

Meaningful Investments in Pre-K

Estimating the Per-Child Costs of Quality Programs

Institute for Women's Policy Research

About This Report

Meaningful Investments in Pre-K: Estimating the Per-Child Costs of Quality Programs estimates the costs of quality improvements in public and private pre-kindergarten settings in the United States at varying levels of quality. The report adapts a cost estimation model developed by the Institute for Women's Policy Research and Early Childhood Policy Research to determine a per-child-hour estimate that can serve as a tool for policy makers, program administrators, and others in determining the levels of investment needed to adequately fund different quality improvements. The report is part of IWPR's ongoing pre-k cost estimations, which aid states in building high-quality pre-k systems for preschool-age children across the country.

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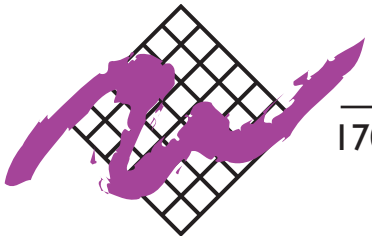

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Executive Summary

Policy makers around the country, seeing the far-reaching benefits of quality pre-kindergarten (pre-k) for three, four, and five-year-olds, are committing substantial resources to expanding these programs. They are beginning to recognize that public investments in early learning can be as important as those made in elementary education. Positive outcomes of pre-k investments are especially great when participating programs uphold high-quality standards, including high teacher-to-child ratios and small class sizes, and when they employ experienced, well-compensated teachers with good credentials.

Faced with an array of possible program design parameters, policy makers, school administrators and program directors need information on the costs of developing or expanding high-quality programs that will maximize the benefits of pre-k for children. This study estimates the financial investments needed by states to support pre-k in both public and private settings at differing levels of quality. The report also discusses, in conceptual terms, the benefits associated with different levels of investment in pre-k quality, provides examples of high-quality state programs, and recommends increased investments in pre-k along with investments in other components of our nation's early care and education system.

Estimates include costs for staff salaries and benefits, student support services (e.g., social work), food, child transportation, instructional supplies, building operations and maintenance, in-service training, technical assistance, infrastructure improvements, including facilities renovation to ensure safe environments for preschoolers, a small profit margin in the case of for-profit providers, and governance costs for the statewide administration of programs.

Quality levels for the cost estimates are based on differing class sizes and levels of teacher qualifications/pay. Costs are estimated for three different class sizes (20, 17, and 15 children), with smaller classes reflecting higher quality. Costs are based on the assumption that each classroom has a lead and an assistant teacher, and that all lead teachers hold a degree or other credential with a specialization in early childhood education or a related field. The levels of teacher qualifications/pay used in this study are:

a) *Highest quality (recommended)*: A teacher with a Bachelor's degree paid at typical kindergarten-level wages.
b) A teacher with a Bachelor's degree paid at typical pre-k-level wages.
c) A teacher with an Associate's degree.
d) *Lowest quality (not recommended)*: a teacher with a Child Development Associate credential.

We include two levels of pay for BA-level teachers because adequate compensation is associated with better retention of well-qualified teachers, which in turn is related to higher quality service delivery. A number of states, such as Illinois, Kansas, Maryland, New Jersey (Abbott program, only), Oklahoma, and Texas, require that pre-k teachers be paid according to the public school salary scale regardless of the setting.[1]

The report provides hourly and annual cost estimates for school-year services offered for six, three, and nine hours per day at different quality levels. The costs of a six-hour pre-k program in the United States

in 2007 dollars range from $5.17 per-child-hour for the lowest level of quality (a class size of 20 and lead teacher with a Child Development Associate credential) to $8.18 per-child-hour for the highest quality level (a class size of 15 and lead teacher with a Bachelor's Degree paid at kindergarten-level wages). The annual costs of a six-hour program delivered for 185 days, or the typical school year, range from $5,741 per-child per-year, for the lowest level of quality, to $9,076 per-child per-year for the highest level of quality. It should be noted that costs will vary among states and these estimates are based on calculations derived from national medians.

A review of previous research suggests that the benefits of pre-k outweigh the public investment costs. High teacher credentials and low student-to-teacher ratios typically have pronounced positive effects on children's school readiness and cognitive development when compared with programs that do not possess these quality characteristics. Class size varies among those programs demonstrating the strongest benefits.

The report describes several examples of current state-funded pre-k programs that closely resemble the high-quality scenario modeled in this report, including mixed-setting programs operating in New Jersey, North Carolina, and Tennessee. The report concludes by emphasizing the importance of adequately funding the quality elements of pre-k, and highlights the societal value of an integrated early education system that offers families the option of full-day service.

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IWPR also thanks Steven Barnett of the National Institute for Early Education Research (NIEER); Jim Greenman of Bright Horizons Family Solutions; Jim Loving, Past President of the National Child Care Association; and Lynn White, formerly with the Early Care and Education Consortium; for their ongoing input and insightful reviews of drafts of this work. Thomas Cook, of Northwestern University, Louise Stoney, the Alliance for Early Childhood Finance, Helene Stebbins, of the Finance Project, and Eric Karolak, of the Early Care and Education Consortium, also provided helpful input. Thanks to Walter Gilliam of Yale University for the use of the National Prekindergarten Study data. IWPR Research Assistant Alexandra Borosova provided valuable research support for the project.

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Introduction

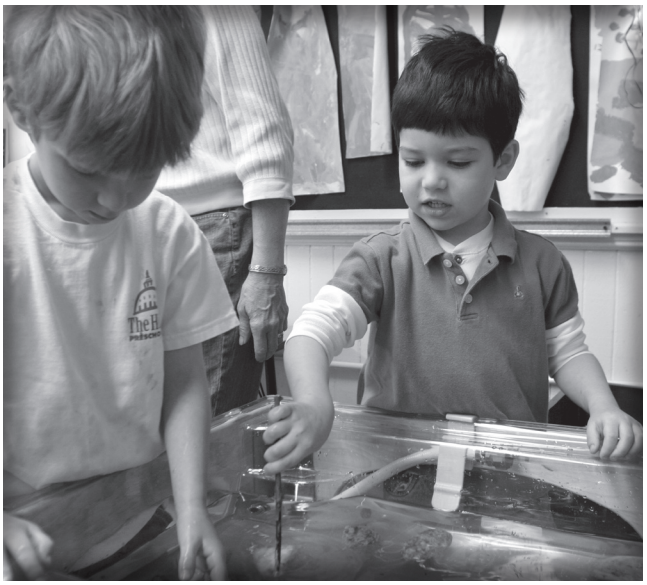
The Need for Understanding the Cost of Quality

Prekindergarten (pre-k) programs are expanding in states around the nation, bringing substantial benefits to children, working families, and communities. Pre-k, which serves three-, four-, and five-year-olds, is an important component of our nation's patchwork of early care and education for children starting in infancy.[a] With pre-k serving a growing number of the nation's children, it is critical that a high proportion of these programs possess the quality parameters associated with strong positive outcomes, including small class sizes and highly qualified teachers. As states and communities seek to increase their investments in pre-k, they face a number of choices, and potential tradeoffs, in designing programs that will yield substantial benefits for communities, effectively meet families' needs, and interface well with existing early care and education programs. Program design choices include how many children of what ages will be served, which children will be eligible, the quality characteristics of the program (e.g. teacher qualifications, class size, and child-to-teacher ratios), and the degree of new infrastructure that the program will require. Decisions about program parameters have clear spending implications, and policy makers require solid cost information to ensure that programs are funded well enough to provide high-quality service and allow both public and private providers to cover their costs and stay in business.

