotional and cognitive skills, and she can use that knowledge to capitalize on the situation. The teacher approaches the arguing children, asks them what it feels like when someone takes your toy and reminds them of the story they read that morning about sharing. She stays on the floor at the level of the hesitant child, sits close to him, talks in a quiet, calm voice and then takes the child's hand and leads him into the activity.

The teacher listens to the children with the car and blocks and asks questions that help the children build upon the knowledge they already have. For example, "The man in the car needs to get to the top of the block tower, how can he get there?" This allows the children to think about adding a ramp or a bridge. "How many more blocks do we need?" "What is the difference between a ramp and a bridge?" "Can you describe a ramp you have seen?" All of her actions, from how she approaches the children to the types of questions she asks and feedback she provides, are based on theories learned in her teacher-education program.

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a Classroom observations conducted by Danielle Gonzales at Pine Spring Elementary School in Falls Church, Virginia.

## Should Pre-K Teachers Be Required to Have Both a College Degree and Specialized Training?

### The Benefits of a College Degree

Research suggests that both teachers and parents with higher levels of education expose children to broader vocabularies, fostering the development of better language and literacy skills.<sup>13</sup> As has been found among teachers, research on families has shown a strong relationship between parental education level, parenting practices and children's learning and development.<sup>14</sup> Some researchers argue that this is evidence of a general education effect: i.e. higher levels of education for the teacher or parent lead to better educational results for the child.

Recently, the National Institute for Early Education Research (NIEER) sponsored a meta-analysis of research on the link between completion of a bachelor's degree and early education quality. Taking a broad sample of studies, they found that students whose teachers had higher levels of educational attainment showed greater gains in cognitive, social and emotional development than those taught by teachers with less education. Measures of overall classroom quality and the quality of teacher-child interactions and instructional activities were also higher among more educated teachers – significantly so for teachers with a bachelor's degree – than among those with less education. While some teachers without four-year degrees produced student gains on par with those of some college-educated teachers, the best results were found among teachers who held bachelor's degrees.<sup>15</sup>

### The Benefits of Specialized Early Childhood Training

Many studies have found significant relationships between specialized training in early childhood education and positive results for children.<sup>16</sup> Teachers with specialized training have been found to provide more appropriate direction, build upon children's prior knowledge, “scaffold” – or layer – activities to develop emerging understanding and skills and engage students in activities that are appropriately challenging rather than merely repetitive.<sup>17</sup>

Research demonstrates that teachers with training in early childhood development are better equipped to facilitate young children's language-, cognitive- and social-skills development.<sup>18</sup> They also tend to be warmer, more sensitive and more engaging. These teachers interact with children more positively – by smiling, talking, responding appropriately to requests, playing with verbal language through rhyming and reading aloud and managing behavior in constructive ways – and with greater frequency.<sup>19</sup>

Such teacher behaviors lead to instructional environments and teacher-child relationships that are associated with student gains in learning and social skills. Children, whose teachers actively engage them in communicating and reasoning and create a respectful, encouraging climate, convey enthusiasm for learning and demonstrate the highest gains in skill acquisition. When teachers provide more opportunities to practice higher-order and creative thinking while providing feedback to help students learn, children's language and literacy skills improve significantly.<sup>20</sup>

Additionally, in a 2006 analysis of the National Center for Early Development and Learning's (NCEDL) Multi-State Study of Pre-Kindergarten, a team of researchers examined how teacher education was related to student gains in academic skills and to classroom quality. This analysis found that children taught by teachers with either a Child Development Associate's (CDA) certificate<sup>21</sup> or a bachelor's degree in early childhood education or child development improved more in certain basic skills than children whose teachers did not have specialized training. Pre-k children taught by teachers with a CDA improved more in their ability to rhyme and name letters, numbers and colors than those whose teachers had non-specialized associate's degrees.<sup>22</sup>

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## Should Pre-K Teachers Be Required to Have Both a College Degree and Specialized Training?

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### **The Cumulative Benefits of College Degrees with Specialized Training**

While either a bachelor's degree or specialized training alone can produce better results for children with respect to certain skills, a significant body of research suggests the importance of the interaction between specialized training and overall degree level.<sup>23</sup> For example, one study looked across four levels of teacher education and classroom practices and found that student gains were highest when teachers had bachelor's degrees in early childhood education. These teachers promoted more language acquisition and engaged their students in more creative activities and complex play as compared to teachers without pre-k-focused degrees.<sup>24</sup>

Children whose teachers had a bachelor's degree or higher in early childhood education or child development showed significantly stronger gains in naming colors than their peers whose teachers majored in another type of education.<sup>25</sup> Although the 2006 NCEDL study found that teachers with bachelor's degrees did not produce greater growth in students' language-acquisition skills as compared to teachers with associate's degrees in early childhood education, four years of training was associated with significant gains in children's mathematics skills. The researchers hypothesized that, while both associate's-level and bachelor's-level education programs may provide a focus on literacy skills, four-year programs might offer more education in mathematics that translates into better teaching of related skills. These results, again, suggest that teachers with a bachelor's degree and specialized training in early childhood education are able to support a wider range of skill development.<sup>26</sup>





Similarly, a review of research examining the link between pre-k teacher education and student results concluded that educators with at least a bachelor's degree and specialized training in early childhood provide the best preparation for children entering kindergarten. Evidence shows these well-trained teachers engage in behaviors that support better skills development.<sup>27</sup> The tendency of college-educated pre-k teachers to be more sensitive toward students and more engaged in their behavior<sup>28</sup> has been shown to cultivate the positive teacher-child relationships that significantly improve social development and school readiness.<sup>29</sup>

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Children whose teachers actively engage them in communicating and reasoning and create a respectful, encouraging climate convey enthusiasm for learning and demonstrate the highest gains in skill acquisition.

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### Evaluating Conflicting Research

In 2007, a new analysis was published that considered data from seven studies to evaluate the relationship between teacher education and both classroom quality (using a classroom observation measure) and student performance in math and reading.<sup>a</sup> The researchers found mixed evidence suggesting inconclusive associations between education level (not differentiated by teachers' majors or areas of study) and math and reading achievement.

These mixed findings have raised questions in the field about the nature and rigor of the studies reviewed. For example, one re-analysis of the review notes that the researchers estimated 27 effects on classroom quality and children's learning related to bachelor's degrees, of which 19 were positive. Among the 20 estimated effects on student performance, 16 were positive, suggesting the weight of the evidence is in favor of teachers holding bachelor's degrees.<sup>b</sup> In addition, none of the studies reviewed were specifically designed to investigate the effects of teacher qualifications on children's learning and development, none used randomized trials and

controls were not comprehensive in several cases. Further, not all of the programs examined were pre-k – as opposed to child care – making it difficult to generalize the findings to state early education programs. In fact, in the one large cross-state study focused specifically on pre-k,<sup>c</sup> the bachelor's degree was found to have a significant positive relationship with cognitive measures.

The authors acknowledge that their inconclusive findings could stem from a number of possible inconsistencies. For example, the degrees investigated differ in content and rigor depending on where and in what field a teacher received training. In addition, teacher performance is influenced by the variable contexts in which they work: how settings are managed, what resources are available, whether parents are engaged, how educators are supported and so on.<sup>d</sup> The authors stressed that more research is needed regarding how structural features of teacher training can support more effective teaching and child gains.<sup>e</sup>

- a D.M. Early et al., "Teachers' Education, Classroom Quality, and Young Children's Academic Skills: Results from Seven Studies of Preschool Programs," *Child Development* 78, no. 2 (2007).
- b Pamela Kelley and Gregory Camilli, "The Impact of Teacher Education on Outcomes in Center-Based Early Childhood Education Programs: A Meta-Analysis," in *NIEER Working Papers* (New Brunswick: National Institute for Early Education Research, Rutgers, The State University of New Jersey, 2007).
- c D. Bryant et al., "NCEDL Pre-Kindergarten Study," *early developments* 9, no. 1 (Spring 2005).

- d M. Whitebook, L. Sakai, and C. Howes, "Improving and Sustaining Center Quality: The Role of NAEYC Accreditation and Staff Stability," *Early Education & Development* 15, no. 3 (2004).
- e Early et al., "Teachers' Education, Classroom Quality, and Young Children's Academic Skills: Results from Seven Studies of Preschool Programs.": K. Tout, M. Zaslow, and D. Berry, "Quality and Qualifications: Links between Professional Development and Quality in Early Care and Education Settings," in *Critical Issues in Early Childhood Professional Development*, ed. M. Zaslow and I. Martinez-Beck (Baltimore: Paul H. Brookes, 2005)

## Should Pre-K Teachers Be Required to Have Both a College Degree and Specialized Training?

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### Indirect Benefits of Higher Teacher Education Requirements

In addition to improving students' acquisition of critical skills, some argue that raising educational standards for pre-k teachers in publicly funded programs could have positive, indirect effects on pre-k quality through professionalization of the field. More rigorous levels of preparation could support both higher compensation and easier recruitment of well-qualified individuals who want to make a career in early childhood education. These synergistic effects could, in turn, aid pre-k providers in reducing turnover and improving program quality.

Research on teacher quality and supply in K-12 education tends to support this reasoning. New educators with greater levels of formal preparation are both more effective in the classroom and significantly more likely to stay in teaching.<sup>30</sup> As they gain experience, teachers become even more effective, at least through their first seven to 10 years in the profession. At the same time, schools with lower turnover are better able to improve student achievement. Likewise, higher retention of teachers facilitates stronger teacher-student, teacher-family and teacher-administrator relationships, all of which enhance the quality of interactions and classroom practice.<sup>31</sup>

Teacher retention, like recruitment, depends largely on compensation and working conditions, which can be significant issues in pre-k. Working in an early education classroom often pays less than sorting mail, driving a school bus or giving out parking tickets.<sup>32</sup> As a result of such low wages (often between \$8.00 and \$17.00 per hour<sup>33</sup>) with minimal benefits and little or no incentives to gain more education, early childhood workers are typically considered to be part of the working poor.<sup>34</sup> In a recent study, one-quarter of early childhood teachers and administrators were found to be living on incomes below 200 percent of the federal poverty threshold.<sup>35</sup>



Not surprisingly, turnover among pre-k teaching staff is extraordinarily high – about four times the rate for K-12 teachers – with an average of one-third of the workforce leaving jobs annually.<sup>36</sup> Research has shown that such turnover is detrimental to the quality of pre-k programs, particularly given the influence of the teacher-student bond on healthy development.<sup>37</sup> Public funding for scholarships and professional development are effectively wasted when teachers leave the field.

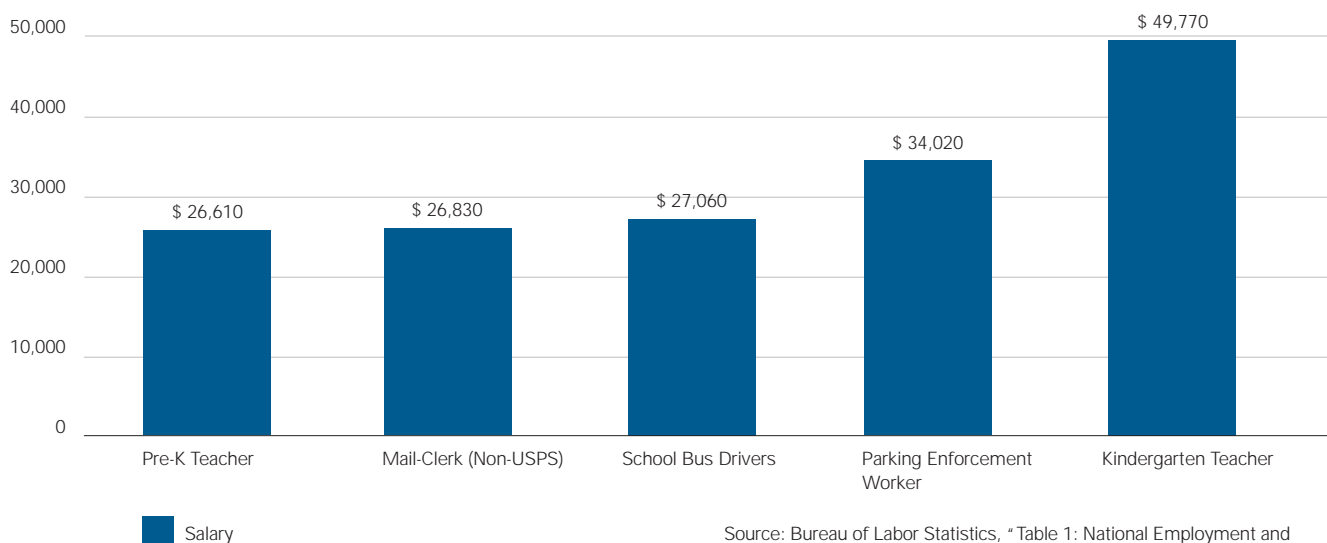
Given the associations between training standards, pay, turnover rates and pre-k quality, tying increased educational requirements to higher wages and benefits is likely to be critical to recruitment and retention.<sup>38</sup> Indeed, evidence suggests that higher pay is associated with increased retention of pre-k teachers in states that have instituted educational requirements.<sup>39</sup>

For instance, the T.E.A.C.H. (Teacher Education and Compensation Helps) Early Childhood Project, a program aimed at improving compensation and retention, guarantees that all educators completing their scholarship program receive either salary increases of 4 percent to 5 percent or a bonus given in installments. During the 2008-09 school year, over 5,000 teachers in North Carolina received scholarships to work towards an associate's or bachelor's degree in early childhood education. After one year, participants in the Early Childhood Bachelor Degree Scholarship Program experienced a salary increase of 12 percent and left center-based jobs at a rate of just 5 percent,<sup>40</sup> as compared to the national turnover average of about 33 percent.<sup>41</sup> The state credited this progress to teachers' participation in T.E.A.C.H. as well as the early childhood salary supplement initiative, Child Care WAGES. This latter program worked in

partnership with center-based pre-k programs to offer financial support to teachers seeking certification, an associate's degree or a bachelor's degree in early childhood education. State funds were appropriated both for the scholarships and to subsidize the increased compensation.<sup>42</sup>

Importantly, low preparation requirements and pay in the pre-k sector also have encouraged the perception that early childhood teaching does not demand a high skill level. This, in turn, has undermined efforts to develop more productive public policy.<sup>43</sup> Raising the education level of the pre-k workforce, many argue, may help change the profession's image from one of menial labor to one demanding advanced skills and knowledge. Such professionalization would be more likely both to require and to garner increased public commitment to pre-k quality.