This study provides national estimates of the per-child-hour cost of pre-k for three to five-year-old children[b] in the United States at varying levels of quality. The estimates give a general picture of the expected costs across all of the states, and though costs will vary substantially from state to state (as do the costs of living, wages, and median family incomes), the estimates serve as a tool for program administrators to approximate the costs of quality improvements in their own state.

[a] Pre-k can take place in a number of settings, including schools, centers, and Head Start programs.
[b] We are referring to children who are too young to be eligible for kindergarten.

Chapter 1
Methods for Estimating the Cost of Pre-K at Varying Quality Levels



How much does it cost to provide pre-k for children in the United States at varying quality levels? To address this question we adapt a cost estimation model developed by the Institute for Women's Policy Research and Early Childhood Policy Research (ECPR)[2] to determine a per-child-hour estimate that can serve as a guideline for policymakers and other community leaders. The results capture a range of potential program costs.

Assumptions about Program Characteristics

In carrying out its estimates of costs IWPR assumes that programs possess a number of quality-related characteristics. Based in part on previous research, we assume that to operate successfully and to ensure the health, safety, and positive development of children, all high-quality pre-k programs should possess the following characteristics:

- At least one lead teacher and one assistant teacher with early childhood credentials present in each classroom.
- Schools and centers operating pre-k classrooms must be regulated and properly monitored.
- All facilities are adequately maintained to ensure the health and safety of participating children and staff.
- High-quality educational and developmental materials are available to all children.
- Staff are available to promote parental involvement, provide parenting support, and facilitate access to community resources.
- Schools and centers perform internal evaluations and participate in third-party evaluations to assess child outcomes and school readiness.
- Classes meet minimum accepted standards of size and teacher-to-child ratios.[3]

Quality-Related Parameters for Cost Estimates

For our range of cost estimates we vary two structural characteristics known to affect the quality of pre-k: teacher qualifications/pay and class size.[c] Highly-qualified and adequately compensated teachers have been found to exhibit better teaching process quality than less qualified teachers, which in turn, affects children's experiences. An analysis of the Florida Quality Improvement Study, which measured the impact of a new state regulation requiring early education teachers to be credentialed, found that higher levels of teacher education led to more effective teaching and better child outcomes.[4] A recent meta-analysis of 33 early education evaluations found that children have better learning experiences in pre-k classrooms when their teachers have higher levels of education, with several studies showing that bachelor's degree teachers produce the largest effects.[5]

Research suggests that class size and child-to-staff ratios both influence outcomes for children in early learning settings.[6] For example, a study of quality in child care centers found that the care received by at least 50 percent of toddlers and pre-k-aged children in classes with child-to-adult ratios of 9:1 or higher was inadequate, and that pre-k classrooms with fewer than 9 children per adult were more likely to experience good to very good caregiving.[7] The Tennessee Star study, an experimental study of classroom quality found that kindergarten children in small classes of 13 to 17 students have better math and reading outcomes than those in classes of 22 to 26 students, even when these larger classes had a paid teacher's aide.[8]

We conduct per-child cost estimates for three possible class sizes with four levels of teacher qualifications/pay to form a twelve-cell matrix, with each cell representing a different combination of the two quality variables. The three class sizes that we selected are 20, 17, and 15 pre-school age children per classroom. In selecting these class sizes, we relied on benchmarks and information on the range of state pre-k class sizes from the 2007 State of Preschool Yearbook published by the National Institute for Early Education Research (NIEER).[d] We use the NIEER benchmark of 20 children per class as the largest acceptable class size. Twenty children per class is also the maximum class size recommended by the National Association for the Education of Young Children.[e] Given our assumption of two teachers per classroom, the teacher-to-child ratio for this class size would be 1:10. A class size of 17 would have a 1:8.5 ratio and a class size of 15 children would have a ratio of 1:7.5.[f]

The levels of teacher educational qualifications/pay were selected based on knowledge of the range of current state requirements as well as research on the benefits of teachers' education and compensation. The four qualification/pay levels we include in our estimates are, in order from highest quality to lowest:

a) ***Highest quality***: a Bachelor's Degree teacher paid at typical kindergarten level wages (Bachelor's Degree I).
b) A teacher with a Bachelor's Degree paid at typical pre-k level wages (Bachelor's Degree II).
c) A teacher with an Associate's Degree.
d) ***Lowest quality***: a teacher with a Child Development Associate[g] (CDA) credential.

[c] The importance of these elements of high-quality early education is addressed in the discussion of research on benefits, below.
[d] The Yearbook lists class sizes and teacher degree requirement as two of ten critical characteristics affecting program quality.
[e] In 2005-2006, 37 of 48 state pre-k initiatives met this standard.
[f] Only eight of 48 programs featured in the NIEER Yearbook have a maximum class size requirement of 15 and/or a maximum teacher-to-child ratio of 1:8.
[g] The Child Development Associate (CDA) is a national credential begun in 1971 administered by the CDA National Council in Washington, DC. Eligibility for a preschool CDA requires a high school diploma (or GED), at least 120 hours of formal education across 8 areas of early childhood education/child development/professional practice, and at least 480 hours of direct experience working with preschool children. For more information, see http://www.cdacouncil.org/cda/PreSchool_Requirements.htm.

We include the BA-level teachers paid at kindergarten level wages (in addition to those paid at typical pre-k wages) because previous research suggests that adequate compensation for early learning professionals improves staff retention, attracts more qualified teachers, and leads to improved quality services for children.[9] This level of teacher qualifications represents the recommended level of quality.

For all qualification/pay levels considered in these estimates we assume that the teachers hold a credential in early childhood or a related field. Because of a lack of detailed data, our cost estimates do not differentiate the wages of credentialed versus non-credentialed teachers. Our assumptions about credentialing and issues of data availability are described in more detail in Appendix A. Our cost estimates vary the education levels of lead teachers, holding the education of assistant teachers constant at the lowest level, assuming that they have a CDA. We want to emphasize that inclusion of the CDA education level does not suggest an endorsement of this level as a minimum requirement for lead teachers. Rather, it is included because it represents reality for a number of state pre-k programs, and a principal aim of this paper is to provide cost information on improvements in quality.

Methods for Estimating Direct Service and Infrastructure Costs

We combine two cost categories—**direct service costs** and **infrastructure costs**—to derive a total per-child-hour cost estimate for a fully implemented program. We assume that the program would be implemented in a variety of settings (e.g., public schools, private child care centers, Head Start centers, etc.). While direct costs vary with our levels of quality we assume constant infrastructure costs as a percentage of the average total costs of our program scenarios.

A) Direct service costs are expenditures directly associated with the programs' day-to-day operations:

(1) **instructional personnel expenditures**, including

a) salaries[h] and
b) employer-provided benefits[i] for teachers.

Salary estimates are derived from national median wages calculated through analysis of data from the National Prekindergarten Study and the Bureau of Labor Statistics' Occupational Employment Survey.

(2) **essential instructional support expenditures**, including

a) food for children,
b) transportation for children,
c) support services for children (social work, guidance counseling, health, psychological services, speech pathology, audiology, and other student support services),
d) in-service teacher training, and
e) instructional supplies.

[h] Data on teachers' salaries come from the National Prekindergarten Study of the Yale University Child Study Center (Gilliam 2006.) Through personal communications with the study's authors, we were provided with data on salaries for teachers with a Bachelor's degree, with an Associate's degree, and a high school diploma. We were not, however, able to differentiate between the salaries of high school diploma holders with a CDA credential and those without.
[i] Employer-provided benefits include Social Security; Medicare; state and federal unemployment insurance; workers' compensation insurance; and health, life, and disability insurance. We also assume teachers receive pension benefits.

The cost data for these support services are derived from public school data[10] for expenditure items that would logically apply to pre-k.

(3) **non-instructional expenditures**, including

a) costs of building operations and maintenance and
b) the administration of schools and school districts.

These costs also come from public school expenditure reporting. Because some of the administrative costs reflected in public school cost reporting would not apply to for-profit settings, we assume that the overall estimate would also cover a small profit margin in the case of a for-profit setting.

B) Infrastructure investments are additional system investments that contribute to the long-term success of the program. Infrastructure investments included in this model are:

(1) technical assistance and consultation to the program,
(2) quality monitoring,
(3) outcome evaluation,
(4) facility renovation, and
(5) governance.

We estimate infrastructure expenditures for fully implemented six-hour, three-hour, and nine-hour programs at 11.5 percent of the average total costs for each program type. This percentage does not include the workforce development costs of increasing teacher credentials, as IWPR's state-level estimates normally do, because of substantial state variation in the number of teachers whose credentials must be raised and the costs associated with that credentialing. As mentioned above, however, the cost of teacher in-service training is included in the direct service cost component of the model as an essential instructional support expenditure.

Chapter 2
Results: Estimated Hourly and Annual Per-Child Costs of Pre-K

Using the data and methodology described above (and in more detail in Appendix A), we calculate the per-child cost of a pre-k program (in 2007 dollars) at the twelve combinations of quality, for programs providing different hours of service per day. Each of the estimates assumes that services are provided 185 days per year, roughly corresponding to the typical school year.

We first focus on the six-hour program, which represents the length of a typical school day. We also present estimates for a three-hour program, acknowledging that this is close to the number of hours of publicly-funded programs that states typically offer. A three-hour program length, while helpful, is generally insufficient for families with more than one working parent, or a single working parent. A nine-hour day of pre-k in one setting would be optimal for two-parent or single-parent families in which all parents in the household work outside the home. It would reduce parents' need to shuttle children from one location to another and would provide a consistent environment and a high-quality learning experience for the majority of time that children spend outside of the home. Children who leave part-day pre-k programs for other lower-quality settings cannot be expected to reap the same benefits as those enjoyed by children in full-day, high-quality settings. Many families also need full-year service (rather than service for only the school year), and those costs can be ascertained by multiplying the per-child-hour cost by the number of hours per day and service days in a year.

Six-Hour Program

The estimated costs for a six-hour day range from $5.17 per-child-hour at the lowest level of quality to $8.18 per-child-hour at the highest level (see Table 1). All costs by teacher qualifications and class size are presented in Chart 1, as well as in Appendix B, Table 1. Appendices A and B provide further details on how costs were calculated.

Table 1 also presents the estimates of annual per-child costs at different levels of quality for a six-hour program. Annual costs are derived by multiplying the per-child-hour cost by the number of hours per day and days per year of service.

Table 1. Six-Hour Pre-K Program: Estimated Hourly Per-Child and Annual Per-Child Costs in 2007 Dollars (for school year only)

	Hourly Cost Per Child			Annual Cost Per Child		
Teacher Qualifications:	Class Size:			Class Size:		
	15	17	20	15	17	20
Bachelor's Degree I	$8.18	$7.49	$6.72	$9,076	$8,313	$7,454
Bachelor's Degree II	$7.27	$6.69	$6.04	$8,070	$7,425	$6,700
Associate's Degree	$6.47	$5.99	$5.44	$7,184	$6,643	$6,035
CDA	$6.12	$5.67	$5.17	$6,792	$6,298	$5,741

Note: Bachelor's Degree I represents teachers with BAs earning kindergarten-level wages. Bachelor's Degree II represents teachers with BA's earning typical wages for BA-level pre-k teachers.
Source: Calculated by the Institute for Women's Policy Research. For methodology and data sources see Appendix A and Appendix B, Table 2.

Chart 1. Costs per Hour by Teacher Qualifications and Class Size for a Six-Hour Program in 2007 Dollars