**Figure 1:**  
Average Pre-K Teacher Salaries Compared to Other Occupations



Source: Bureau of Labor Statistics, "Table 1: National Employment and Wage Data from the Occupational Employment Statistics Survey by Occupation, May 2008," U.S. Department of Labor, <http://www.bls.gov/news.release/ocwage.t01.htm>.

## Raising Preparation Requirements

Understanding the current state of pre-k-teacher qualifications is essential for gaining a sense of the investments needed to ensure that every educator has a bachelor's degree and is appropriately trained to work with young children. It is also necessary to consider the challenges that rigorous preparation requirements would place on higher education systems and on teachers themselves. Workforce surveys and the experiences of states implementing large-scale public pre-k programs suggest that developing the institutional capacity to train a highly diverse pre-k workforce without creating short-term teacher shortages or unduly burdening individual educators requires focused, strategic investments.<sup>44</sup>

### Current Requirements

As state pre-k investments have grown, policy makers have also had to develop and improve program standards. The result has been a divergent array of systems and programs with varying requirements for teacher training. Among the 38 states and the District of Columbia that provided state-funded pre-k in 2008, only 18 and the District required head teachers in those programs to have a bachelor's degree as well as certification in early childhood.<sup>45</sup> Some states, such as Texas, require a four-year degree with generalized primary education certification.<sup>46</sup> This type of training is often designed mainly to meet the needs of elementary school teachers and so may not provide the focused content needed to ensure professional relevance for pre-k teachers. In still other states, pre-k teachers are required to have no more than a CDA, and 10 states have no publicly funded pre-k program.

Several important studies<sup>47</sup> have looked closely at the challenges posed by raising qualification requirements for pre-k teachers. For the purposes of this analysis, the authors provide a brief overview of the major obstacles facing states.

### Capacity-Building Challenges in Higher Education

The ability of the early childhood field to successfully meet higher pre-k teacher-qualification requirements will largely depend on the capacity of the higher education community. In general, the higher education system suffers from shortages in several key areas: course offerings; degree-granting, early childhood development programs and full-time faculty, especially diverse instructors who have experience with a broad range of communities and cultural contexts. Further, most states lack strong program articulation between two- and four-year colleges – the process of comparing classes within a field for transfer – for early childhood degree coursework.<sup>48</sup> Additionally, the content of some courses may not necessarily be applicable to what teachers will need to know and be able to do in their classrooms.<sup>49</sup> Investments in the infrastructure of higher education will be needed if pre-k teacher-training programs are to be comprehensive and high quality.

### Challenges Faced by the Existing Workforce

In addition to the supports needed to help higher education institutions improve the content, quality and efficiency of early childhood programs, teachers themselves are likely to need assistance in order to meet more rigorous educational requirements. According to one study, for example, an average pre-k teacher would need to spend more than one-third of her salary to attain a four-year degree.<sup>50</sup> The tuition costs of a bachelor's degree are an obvious concern as are the opportunity costs of taking time off to complete training while employed full time.



Current early childhood educators are often non-traditional college students with family and work obligations that can make it difficult to complete course requirements. Enrollment in college as an adult, part-time college attendance, full-time work while in college and being a parent are all associated with difficulty in attaining advanced degrees.<sup>51</sup> Many early childhood teachers are also low-income women of color who may encounter linguistic and cultural barriers, lack of resources and time to take courses and limited educational confidence.<sup>52</sup> States must establish policies and systems to accommodate, aid and support these students.

### **Challenges Associated with Serving Diverse Student Populations**

Enrollment rates for immigrant and English language learners (ELLs) have been on the rise. In fact, as of 2005, one in 10 of all students in public schools were classified as ELLs, a 60 percent increase from 1995.<sup>53</sup> Greater access for ELL, low-income and minority children to high-quality pre-k programs is critical to help states improve minority academic achievement and meet student performance mandates under Title I of the federal Elementary and Secondary Education Act.<sup>54</sup> Two rigorous reviews of the existing research by the National Research Council found that using children's first languages in educational activities can have positive impacts on their English skill development and school readiness and can help them learn the academic core curriculum as well.<sup>55</sup> They also concluded that the quality of teacher interactions with ELLs plays a role in students' learning. Specifically, researchers found that how well teachers use the curriculum and the intentionality of their social and instructional interactions with children are more important for improving children's academic performance than is program design (bilingual, English language immersion or first-language classrooms).<sup>56</sup>

Research suggests that current early education staff lack the necessary training to effectively foster development of culturally and linguistically diverse children. For instance, a 2004 survey of early childhood education administrators reported that the shortage of bilingual staff and of training in serving diverse children is one of the most urgent challenges they face.<sup>57</sup>

Additionally, the federal Individuals with Disabilities Education Act (IDEA) guarantees all children with disabilities, including children ages birth to five, a "free appropriate public education to meet each child's unique needs and prepare him or her for further education, employment, and independent living." IDEA provides funds to state and local education agencies to support such individualized education. Currently, fewer than half of all children receiving pre-k through IDEA Part B are placed in regular education classrooms, despite requirements for inclusive settings.<sup>58</sup> If teachers in state pre-k classrooms are to fully include and effectively serve special needs students, they must have specialized training in accommodating diverse learning styles and needs.<sup>59</sup>

The current early childhood education workforce lacks sufficient training in and experience with teaching English language learners and students with special needs.<sup>60</sup> Therefore, more must be done to ensure teachers and staff are trained to communicate and interact effectively with the diverse population of children in their classrooms.

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## Models for Building a Better-Educated Pre-K Workforce

Several states that have instituted higher teacher-qualification requirements have taken on and successfully managed a number of the related challenges in recent years. To do this, they have created credentialing policies, provided financial incentives for training, developed higher education infrastructure, opened pathways to meeting the standards and provided scholarships and other supports for adult students. Key lessons can be drawn from their experiences in building the infrastructure necessary to prepare a more educated workforce.

### **Mandates**

Many states and the federal Head Start program that have instituted higher teacher qualification requirements have also recognized the need to pair those increased standards with additional workforce supports:

### **Wisconsin**

Since its inception, Wisconsin's *Four-Year-Old Kindergarten (4K)* program has been integrated within the state's public education system and supported through the school funding formula. For this reason, all *4K* teachers employed by a school district, whether working in a public school or community-based setting, are subject to the same high qualification requirements as K-12 educators. Among these teachers, only those who work in public schools are guaranteed salaries and benefits commensurate with those of their K-12 peers. More recently, the state mandated that districts provide a mentor and professional development team to support newly licensed teachers in all settings during the first three to five years of their tenure. Some other states that have implemented similar mandates have also provided aid to higher education institutions to help them build adequate teacher-training programs and/or increase the capacity of existing programs.<sup>a</sup>

### **Head Start**

Realistic timelines and goals are critical to the success of large-scale professional development efforts. At the federal level, in 1998 Congress mandated that half of all center-based Head Start teachers nationwide have at least an associate's degree by 2003, a benchmark which the program was able not only to meet but also to exceed.<sup>b</sup> By setting an achievable target, Head Start was able to demonstrate success. This, in turn, proved to be a valuable tool in efforts to win support and funding for further workforce improvements during the 2007 Head Start reauthorization, which mandated that 50 percent of Head Start teachers hold a bachelor's degree by 2013.<sup>c</sup>

### **New Jersey**

New Jersey offers some particularly useful lessons about teacher quality improvements. The 2000 *Abbott vs. Burke* state supreme court decision that ordered the state to provide high-quality pre-k in its 30 poorest school districts also required that all lead teachers acquire a bachelor's degree and an early childhood credential by September 2004. Rigorous bachelor's degree and teacher-training programs were established, and by the deadline, approximately 90 percent of the *Abbott* teaching workforce held a bachelor's degree and was at least provisionally certified.<sup>d</sup> This impressive transformation suggests that it is possible to raise the preparation levels of the early education workforce in a relatively short period of time.