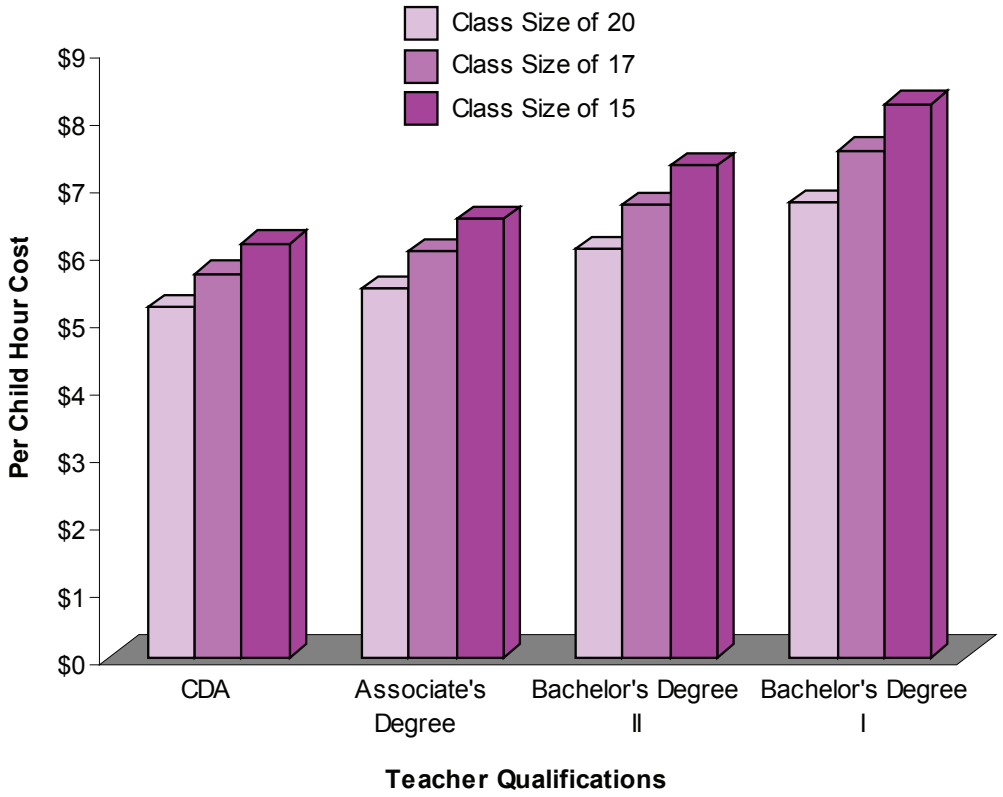
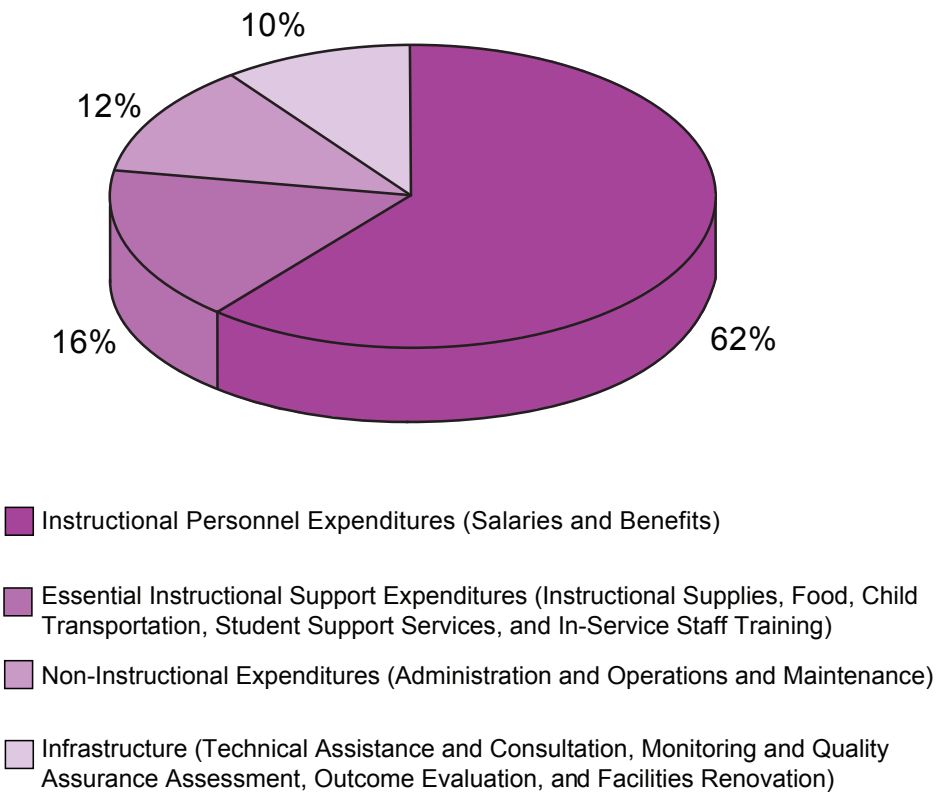


Chart 2. Breakdown of Costs by Category, Six-Hour Pre-K Program, Bachelor's Degree I, Class Size of 15



As shown in Chart 2, Instructional Personnel Expenditures make up the largest share of costs according to our model (62 percent), followed by expenditures for student supports (16 percent). Non-Instructional Expenditures and Infrastructure costs combined come to less than one-quarter of total costs (22 percent).

Three-Hour Program

We assume that a double-session three-hour program requires the same staffing as a single-session six-hour program. The three-hour program would include a morning and an afternoon session (with the same staff serving twice as many children, but for half as much time per day compared with the six-hour session). The hourly cost increases in this scenario are due to the expenditures that depend on the total number of children served, such as food and instructional supplies. These costs are reflected in higher per-child-hour costs for the three-hour program as compared to the per-child-hour costs for the six-hour program (see Table 2). Consequently, the annual costs for the three-hour program are more than half the costs associated with the six-hour program (Table 2).

Table 2. Three-Hour Pre-K Program: Estimated Hourly Per-Child and Annual Per-Child Costs in 2007 Dollars (for school year only)

Teacher Qualifications:	Hourly Cost Per Child			Annual Cost Per Child		
	Class Size:			Class Size:		
	15	17	20	15	17	20
Bachelor's Degree I	$8.82	$8.12	$7.33	$4,893	$4,506	$4,071
Bachelor's Degree II	$7.91	$7.32	$6.66	$4,390	$4,062	$3,694
Associate's Degree	$7.11	$6.62	$6.06	$3,947	$3,672	$3,361
CDA	$6.76	$6.30	$5.79	$3,751	$3,499	$3,214

Note: Bachelor's Degree I represents teachers with BAs earning kindergarten-level wages. Bachelor's Degree II represents teachers with BA's earning typical wages for BA-level pre-k teachers.
Source: Calculated by the Institute for Women's Policy Research. For methodology and data sources see Appendix A and Appendix B, Table 3.

Table 3. Nine-Hour Pre-K Program: Estimated Hourly Per-Child and Annual Per-Child Costs in 2007 Dollars (for school year only)

Teacher Qualifications:	Hourly Cost Per Child			Annual Cost Per Child		
	Class Size:			Class Size:		
	15	17	20	15	17	20
Bachelor's Degree I	$8.20	$7.42	$6.54	$13,649	$12,348	$10,884
Bachelor's Degree II	$7.14	$6.48	$5.74	$11,889	$10,795	$9,564
Associate's Degree	$6.21	$5.66	$5.05	$10,338	$9,427	$8,401
CDA	$5.80	$5.30	$4.74	$9,652	$8,821	$7,887

Note: Bachelor's Degree I represents teachers with BAs earning kindergarten-level wages. Bachelor's Degree II represents teachers with BA's earning typical wages for BA-level pre-k teachers.
Source: Calculated by the Institute for Women's Policy Research. For methodology and data sources see Appendix A and Appendix B, Table 4.

Nine-Hour Program

The annual costs of operating a nine-hour program range from $13,649 per-child per-year in the highest quality scenario, to $7,887 per-child in the lowest quality situation discussed here (see Table 3). With the exception of the highest quality scenario, the hourly costs of operating a nine-hour program are up to ten percent less than those of operating a six-hour program, depending on the level of quality. The cost of the highest quality nine-hour program is just one quarter of a percent higher than the cost of the highest quality six-hour program. The generally lower hourly costs of the nine-hour program scenarios are the result of essential instructional support, non-instructional, and infrastructure costs being spread out over more hours.

The Relative Cost of Quality Improvements

The percentage change in spending associated with increasing teacher qualifications or decreasing class size will depend on both the desired magnitude of improvements and the structural and other quality characteristics of the existing pre-k system. The cost grids above can provide a general, preliminary guide in assessing the potential increase in operational costs[j] for a move from one level of quality to the next. For example, a six-hour program with a class size of 20 and a BA requirement for teachers at the current pre-k salary level (BA II) that moves to a class size of 15 would bring approximately a 20.5 percent increase in the state's per child cost for pre-k (see Appendix B, Table 6, for the percent change in per child cost at each level of quality). If that program were to instead improve its pre-k teacher salary from current pre-k levels to kindergarten levels (BA II to BA I), the per-child cost would increase by roughly 11.3 percent. Here, improving teacher qualifications would cost a state less than decreasing class size. In a different scenario, however, improving teacher qualifications may be more costly than improving class size. For example, a six-hour program that has a maximum class size of 20 and a teacher credential level of CDA will find that moving to a maximum class size of 15 is less costly than credentialing teachers to the level of a Bachelor's degree at current kindergarten teacher pay levels, with decreasing class size adding 18.3 percent to the per-child cost and increasing teacher credentials from the lowest to the highest level adding 29.8 percent to the per-child cost.

Again, the actual costs states incur for different quality improvements depend upon the existing system's costs, quality level, and new program design and goals. Still, our cost grids and percent cost increase matrix (see Appendix B, Table 6) serve as a rough guide to assessing the relative costs associated with increasing teacher qualifications and decreasing class size and may help guide the early stages of program and policy design. States might use this exercise to consider the potential differential impact of their investments and the gains associated with different strategies for quality improvement.

Considerations When Interpreting the Cost Estimates

The reader should keep several factors in mind when interpreting the cost figures presented here. First, one should use caution when comparing the pre-k estimates presented here with estimates of costs associated with other programs such as child care or K-12 education, or even with pre-k spending estimates prepared by others. The estimates here may appear relatively high because they include an array of instructional support services and infrastructure costs (see Chart 2) that are often absent from other estimates. On the other hand, the on-the-ground implementation of pre-k programs may require additional infrastructure components that are not represented within these estimates, such as the cost of college credits associated with training a workforce of BA-level teachers.

Costs incurred by some states in moving from one required quality level to the next, however, could be less than what we estimate in the above charts. For example, some states may have a larger than average supply of pre-k classrooms that already meet upgraded quality standards, and/or some teachers that already meet new qualifications criteria and are already paid according to new wage standards. In such states the additional cost of reducing classroom size and improving teacher credentials may be lower than indicated here.

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[j] Readers should remember that the cost estimates reported here do not include the full cost of workforce development for improving teacher credentials, because of the high level of state-to-state variance in costs associated with this type of investment.

It should also be noted that these estimates are based largely on national median cost figures and do not reflect the variation in costs by state. State-by-state differences in per-child-hour costs are not only due to cost of living factors, but also due to differences in the existing early learning infrastructure. The estimates presented here, however, do fall within the range of state-reported costs per-child per-year, when considered on a per-child-hour basis (calculations not shown).[11] State-by-state differences in reported per-child spending are due a host of factors, including cost of living, the quality and level of early learning infrastructure, and state investments in early learning. There is also a great deal of variation in how states calculate and report their spending and in the types of costs they include. For example, states may not have accurate data on local expenditures that may cover portions of program costs. Details on what states include in their self-reported estimates of costs are generally unavailable and it is likely that states, when reporting per-child spending, omit many of the costs associated with infrastructure, such as costs of governance, and some of the costs of daily operations and administration, particularly when these costs are covered under existing structures like a public school system.

As mentioned previously, the IWPR estimates also do not cover the costs of raising the overall wages of pre-k teachers with less than a Bachelor's degree. Pre-k teachers, and early care and education professionals generally, are paid less than similarly skilled professionals in other fields, which has negative effects on teacher retention and program quality. Research suggests that raising their wages and providing access to career ladders would have benefits for children and communities more broadly.[12] Those seeking to expand and improve pre-k programs should strive to build in adequate education and compensation for staff at all credential levels.

Chapter 3
Research on the Benefits of High-Quality Pre-K

Child Outcomes

In discussing pre-k costs, it is important to keep in mind that the benefits of quality pre-k to children, families, and communities far outweigh program costs. While it is not within the purview of this paper to calculate the specific economic and social benefits to be gained from particular quality improvements, previous research indicates how investments in structural quality (in terms of teacher qualifications, class sizes, and teacher-to-child ratios) might be expected to pay off in terms of improved child, family, and community outcomes.

A substantial and growing body of evidence suggests that high-quality early care and education improves children's cognitive skills and school readiness.[13] Several recent evaluations demonstrate the short-term benefits of quality pre-k. For example, a study of voluntary pre-k for all in Tulsa, Oklahoma, found that the program significantly improved children's letter/word identification, spelling, and applied problem solving.[14] These positive effects applied across income levels and, for the most part, across racial and ethnic backgrounds.[15] The length of day was related to outcomes for some children. Hispanic and Black children in full-day programs saw greater improvements than those in half-day programs, though both settings produced significant benefits.[16] According to our 12-cell grid, Oklahoma's program is of high-quality in terms of teacher education, and of lower quality in terms of class size. The program requires teachers to have a Bachelor's degree and certificate in early childhood education and sets the maximum class size at 20 children, with a teacher-to-child ratio of 1:10.