To deal with the associated challenges of the mandate, New Jersey's policy leaders appropriated significant funds and implemented a comprehensive system to support teachers, higher education institutions and school districts. The state created a specialized P-3 certification, which could be satisfied via multiple paths, depending upon prior education and experience.<sup>e</sup> Educators pursuing degrees received full-tuition scholarships, and a new substitute-teacher pool gave teachers time to attend school.<sup>f</sup> New Jersey also created a statewide professional development center to help teachers get assistance to meet higher credentialing requirements.<sup>g</sup>

The state also tackled issues in higher education and compensation. Officials developed transfer agreements between two- and four-year institutions, formed grant-making partnerships with private foundations to build colleges' early childhood capacity, expanded funding for counseling services and to support evening, weekend, distance-learning and online courses<sup>h</sup> and provided scholarships through the Early Childhood Scholarship Program.<sup>i</sup> Salary parity also was instituted for teachers working in *Abbott* pre-k classrooms in all settings. One unintended consequence of the reforms, however, was that some teachers in Head Start and private centers, who increased their education levels, considered moving to public school pre-k classrooms where they felt they could obtain superior benefits, better working conditions and higher status.<sup>j</sup> The New Jersey experience points to the importance of continuing to advance parity in both compensation and supports across settings.<sup>k</sup>

By setting benchmarks several years ahead and tailoring the process to expedite the certification of teachers based on their prior experiences and education, New Jersey – like Head Start – was able both to begin achieving gains quickly and provide sufficient time for teachers with the greatest need to successfully meet higher requirements.

#### ***Incentives***

Other states have used incentives rather than mandates:

#### **Georgia**

Georgia raised teacher qualifications by pegging funding levels for early childhood programs to teacher credentials. This connection allows programs with more educated teachers to receive more funding from the state. The state also offers teachers financial support to help them increase their education level. So, while Georgia has no official standard requiring pre-k teachers to attain advanced levels of education, as of 2009, 84 percent have a bachelor's degree and 67 percent are certified.<sup>l</sup>

#### **North Carolina**

North Carolina, like 20 other states implementing the T.E.A.C.H. (Teacher Education and Compensation Helps) Early Childhood Project, has awarded scholarships to low-earning early education teachers who have completed coursework, contingent on a pledge to remain in the field for at least one year after satisfying the educational requirement.<sup>m</sup> Smart Start, a public-private partnership that funds a range of early education programs throughout the state, is helping to ensure that every community college has an early childhood teacher-preparation program. In order to encourage colleges to make long-term investments, Smart Start has also paid faculty salaries until early childhood training programs become self-supporting. The state's Division of Child Development also assisted community colleges in completing the national accreditation process.<sup>n</sup>

The state's scholarship program offers tiered advancement, enabling teachers to gain additional qualifications and realize the benefits of those efforts, such as increased compensation, incrementally. This system allows teachers to reap some rewards of greater education quickly, rather than mandating several years of study before any benefits can be gained. At the same time, the tiered scholarship program provides additional incentives for continuing education.<sup>o</sup>

*continued on page 14*



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## Models for Building a Better-Educated Pre-K Workforce

*continued from page 13*

### California

The Comprehensive Approaches to Raising Educational Standards (CARES) programs and several other county-run efforts, currently underway in California, to initiate specialized training in early education and build local higher education capacity also provide useful models. CARES is a stipend program designed to encourage educational attainment. Between 2002 and 2006, the program made a substantial difference, reaching as many as 70 percent of providers in some counties.<sup>p</sup> Several counties are using creative approaches to make higher education more accessible. In particular, they are offering training during non-work hours through extension programs in the communities where teachers live and work. One study notes that some universities are also offering courses at community college sites, a strategy that could help rural (as well as urban and suburban) communities.<sup>q</sup>

### Training Programs

Other states and localities have implemented their own training and capacity-building programs to support educators in meeting increased preparation requirements.



### Classroom Assessment Scoring System

While multiple studies demonstrate that quality teaching is the most significant factor in student learning, defining quality teaching has been a challenge. Rather than looking solely at credentials and structure, researchers at the Center for Advanced Study of Teaching and Learning developed the Classroom Assessment Scoring System (CLASS) to measure instruction in early education classrooms. The research team identified three broad domains, each linked by a solid body of research to student performance: emotional support, organizational support and instructional support. Using these domains, observers can effectively monitor how teachers and students interact. They can follow what teachers are doing to promote positive emotional, social and academic development and identify specific, effective behaviors teachers may employ to increase learning opportunities and improve the quality of their interactions with children. When combined with continuous in-service training and a solid educational background in developmentally appropriate practice, this model has effectively evaluated and improved classroom practices in both Virginia and the District of Columbia's pre-k programs.<sup>r</sup>

### Linguistic Diversity Initiatives

Several California counties that are implementing local, publicly funded pre-k programs have led an innovative charge to address the needs of teachers for whom English is a second language. In Los Angeles County, as part of the pre-k-for-all initiative, a number of community colleges are working to link general and early childhood education. This "bridge" would facilitate recruitment and further basic skill development for prospective teachers or assistants, especially those from culturally and linguistically diverse backgrounds.<sup>s</sup> Community colleges in the Early Care and Education Workforce Partnership, for instance, provide mentoring, tutoring, financial assistance and general coaching to help students navigate their options for attaining additional education.<sup>t</sup> Similarly, some counties are considering creative solutions to language barriers. In San Francisco, students are allowed to earn a credential in a dual-language program.<sup>u</sup>



## County Cohort Programs

Another strategy that has been successfully implemented in a number of California counties including Alameda, Los Angeles and San Francisco, is the use of “cohort programs.” Small groups of student teachers attend the same classes and participate together in other support

activities, effectively creating a community of early childhood professionals pursuing bachelor’s degrees. These programs have been shown in a recent study to be particularly beneficial to minority students, especially those who are the first in their families to attend college.<sup>v</sup>