A recent study by the National Institute for Early Education Research evaluates the impact of state-funded pre-k programs on school readiness (language, literacy, and mathematical development) in five states (Michigan, New Jersey, Oklahoma, South Carolina, and West Virginia).[17] Each of these states requires teachers to hold a Bachelor's degree and certification in early childhood development.[18]

Maximum class sizes range from 15 in New Jersey's Abbott pre-k program to 20 in Oklahoma, South Carolina, and West Virginia.[19] Analysis of new prekindergartners' and new kindergartners' test scores showed that one year of pre-k had positive effects on 4-year-olds' receptive vocabulary, print awareness, and math test scores. Significant results were found in New Jersey and Oklahoma for receptive vocabulary, in Michigan, New Jersey, South Carolina, and West Virginia for print awareness, and in New Jersey and Michigan for math skills.[20]

Several evaluations document remarkable long-term benefits of quality pre-k. The Perry Preschool Project provided low-income African American three- and four-year-olds with a part-day pre-k intervention that was administered in the Ypsilanti, Michigan, public schools by certified public school teachers (who are required to have a bachelor's degree) and included regular home-visits by the classroom teacher.[21] Maximum group sizes for the program ranged from 20 to 25 children and teacher-to-child ratios were approximately 1:6.[22] This project would be of high-quality on our 12-cell grid in terms of teacher education. It would be considered lower quality in terms of maximum class size, but the teacher-to-student ratio was very high.[23] Longitudinal analysis found that pre-k program participants were less in need of special education, less likely to receive welfare, and less likely to commit crime. They also had higher earnings and more wealth later in life than those in the study's control group. Recent analysis of study participants' well-being at age 40 found that those who had received the pre-k intervention continued to experience more positive outcomes than those who did not, having lower arrest rates, a higher likelihood of being employed, and higher earnings.[24]

The Chicago Child-Parent Centers pre-k program provided part-day early care and education to 1,539 predominantly African American children as well as a complementary program of activities for their parents designed to strengthen both home and school life.[25] Teachers held Bachelor's degrees and participated in ongoing professional development activities, and the teacher-to-child ratio was 2:17.[26] This places the Chicago Child-Parent Centers at high-quality in terms of teacher education, and at medium quality in terms of class size, according to our quality grid. In addition to demonstrating greater cognitive skills upon entering kindergarten, program participants had better scholastic achievement, lower rates of delinquency, and higher rates of school completion, relative to those in a comparison group.[27] Positive effects were observed fifteen years after program participation.[28]

The Michigan School Readiness Program (MSRP) requires teachers to hold a Bachelor's degree, and the maximum class size is 18 children, with a teacher-to-child ratio of 1:8. A longitudinal study of the MSRP's impact on preschool-age children through age 10 found that program participants had significantly outpaced their non-program counterparts in development by kindergarten; were more ready to learn from kindergarten through grade 4; were less likely to be held back between the 2nd and 4th grades; and were more likely to attain satisfactory scores on the Michigan Educational Assessment Program tests in literacy and math.[29]

Head Start's Family and Child Experiences Survey (FACES), a random sample of Head Start programs from around the country conducted in 1997 and 2000, found that 10.9 percent of Head Start teachers held a graduate degree, 27.8 percent held a Bachelor's degree, 18.6 percent held an

Associate's degree, and 32.2 percent had some college in 2000.[30] Seventy-four percent of Head Start lead teachers had earned a CDA credential or a state-awarded preschool certificate and the average number of children per paid staff member in 2000 was 6.5.[31] Head Start also provides home visits conducted by case workers who arrange referrals to health and social services. Head Start programs would probably be on the lower end of our quality grid in terms of teacher education, and on the higher end of quality in terms of the ratio of staff to children. It is unclear, however, what the average maximum class size was in 2000, and this might make a difference in how we characterized the program's quality level. Analysis of the 2000 FACES cohort showed that Head Start children, who typically enter the program below national averages in literacy and math skills, experienced modest increases in their vocabulary, early writing, and letter identification skills, and slight increases in their math achievement over the program year.[32]

These evaluations of early care and education programs help to illustrate the relationship between class size and teacher qualifications, on the one hand, and child outcomes, on the other. Overall, programs with the most pronounced impacts on children's school readiness and cognitive development tend to have high teacher credentials; the programs vary quite a bit in terms of class size.

Benefits to Communities

In addition to yielding positive child outcomes, a number of economic impact studies show that early care and education brings economic benefits to communities and families.[33] For example, studies have demonstrated the benefits of quality pre-k to society via savings to public school systems and the public in general.[34] A recent cost-savings analysis finds that investment in early childhood education programs produces medium-term savings that range from about $2,600 to $9,500 per child through reduced need for special education, reduced grade repetition, higher educational productivity, and improved child well-being.[35] The report, *High/Scope Perry Preschool Study Through Age 40*, estimates that the economic benefits to the public for every dollar of investment into the Perry Preschool program has now reached $17.07.[36] These long-term economic returns are linked to programs that employ highly-qualified teachers and primarily serve low-income children.

Economic impact studies have shown that the child care industry generates nearly a billion dollars in gross receipts each year in Minnesota[37] and $2.08 billion in gross receipts each year in Florida.[38] Additional revenue and jobs are created outside of the child care industry through the purchase of goods and services in other industries.[39] In Florida, for example, 9,741 new jobs were created through linkages to the child care industry generating another $951 million in revenues.[40] Programs that employ more teachers per child would have stronger regional economic development benefits than those employing fewer or less-educated teachers because of both increased employment and earnings and increased engagement of a region's higher education system.

Early care and education programs also support working parents, leading to savings for business in the form of improved employee retention and reduced replacement costs.[41] A study of Oklahoma's child care industry concluded that it helps more than half (100,000) of the state's married couple families with preschool-age children maintain their dual-wage earning and helps the state's 75,000 single-parent families with preschool-age children continue to work.[42] Analysis of Survey of Income

and Program Participation (SIPP) data by the Institute for Women's Policy Research found that reliable and regular sources of child care play an important role in helping low-income mothers with preschool-age children maintain steady employment.[43] Thus, pre-k programs, especially those with longer hours and those that are offered within a child care setting, play a key role in enabling parents to work, thereby increasing the earnings of employed parents and yielding important benefits to the economy.

Chapter 4
Examples of High-Quality Publicly-Funded Pre-K Systems

Having estimated the costs of operating a hypothetical program at different quality levels, and having explored the types of benefits associated with high-quality early education based on formal evaluations of (often experimental) programs, this section gives examples of currently operating high-quality, publicly-funded programs that are being implemented on a broad scale. We discuss the quality components and reported state spending on these programs. The information presented here was derived primarily from the National Institute for Early Education Research, *The State of Preschool*: *2006 State Preschool Yearbook*.[44] Exemplary programs include the North Carolina More at Four Program, the New Jersey Abbott Program, and the Tennessee Early Childhood Education Pre-Kindergarten Program. Each of these programs closely resembles the highest levels of quality in our 12-cell matrix.

North Carolina More at Four

North Carolina's More at Four is a rapidly expanding publicly-funded pre-k program for four-year olds that increased its enrollment almost twelve-fold in four years, serving 15,227 children, or 12 percent of four-year-olds, in 2005-2006 compared with 1,250 children in 2001-2002. It operates six hours per day, five days per week during the academic year. The program settings are mixed, consisting of public school, Head Start, private child care centers, and some faith-based organizations.