- a D.J. Ackerman, “States’ Efforts in Improving the Qualifications of Early Care and Education Teachers,” *Educational Policy* 18, no. 2 (2004); ———, “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 (2005); W. Steven Barnett, Cynthia Lamy, and Kwanghee Jung, “The Effects of State Prekindergarten Programs on Young Children’s School Readiness in Five States,” (New Brunswick: National Institute for Early Education Research, Rutgers, The State University of New Jersey, 2005).
- b K. Hamm, “More Than Meets the Eye: Head Start Programs, Participants, Families, and Staff in 2005,” in *Policy Brief - Head Start Series* (Washington, DC: Center for Law and Social Policy, 2006).
- c Improving Head Start for School Readiness Act of 2007, Public Law 110-134, (Dec. 12, 2007).
- d S. Ryan and D. Ackerman, “Creating a Qualified Preschool Teaching Workforce Part 1: Getting Qualified: A Report on the Efforts of Preschool Teachers in New Jersey’s Abbott Districts to Improve Their Qualifications,” (National Institute for Early Education Research, Rutgers, The State University of New Jersey, 2004).
- e L. Klagholz, “State Policy and Effective Alternative Teacher Certification,” *Education Digest* 67 (2001).
- f Ryan and Ackerman, “Creating a Qualified Preschool Teaching Workforce Part 1: Getting Qualified: A Report on the Efforts of Preschool Teachers in New Jersey’s Abbott Districts to Improve Their Qualifications.”
- g J. Coffman and M.E. Lopez, “Raising Preschool Teacher Qualifications,” (Montclair and New York: The Schumann Fund for New Jersey and The Trust for Early Education, 2003).
- h Ibid.
- i Laura Donovan, “Abbott Preschool: 10 Years Later, an Added Bonus: The Educational Success Story of New Jersey’s Preschool Teachers,” (Newark: The Association for Children of New Jersey, 2009).
- j Ryan and Ackerman, “Creating a Qualified Preschool Teaching Workforce Part 1: Getting Qualified: A Report on the Efforts of Preschool Teachers in New Jersey’s Abbott Districts to Improve Their Qualifications.”
- k Ibid; M. Whitebook et al., “Time to Revamp and Expand: Early Childhood Teacher Preparation Programs in California’s Institutions of Higher Education,” (Center for the Study of Child Care Employment, University of California at Berkeley, 2005); ———, “Partnering for Preschool: A Study of Center Directors in New Jersey’s Mixed-Delivery Abbott Program,” (Center for the Study of Child Care Employment, University of California at Berkeley, 2008).
- l Holly Robinson, email, Dec. 12, 2009.
- m T.E.A.C.H. Early Childhood Project, “Creating Systems of Support for the Early Childhood Workforce: The T.E.A.C.H. Early Childhood & Child Care WAGE\$ National Annual Program Report 2008-2009,” (Chapel Hill, NC: Child Care Services Association, 2009). [http://www.childcareservices.org\\_downloads/TEACH\\_Annual\\_Report\\_09.pdf](http://www.childcareservices.org_downloads/TEACH_Annual_Report_09.pdf).
- n Sue Russell, email, Dec. 15, 2009.
- o T.E.A.C.H. Early Childhood Project, “Creating Systems of Support for the Early Childhood Workforce: The T.E.A.C.H. Early Childhood & Child Care WAGE\$ National Annual Program Report 2008-2009.”
- p Kara Dukakis and Dan Bellm, “Clearing a Career Path: Lessons from Two Communities in Promoting Higher Education Access for the Early Care and Education Workforce - Alameda and Santa Clara Counties, California,” (Center for the Study of Child Care Employment, University of California at Berkeley, 2006).
- q D. Bellm and M. Whitebook, “Universal Preschool in California: An Overview of Workforce Issues,” (Center for the Study of Child Care Employment, University of California at Berkeley, 2003).
- r C. Howes et al., “Ready to Learn? Children’s Pre-Academic Achievement in Pre-Kindergarten Programs,” *Early Childhood Research Quarterly* 23 (2008).
- s “Early Care and Education Workforce Initiative,” Los Angeles Universal Preschool, [http://www.laup.net/index.php?option=com\\_content&view=article&id=95&Itemid=85](http://www.laup.net/index.php?option=com_content&view=article&id=95&Itemid=85).
- t “Early Care and Education Workforce Partnership (ECE-WP),” Los Angeles Universal Preschool, [http://www.laup.net/index.php?option=com\\_content&view=article&id=119&catid=38&Itemid=85](http://www.laup.net/index.php?option=com_content&view=article&id=119&catid=38&Itemid=85).
- u M. Whitebook et al., “Learning Together: A Study of Six B.A. Completion Cohort Programs in Early Care and Education: Year 1 Report,” (Center for the Study of Child Care Employment, University of California at Berkeley, 2008).
- v “California Early Care and Education Workforce Study,” Center for the Study of Child Care Employment, University of California at Berkeley, [http://www.irl.berkeley.edu/csce/workforce\\_study.html](http://www.irl.berkeley.edu/csce/workforce_study.html).

## Recommendations

The weight of the evidence suggests that children benefit when states require both a bachelor's degree and well-designed, specialized early childhood training for all teachers in state pre-k classrooms. As states increasingly move toward these more rigorous education requirements, they should consider the lessons that have been learned to date:

### **Mentoring & Technical Assistance**

- Require state-funded pre-k programs to create mentoring programs that bring together experienced and new teachers and cohort programs that support early childhood educators seeking bachelor's degrees. Provide additional funding for these initiatives.
- Establish and fund technical-assistance centers to help teachers access ongoing training and subsidies and to help directors identify programs, trainers and ideas for supporting continuing education and professional development.
- Take advantage of funding and technical assistance resources offered through the federal government to support the development of pre-k teachers, such as loan forgiveness in the Higher Education Act.

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Research demonstrates that teachers with training in early childhood development are better equipped to facilitate young children's language-, cognitive- and social-skills development.

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### **Requirements & Pathways**

- Phase in new educational requirements over a designated time period. When possible, offer a “tiered” system of advancement to allow teachers to make short-term, step-by-step progress and to stagger certain expenses while they pursue full compliance.
- Set realistic, achievable timelines and professional development targets both for individual teachers and at the program level. These strategies promote success, which can, in turn, bolster political support for further improvements.
- Set out a careful implementation plan that creates specialized pathways and supports. Include scholarships, distance learning opportunities, paid time off and availability of substitutes for current teachers and child care workers to acquire needed preparation over the phase-in period, and support new entrants to meet standards quickly.
- Monitor and track membership in the pre-k teacher workforce. Such systems have become important parts of states' professional development initiatives. They are used to understand the makeup of the workforce, facilitate broader access to education, create appropriate professional development reforms, evaluate the impact of those reforms, determine how many children are being served and identify the areas of greatest need for future investment. More than 20 states have some form of workforce registry.<sup>61</sup>
- Invest state and local funds to allow pre-k programs across settings to offer salaries and benefits comparable to those of similarly qualified K-12 teachers. Such parity can promote greater professionalization in the field, reduce turnover and improve public support for the early childhood education field.

### Higher Education Partnerships

- When developing pre-k teacher-qualification requirements, include standards for training and college-level programs. Such standards should ensure that the content of teacher-preparation and professional-development programs is directly relevant, leads to recognized credentials and includes the latest research on young children’s learning and development, family engagement and the teaching of culturally and linguistically diverse and special needs students.
- Work with public and private higher education institutions to foster strong articulation between two- and four-year colleges, identify core courses in the subject and general-degree requirements, develop transfer procedures, provide ongoing review of agreements to address curriculum changes and collect data to evaluate the efficacy of these initiatives and training programs.
- Develop partnerships with colleges to support ongoing professional development and provide incentives for public school districts to include Head Start and other community-based pre-k providers in the training they offer their own pre-k teachers.
- Create specific pathways for teachers who have been in the field for many years but are not certified, such as job-embedded learning options and coursework available on site and online, as well as through nearby higher education institutions.
- Maintain the existing diversity in the pre-k teacher workforce. Enable institutions of higher education to provide academic counseling, financial aid and language support to meet the needs of current teachers and aides in low-income, minority and immigrant communities.

### Support Further Research on Key Questions, Including:

- Are certain education and training thresholds specifically tied to increases in quality? Do particular teacher-training program designs have stronger effects?<sup>62</sup> For example, among studies that identify a significant “BA effect,” it is unclear whether particular elements of the bachelor’s-degree programs are associated with better teaching or whether acquisition of the degree is indicative of other characteristics common among four-year college students, including perhaps the quality of prior education, subsequent training and support contexts they have experienced.<sup>63</sup>
- Which strategies should be used to address the educational needs of teachers-in-training from a variety of backgrounds? What on-the-job training, professional development and setting characteristics are particularly crucial to supporting teacher success?
- What kinds of training and ongoing professional development paths are needed for different groups of teachers? For example, what additional training would be best for those who acquired a degree before programs emphasized particular practices now known to improve classroom quality and increase children’s skills?

## Conclusion

Evidence clearly shows that state-funded, voluntary pre-k can produce substantial learning gains for children from all social and economic backgrounds with long-term benefits far exceeding program costs. Yet, the promise of programs can only be achieved if they are both accessible and of high quality. Research suggests that a critical element of pre-k quality is well-prepared and educated teachers. Specifically, when teachers have both bachelor's degrees and specialized training in early childhood, students demonstrate the best gains in all developmental areas: social, emotional, early literacy and math and language skills.

State and local policy makers can be instrumental in providing pre-k students with the best possible early learning programs. By mandating rigorous preparation requirements and/or providing incentives for higher educational attainment, policy leaders can help to build a corps of effective teachers for pre-k programs. To ensure success, however, state and local leaders must pair any strategy designed to improve teacher preparation and effectiveness with well-funded systems to provide pre-k educators with quality training programs, better access to higher education and other supports.

Federal policy makers have taken steps to encourage states to implement such policies and systems by offering matching funds for the expansion and improvement of early childhood education training programs. In the last Congress, amendments to the Higher Education Act brought early education teachers into expanded programs of college loan forgiveness.<sup>64</sup> The “four assurances”<sup>65</sup> that are the basis for the



Obama administration's education reform agenda include improving teacher quality, and the reauthorization of the Elementary and Secondary Education Act will likely include new efforts to measure and enhance teacher performance.

Given the wealth of research evidence indicating the tremendous potential for social, emotional and cognitive development in three and four year olds and the prospects for pre-k to close the gaps in children's school readiness, state leaders cannot afford to delay efforts to improve teacher quality. Policy makers, pre-k educators and advocates should act quickly and cooperatively to ensure that early childhood teachers are well trained and able to help families and communities make the most of this precious window of time in a child's life.



## Endnotes

1. Jack P. Shonkoff and Deborah Phillips, eds., *From Neurons to Neighborhoods: The Science of Early Childhood Development* (Washington, DC: National Academy Press, 2000).
2. Judy A. Temple and Arthur J. Reynolds, "Benefits and Costs of Investments in Preschool Education: Evidence from the Child-Parent Centers and Related Programs," *Economics of Education Review* 26 (2007); W. Steven Barnett et al., "The State of Preschool: 2007 State Preschool Yearbook," (New Brunswick: National Institute for Early Education Research, Rutgers, The State University of New Jersey, 2008).
3. See for example: W. Steven Barnett, "Better Teachers, Better Preschools: Student Achievement Linked to Teacher Qualifications," in *Preschool Policy Matters* (New Brunswick: National Institute for Early Education Research, Rutgers, The State University of New Jersey, 2004); W. Steven Barnett, Cynthia Lamy, and Kwanghee Jung, "The Effects of State Prekindergarten Programs on Young Children's School Readiness in Five States," (New Brunswick: National Institute for Early Education Research, Rutgers, The State University of New Jersey, 2005); B.T. Bowman, M.S. Donovan, and M.S. Burns, eds., *Eager to Learn: Educating Our Preschoolers* (Washington, DC: National Academy Press, 2000); Margaret R. Burchinal et al., "Caregiver Training and Classroom Quality in Child Care Centers," *Applied Developmental Science* 6, no. 1 (2002); Marcy Whitebook, "Early Education Quality: Higher Teacher Qualifications for Better Learning Environments – a Review of the Literature," (Center for the Study of Child Care Employment, University of California at Berkeley, 2003).
4. Barnett, "Better Teachers, Better Preschools: Student Achievement Linked to Teacher Qualifications."; Barnett, Lamy, and Jung, "The Effects of State Prekindergarten Programs on Young Children's School Readiness in Five States."; Bowman, Donovan, and Burns, eds., *Eager to Learn: Educating Our Preschoolers*; Burchinal et al., "Caregiver Training and Classroom Quality in Child Care Centers."; Whitebook, "Early Education Quality: Higher Teacher Qualifications for Better Learning Environments - a Review of the Literature."
5. W. Steven Barnett et al., "The State of Preschool: 2008 State Preschool Yearbook," (New Brunswick: National Institute for Early Education Research, Rutgers, The State University of New Jersey, 2009).