The More at Four program is positioned very highly on the quality grid presented in this report, and met all ten quality benchmarks established by NIEER. The state mandates a maximum class size of 18 children per classroom, with a teacher-to-child ratio of 1:9. The minimum teacher credential requirement is a Bachelor's degree plus a Birth-K license. Assistant teachers are required to have a CDA or meet No Child Left Behind requirements (2 year degree plus CDA or early childhood education coursework or experience). All teachers in public settings that meet these requirements are paid on a public school salary scale, as are those in private settings who have a teaching license. In 2005-2006 the annual state per-child expenditures were reported at $3,892 with matching funds required from local sources.

New Jersey Abbott Program

The New Jersey Abbott Program was initiated as a result of a 1998 State Supreme Court ruling and currently operates in 31 of the state's highest poverty districts, providing high-quality pre-k to three- and four-year-olds. The program met nine of ten NIEER quality benchmarks in 2005-2006, and served 18 percent of four-year-olds in the state and 15 percent of three-year-olds. All children in eligible districts have access to the program, which operates in public schools, as well as in private settings and Head Start agencies through contracts with the school districts. The program provides pre-k for six hours per day, with extended-day services for up to ten hours of care, and is open five days per week during the academic year.

School districts ensure that individual programs meet the standards set out by the state Supreme Court, regardless of their setting. All teachers are required to have a Bachelor's degree accompanied by certification in early care and are paid on the public school salary scale, regardless of setting (public or private). Assistant teachers are required to have at least a high school diploma. The maximum acceptable class size for the program is 15 children per classroom, with a teacher-to-child ratio of 2:15.

All programs are monitored and evaluated annually with an emphasis on classroom quality and program-level outcomes. Annual evaluations of curricula are conducted to promote uniform quality of education across settings. The annual per-child state expenditure for the Abbott Program was $11,022 in 2005-2006. The New Jersey Department of Education and Department of Human Services fully fund the program. No local match is required.

Tennessee Early Childhood Education

The Tennessee Early Childhood Education (ECE) program began in 1998 as a pilot program partially financed by federal Temporary Assistance to Needy Families funds in its early years. The program serves 11 percent of four-year-olds and one percent of three-year-olds in the state, and like programs in Arkansas and North Carolina, the Tennessee ECE program operates in a wide variety of settings. It is open for 5.5 hours per-day (excluding nap time), five days per week, for the length of school year.

The maximum allowable class size for four-year-olds in the Tennessee program is 20 children with a 1:10 teacher-to-child ratio. All teachers are required to have a Bachelor's degree with a pre-k teacher license. Assistant teachers must have a CDA. All teachers working in public settings are required to be paid on a public school scale. In 2005-2006 the annual reported state spending per-child was $5,057.

As these programs demonstrate, a number of states have found it feasible and desirable to fund high-quality pre-k programs. The reported costs of these programs vary substantially by state, due to differences in quality and other program characteristics across states, and because states differ in what they include in their cost estimates.

Conclusion

As both public and private early learning programs expand their participation in pre-k programs, it is important to recognize that the ability to deliver quality relies in large part on adequate funding. To reap the full benefits that pre-k has to offer, public and private investments must cover components of quality such as small classrooms and highly qualified teachers, and where possible should allow for full-day service. This report provides a tool for leaders to begin to consider expenditures associated with varying levels of quality, and provides a starting point for discussions of investments needed for quality enhancements.

While the costs of expanding and upgrading the quality of early care and education can be substantial, depending on existing quality levels, research shows that benefits outweigh costs. High-quality pre-k improves children's school readiness and cognitive development and yields long-term benefits into adulthood. It also supports regional economies by creating new jobs and linkages to other business, and helps parents maintain employment. With such impressive benefits, greater investments in pre-k, and other high-quality programs for all children ages 0-5 can bring many benefits to communities throughout our nation.

Appendix A
Detailed Explanation of Cost Estimate Methods

These estimates are developed by adding direct and infrastructure costs for a four classroom public or private program. Per-child-hour costs are derived by dividing total costs by the number of children served, the number of classrooms, the hours of service provided, and the number of operating days per year. The resulting per-child-hour cost is multiplied by the number of hours per day and days of service per year to calculate a per-child-year cost for programs of varying levels of quality.

Estimation of Direct Service Costs: Instructional Personnel Expenditures

To estimate direct service costs, we use a proxy budget developed for a "typical" pre-k program. Such a program operates on a public school schedule five days per week, 185 days per year, in four classrooms.

We estimate program costs based on three alternative assumptions about the length of program day. One alternative is to operate a program for six hours, the approximate length of a typical school day, between the hours of 8:00 a.m. to 3:30 p.m.[k] We also estimate costs for a three-hour program that also operates during the hours of the typical school day, but can serve two sets of children—one in the morning, and one in the afternoon.[l] Finally, we prepare estimates for a nine-hour program, operating within the hours 7:00 a.m. to 6:00 p.m. (starting and ending times would vary by classroom within that period) to better meet the needs of working parents.[m] We assume that quality pre-k is available all the times children are in the program, and that the staffing patterns and teacher-to-child ratios reflect the quality criteria regardless of the length of day.

Operating a program on a six-hour, or full school-day schedule would require employing four teachers and four assistant teachers working full-time. With a three-hour schedule, the same staffing would serve two sets of children throughout the day. A nine-hour program would employ seven full-time teachers and seven full-time assistant teachers.

Data on teachers' salaries come from the National Prekindergarten Study (NPS) of the Yale University Child Study Center[45] and the Occupational Employment Survey (OES), May 2005, of the Bureau of Labor Statistics. The National Prekindergarten Study collected information on wages of lead and assistant teachers employed in state-funded pre-kindergarten programs nationwide. This data source allows us to estimate the wages of pre-k teachers by education level.

Adjusted into 2007 dollars, the wages of pre-k teachers with a high school diploma are $12.09 per hour; pre-k teachers with an Associate's degree earn $15.14 per hour; pre-k teachers with a Bachelor's Degree earn $22.03 per hour; and teachers with a Master's Degree earn $31.23 per hour. [n] Assistant teachers are paid $12.09 per hour.[o] Because we do not have a data source for assistant teacher wages in a pre-k setting, we set

[k] See Appendix B, Table 2 for proxy budgets and staffing at different levels of quality.
[l] See Appendix B, Table 3.
[m] See Appendix B, Table 4.
[n] The estimates provided by Walter Gilliam were inflated to 2007 dollars using the CPI-U index. Source: Bureau of Labor Statistics <http://data.bls.gov/cgi-bin/surveymost?cu> (April 28, 2006).
[o] Salary levels used in our analysis are roughly comparable with those derived from the 2002-2004 March Supplements of the Current Population Survey (CPS), which does not provide separate data for Kindergarten and Pre-Kindergarten teachers (see Appendix B, Table 5 for comparison).

the assistant teacher wage figure to be equal to that of a teacher with a CDA. Unfortunately, the available data did not permit us to separate teachers with a high school diploma and CDA from those with a high school diploma without a CDA; thus we use the high school diploma wages for the CDA qualification/pay level.