6. Walter S. Gilliam and Crista M. Marchesseault, "From Capitols to Classrooms, Policies to Practice: State-Funded Prekindergarten at the Classroom Level Part I: Who's Teaching Our Youngest Students? Teacher Education and Training, Experience, Compensation and Benefits, and Assistant Teachers," (New Haven: The National Prekindergarten Study, Yale University Child Study Center, 2005).
7. *Improving Head Start for School Readiness Act of 2007*, Public Law 110-134, (Dec. 12, 2007).
8. Barnett, "Better Teachers, Better Preschools: Student Achievement Linked to Teacher Qualifications."; D.L. Vandell, "Parents, Peer Groups, and Other Socializing Influences," *Developmental Psychology* 36, no. 6 (2000); Whitebook, "Early Education Quality: Higher Teacher Qualifications for Better Learning Environments - a Review of the Literature."
9. D.J. Cassidy et al., "The Effect of Education on Child Care Teachers' Beliefs and Classroom Quality: Year One Evaluation of the TEACH Early Childhood Associate Degree Scholarship Program," *Early Childhood Research Quarterly* 10 (1995); S.W. Helburn et al., "Cost, Quality and Child Outcomes in Child Care Centers." ed. Suzanne W. Helburn (University of Colorado at Denver, 1995); C. Howes, "Children's Experiences in Center-Based Child Care as a Function of Teacher Background and Adult-Child Ratio," *Merrill-Palmer Quarterly* 43 (1997).
10. Edward Zigler, Walter S. Gilliam, and Stephanie M. Jones, *A Vision for Universal Preschool Education* (Cambridge University Press, 2006), 110.
11. Arthur J. Reynolds and Judy A. Temple, "Economic Returns to Preschool," in *A Vision for Universal Preschool Education*, ed. Edward Zigler, Walter S. Gilliam, and Stephanie M. Jones (Cambridge University Press, 2006), 44-46.
12. William Gormley, Jr. et al., "The Effects of Universal Pre-K on Cognitive Development," *Developmental Psychology* 41, no. 6 (2005).
13. Barnett, "Better Teachers, Better Preschools: Student Achievement Linked to Teacher Qualifications."; Whitebook, "Early Education Quality: Higher Teacher Qualifications for Better Learning Environments - a Review of the Literature."
14. W.A. Collins et al., "Contemporary Research on Parenting: The Case for Nature and Nurture," *American Psychologist* 55 (2000); G.J. Duncan and J. Brooks-Gunn, eds., *Consequences of Growing up Poor* (New York: Russell Sage, 2000); Betty Hart and Todd R. Risley, *Meaningful Differences in the Everyday Experience of Young American Children* (Baltimore: Paul H. Brookes, 1995).
15. Pamela Kelley and Gregory Camilli, "The Impact of Teacher Education on Outcomes in Center-Based Early Childhood Education Programs: A Meta-Analysis," in *NIEER Working Papers* (New Brunswick: National Institute for Early Education Research, Rutgers, The State University of New Jersey, 2007).
16. Barnett, "Better Teachers, Better Preschools: Student Achievement Linked to Teacher Qualifications."; Barnett, Lamy, and Jung, "The Effects of State Prekindergarten Programs on Young Children's School Readiness in Five States."; Bowman, Donovan, and Burns, eds., *Eager to Learn: Educating Our Preschoolers*; Burchinal et al., "Caregiver Training and Classroom Quality in Child Care Centers."; R. de Kruif et al., "Classification of Teachers' Interaction Behaviors in Early Childhood Classrooms," *Early Childhood Research Quarterly* 15, no. 2 (2000); C. Howes and J. Brown, "Improving Child Care Quality: A Guide for Proposition 10 Commissions," in *Building Community Systems for Young Children*, ed. N. Halfon, et al. (Los Angeles: UCLA Center for Healthier Children, Families and Communities, 2000); Kelley and Camilli, "The Impact of Teacher Education on Outcomes in Center-Based Early Childhood Education Programs: A Meta-Analysis."; NICHD Early Child Care Research Network, "Child-Care Structure → Process → Outcome: Direct and Indirect Effects of Child-Care Quality on Young Children's Development," *Psychological Science* 13 (2002); S. Ryan and D. Ackerman, "Creating a Qualified Preschool Teaching Workforce Part 1: Getting Qualified: A Report on the Efforts of Preschool Teachers in New Jersey's Abbott Districts to Improve Their Qualifications," (National Institute for Early Education Research, Rutgers, The State University of New Jersey, 2004); Whitebook, "Early Education Quality: Higher Teacher Qualifications for Better Learning Environments - a Review of the Literature."
17. Ryan and Ackerman, "Creating a Qualified Preschool Teaching Workforce Part 1: Getting Qualified: A Report on the Efforts of Preschool Teachers in New Jersey's Abbott Districts to Improve Their Qualifications."; S. Kontos and A. Wilcox-Herzog, "Teachers' Interactions with Children: Why Are They So Important?" *Young Children* 52, no. 2 (1997); C. Howes, D. Phillips, and M. Whitebook, "Thresholds of Quality: Implications for the Social Development of Children in Center-Based Child Care," *Child Development* 63 (1992); Helburn et al., "Cost, Quality and Child Outcomes in Child Care Centers."; de Kruif et al., "Classification of Teachers' Interaction Behaviors in Early Childhood Classrooms."
18. D.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 (2005).
19. Cassidy et al., "The Effect of Education on Child Care Teachers' Beliefs and Classroom Quality: Year One Evaluation of the TEACH Early Childhood Associate Degree Scholarship Program."; Howes, "Children's Experiences in Center-Based Child Care as a Function of Teacher Background and Adult-Child Ratio."
20. C. Howes et al., "Ready to Learn? Children's Pre-Academic Achievement in Pre-Kindergarten Programs," *Early Childhood Research Quarterly* 23 (2008).
21. 120 hours of formal training, 280 hours of classroom experience, and documented competency.
22. D.M. Early et al., "Are Teachers' Education, Major, and Credentials Related to Classroom Quality and Children's Academic Gains in Pre-Kindergarten?" *Early Childhood Research Quarterly* 21, no. 2 (2006).
23. J. Arnett, "Caregivers in Day-Care Centers: Does Training Matter?" *Journal of Applied Developmental Psychology* 10 (1989).

## Endnotes

*continued from page 19*

24. Howes and Brown, "Improving Child Care Quality: A Guide for Proposition 10 Commissions."
25. Early et al., "Are Teachers' Education, Major, and Credentials Related to Classroom Quality and Children's Academic Gains in Pre-Kindergarten?"
26. Ibid.
27. Whitebook, "Early Education Quality: Higher Teacher Qualifications for Better Learning Environments - a Review of the Literature."
28. Howes, Phillips, and Whitebook, "Thresholds of Quality: Implications for the Social Development of Children in Center-Based Child Care."
29. F. Palermo et al., "Preschoolers' Academic Readiness: What Role Does the Teacher-Child Relationship Play?" *Early Childhood Research Quarterly* 22, no. 4 (2007).
30. L. Darling-Hammond and G. Sykes, "Wanted: A National Teacher Supply Policy for Education: The Right Way to Meet the 'Highly Qualified Teacher' Challenge," *Educational Policy Analysis Archives* 11, no. 33 (2003).
31. K. Hill-Scott, "Los Angeles Universal Preschool Master Plan: The Sky's the Limit!" (First 5 L.A., 2004); E. Galinsky, "The Economic Benefits of High-Quality Early Childhood Programs: What Makes the Difference?" (Washington, DC: Committee for Economic Development, 2006); D. Bellm and M. Whitebook, "Roots of Decline: How Government Policy Has De-Educated Teachers of Young Children," (Center for the Study of Child Care Employment, University of California at Berkeley, 2006).
32. Bureau of Labor Statistics, "Table 1: National Employment and Wage Data from the Occupational Employment Statistics Survey by Occupation, May 2008," U.S. Department of Labor, <http://www.bls.gov/news.release/ocwage.t01.htm>.
33. Calculated from: Ibid.
34. W. Steven Barnett, "Low Wages = Low Quality: Solving the Real Preschool Crisis," (New Brunswick: National Institute for Early Education Research, Rutgers, The State University of New Jersey, 2003).
35. Stephen Herzenberg, Mark Price, and David Bradley, "Losing Ground in Early Childhood Education: Declining Workforce Qualifications in an Expanding Industry, 1979-2004," (Washington, DC: Economic Policy Institute, 2005).
36. D.J. Ackerman, "States' Efforts in Improving the Qualifications of Early Care and Education Teachers," *Educational Policy* 18, no. 2 (2004); D. Bellm and M. Whitebook, "Universal Preschool in California: An Overview of Workforce Issues," (Center for the Study of Child Care Employment, University of California at Berkeley, 2003); ———, "State Registries of the Early Care and Education Workforce: A Review of Current Models and Options for California," in *Building California's Preschool For All Workforce* (Center for the Study of Child Care Employment, University of California at Berkeley, 2004).
37. Howes, Phillips, and Whitebook, "Thresholds of Quality: Implications for the Social Development of Children in Center-Based Child Care."; Helburn et al., "Cost, Quality and Child Outcomes in Child Care Centers."
38. Hill-Scott, "Los Angeles Universal Preschool Master Plan: The Sky's the Limit!"
39. D. Bellm et al., "Teacher Credentialing in Early Care and Education: Prospects for Universal Preschool in California and Lessons Learned from Other States," in *Building California's Preschool For All Workforce* (Center for the Study of Child Care Employment, University of California at Berkeley, 2004).
40. T.E.A.C.H. Early Childhood Project, "Creating Systems of Support for the Early Childhood Workforce: The T.E.A.C.H. Early Childhood & Child Care WAGE\$ National Annual Program Report 2008-2009," (Chapel Hill, NC: Child Care Services Association, 2009).
41. Hill-Scott, "Los Angeles Universal Preschool Master Plan: The Sky's the Limit!"
42. John Pruetto, Email, Dec. 5, 2009.
43. Ackerman, "States' Efforts in Improving the Qualifications of Early Care and Education Teachers."; Bellm and Whitebook, "Roots of Decline: How Government Policy Has De-Educated Teachers of Young Children."; Herzenberg, Price, and Bradley, "Losing Ground in Early Childhood Education: Declining Workforce Qualifications in an Expanding Industry, 1979-2004."
44. Hedy Chang, "Getting Ready for Quality: The Critical Importance of Developing and Supporting a Skilled, Ethnically and Linguistically Diverse Early Childhood Workforce," (Oakland: California Tomorrow, 2006).
45. Barnett et al., "The State of Preschool: 2008 State Preschool Yearbook."
46. TX requires an EC through fourth certification. See: Ibid.
47. Florence Chang, Diane M. Early, and Pamela J. Winton, "Early Childhood Teacher Preparation in Special Education at 2- and 4-Year Institutions of Higher Education," *Journal of Early Intervention* 27, no. 2 (2005); Valora Washington, "Role, Relevance, Reinvention: Higher Education in the Field of Early Care and Education," (Boston: Wheelock College, 2008).
48. Ackerman, "Getting Teachers from Here to There: Examining Issues Related to an Early Care and Education Teacher Policy."; Chang, "Getting Ready for Quality: The Critical Importance of Developing and Supporting a Skilled, Ethnically and Linguistically Diverse Early Childhood Workforce."
49. Washington, "Role, Relevance, Reinvention: Higher Education in the Field of Early Care and Education."
50. Ackerman calculated this using the average teacher hourly rate in New Jersey at the time (\$8.60) and the cost of college credits (\$159.50). See: Ackerman, "States' Efforts in Improving the Qualifications of Early Care and Education Teachers."
51. Ryan and Ackerman, "Creating a Qualified Preschool Teaching Workforce Part 1: Getting Qualified: A Report on the Efforts of Preschool Teachers in New Jersey's Abbott Districts to Improve Their Qualifications."
52. Chang, "Getting Ready for Quality: The Critical Importance of Developing and Supporting a Skilled, Ethnically and Linguistically Diverse Early Childhood Workforce."
53. U.S. Department of Education, 1994-1995 through 2003-2004.
54. *Elementary and Secondary Education Act of 1965 (2001 Reauthorization, Also Known as "No Child Left Behind")*, Public Law 107-100, (Jan. 8, 2001).
55. National Research Council, *Educating Language-Minority Children*, ed. Diane August and Kenji Hakuta (Washington, DC: National Academies Press, 1998).
56. Ibid.
57. V. Buysse, Castro, D. C., West, T., & Skinner, M. L., "Addressing the Needs of Latino Children: A National Survey of State Administrators of Early Childhood Programs. Executive Summary," (Chapel Hill: University of North Carolina, Frank Porter Graham Child Development Institute, 2004).
58. IDEA Data Accountability Center, "Part B Educational Environment (2007)," U.S. Department of Education, Office of Special Education Programs, [https://www.ideadata.org/arc\\_toc9.asp#partBLRE](https://www.ideadata.org/arc_toc9.asp#partBLRE).
59. D.M. Early and P.J. Winton, "Preparing the Workforce: Early Childhood Teacher Preparation at 2- and 4-Year Institutions of Higher Education," *Early Childhood Research Quarterly* 16 (2001).
60. Buysse, "Addressing the Needs of Latino Children: A National Survey of State Administrators of Early Childhood Programs. Executive Summary."; Early and Winton, "Preparing the Workforce: Early Childhood Teacher Preparation at 2- and 4-Year Institutions of Higher Education."
61. Bellm and Whitebook, "State Registries of the Early Care and Education Workforce: A Review of Current Models and Options for California."
62. Early et al., "Are Teachers' Education, Major, and Credentials Related to Classroom Quality and Children's Academic Gains in Pre-Kindergarten?"; K. Tout, M. Zaslow, and D. Berry, "Quality and Qualifications: Links between Professional Development and Quality in Early Care and Education Settings," in *Critical Issues in Early Childhood Professional Development*, ed. M. Zaslow and I. Martinez-Beck (Baltimore: Paul H. Brookes, 2005).
63. Howes, "Children's Experiences in Center-Based Child Care as a Function of Teacher Background and Adult-Child Ratio."
64. *Higher Education Opportunity Act*, Public Law 110-315, (Aug. 14, 2008).
65. U.S. Department of Education, "The Race to the Top Begins - Remarks by Secretary Arne Duncan, Jul. 24, 2009," <http://www2.ed.gov/news/speeches/2009/07/07242009.html>.

## Acknowledgements

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**Linda Darling-Hammond** is Charles E. Ducommun Professor of Education at Stanford University where she has launched the Stanford Educational Leadership Institute and the School Redesign Network. She has also served as faculty sponsor for the Stanford Teacher Education Program. She is a former president of the American Educational Research Association and member of the National Academy of Education. Her research, teaching and policy work focus on issues of school restructuring, teacher quality and educational equity. From 1994-2001, she served as executive director of the National Commission on Teaching and America's Future, a blue-ribbon panel whose 1996 report, "What Matters Most: Teaching for America's Future," led to sweeping policy changes. In 2006, this report was named one of the most influential affecting U.S. education, and Darling-Hammond was named one of the nation's ten most influential people affecting educational policy over the last decade. She served as the leader of President Barack Obama's education policy transition team.

**Danielle M. Gonzales** joined Pre-K Now in 2004 as state policy specialist and served as deputy state program director then project manager until her departure in 2009. During her five years with the organization, her work focused primarily on state policy and Latino outreach, leading efforts to educate policy makers, the media and the public about the potential of pre-k to improve outcomes for young children. Prior to joining Pre-K Now, she worked at Reading Is Fundamental (RIF), and taught fourth grade in Brownsville, TX. Gonzales previously worked at the White House Initiative on Educational Excellence for Hispanic Americans at the U.S. Department of Education and on several political campaigns in her home state of New Mexico. She received her BA in Political Science and Spanish Language and Literature from the George Washington University and her M.Ed. from the University of Notre Dame.

**Jennifer V. Doctors** edited this report for Pre-K Now.

## Pre-K Now at a Glance

### Mission

Pre-K Now collaborates with advocates and policy makers to lead a movement for high-quality, voluntary pre-kindergarten for all three and four year olds.

### Vision

Pre-K Now's vision is a nation in which every child enters kindergarten prepared to succeed.

### Location

Washington, DC

### Leadership

Marci Young  
Project Director

### Funders

The David and Lucile Packard Foundation  
The McCormick Foundation  
The Nellie Mae Education Foundation  
RGK Foundation  
The Schumann Fund for New Jersey

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### Pre-K Now Key Differentiators

- Focuses exclusively on pre-k
- Provides the most up-to-date gauge of the pre-k pulse in any state
- Offers nationwide access to pre-k advocates
- Monitors and distributes daily pre-k newsclips
- Provides a national perspective on local pre-k issues
- Provides outreach, policy, and Spanish-language information targeted to the Latino community
- Leads a national movement which has gained significant momentum in the last five years

### The Case for Pre-K

- Pre-k benefits all children academically, socially, and emotionally.
- High-quality pre-k for all nets a high return on investment in children and the community.
- The most important brain development occurs by age six.
- Pre-k is the first step to education reform.



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