For all salary levels except in the BA I scenario, teacher wages correspond with existing wage levels reported by pre-k teachers.[46] Currently, close to 14 percent of pre-k teachers nationwide earn salaries that fall below the federal poverty guidelines.[47] The wage for BA I-level teachers ($29.85 per hour in 2007 dollars) is based on public school kindergarten teacher salaries, which are generally higher and likely to be more effective for retaining highly skilled early educators.[48]

Our estimates of the costs of employer-provided benefits include both mandatory and discretionary benefits. Mandatory benefits include Social Security and Medicare, state and federal unemployment insurance, and workers' compensation insurance. The mandatory benefits are equal to 10.65 percent of wages/salary. We also assume that all staff in the pre-k program will be covered by health, life, and disability insurance and receive pension benefits. Based on 2004 and 2005 data from the Bureau of Labor Statistics' National Compensation Survey, we estimate these total non-mandatory benefits to be 18 percent of wages/salary. The total benefits add up to 28.65 percent of salary/wages, which is comparable to the national average for teachers employed in public settings.[49]

Estimation of Direct Service Costs: Essential Instructional Support Expenditures

Essential Instructional Support Expenditures include student support services (including social work and guidance counseling) and in-service teacher training, food, child transportation, and instructional supplies. Each of these items supports teacher effectiveness and children's capacity for learning. We estimate these essential instructional support expenses utilizing public school expenditure data from the U.S. Department of Education, National Center for Education Statistics, National Public Education Financial Survey.[50] These public school expenditures were adapted by IWPR for preschool settings and converted into 2007 dollars.

Estimation of Direct Service Costs: Non-Instructional Expenditures

To estimate non-instructional expenses, including general administration and support services, school administration, and operations and maintenance, we began by analyzing and comparing information from a number of data sources, including data from personal communications with private provider professional organizations, data compiled for proxy budgets from previous state-level cost estimates using the IWPR/ECPR methodology,[51] and data from public schools (see above). After this review we decided to base estimates of non-instructional expenditures in this paper on data from the National Public Education Financial Survey conducted by the U.S. Department of Education, National Center for Education Statistics.[52] These expenditures were adapted by IWPR for preschool settings and converted into 2007 dollars.

Our cost estimates do not directly include a profit margin for private for-profit centers. However, the public school expenditure data include administrative costs that would not be incurred by private centers, and therefore can serve as a proxy for a profit margin. Judging by comparisons of budgets of for-profit centers and data on public school administration, we surmise that the typical profit margin of a successful for-profit center may be roughly comparable to additional administrative expenses experienced by public

schools as compared to private centers. We estimate that new providers should expect to experience an after-tax profit margin of about 5 percent.[P]

Estimation of Infrastructure Cost

Infrastructure costs are highly dependent on the stage of implementation that a program is in as well as the state of existing infrastructure at the program's onset or expansion. While in the early years of program implementation facilities costs can be very high, for example, they decrease once the facilities are in place. Similarly, in the early years of operation, technical assistance and consultation expenditures may be very high. As the program develops and staff gain operational experience, technical assistance and consultation costs may decrease. On the other hand, expenditures for program assessment and evaluation may increase as a program progresses.

In these estimates we depart from the original IWPR/ECPR methodology by not including the costs of teachers' professional development in our infrastructure estimate. Estimating professional development costs associated with creating a supply of qualified teachers would require rather complicated calculations regarding the supply of BA-level teachers, national pre-kindergarten utilization, and the demand for pre-kindergarten teachers at different levels of education and credentials. At the national level such assumptions would have a high error margin, would likely reduce the precision of the total estimates, and were beyond the scope of this report. Basic, in-service staff training costs were included in Direct Service Costs under Essential Instructional Support Expenditures.

Assuming that the program is fully implemented, we estimate infrastructure costs to be 11.5 percent of the average total costs for each program type (six-hour, three-hour, and nine-hour). We base these infrastructure costs on methodology and examples set out in *The Price of School Readiness,*[53] which were based on state-level cost estimates, as well as assessments of child care center costs researched by other experts in the field. The 11.5 percent figure includes technical assistance and consultation to the program, monitoring and quality assurance, kindergarten readiness assessments, program evaluation, facilities renovation, and the cost of governance. We would expect some variation in the costs of these elements from state to state. For example, facilities renovation, which is a majority of the infrastructure costs, depends on highly variable local renovation costs and existing facility inventory and conditions. We estimate that facilities costs account for 10 percent of total costs based on past cost studies.[54] A portion of this 10 percent accounts for rent or mortgage payments in cases where the building is not fully owned; facilities renovation and maintenance are also included. Subcomponents of estimated infrastructure costs break down as follows: technical assistance and consultation to programs amount to an estimated 1.47 percent of the total infrastructure costs, and monitoring and quality assurance account for 5.89 percent of infrastructure costs. Kindergarten readiness assessment costs are 1.02 percent of the total costs, while evaluation costs account for 4.30 percent. Facility renovation costs comprise 86.9 percent, the largest portion of the estimated infrastructure costs. Governance costs amount to 0.42 percent of the infrastructure costs.

[P] This profit margin estimate is derived from personal communication with leadership staff of Bright Horizons Family Solutions, a leading provider of early education in the United States, Canada, and Europe.

Appendix B

Appendix B, Table 1. Summary of Costs Per-Child-Hour and Per-Child-Year by Quality Level

	Per-Child Per Hour Costs			Annual Per-Child Costs, 185 days per year		
	Class Size:			Class Size:		
Teacher Qualifications:	**15**	**17**	**20**	**15**	**17**	**20**
6-Hour Program						
Bachelor's Degree I	$8.18	$7.49	$6.72	$9,076	$8,313	$7,454
Bachelor's Degree II	$7.27	$6.69	$6.04	$8,070	$7,425	$6,700
Associate's Degree	$6.47	$5.99	$5.44	$7,184	$6,643	$6,035
CDA	$6.12	$5.67	$5.17	$6,792	$6,298	$5,741
3-Hour Program						
Bachelor's Degree I	$8.82	$8.12	$7.33	$4,893	$4,506	$4,071
Bachelor's Degree II	$7.91	$7.32	$6.66	$4,390	$4,062	$3,694
Associate's Degree	$7.11	$6.62	$6.06	$3,947	$3,672	$3,361
CDA	$6.76	$6.30	$5.79	$3,751	$3,499	$3,214
9-Hour Program						
Bachelor's Degree I	$8.20	$7.42	$6.54	$13,649	$12,348	$10,884
Bachelor's Degree II	$7.14	$6.48	$5.74	$11,889	$10,795	$9,564
Associate's Degree	$6.21	$5.66	$5.05	$10,338	$9,427	$8,401
CDA	$5.80	$5.30	$4.74	$9,652	$8,821	$7,887

Notes: Costs include direct and indirect service costs and system infrastructure costs except workforce development.
Data on teachers' salaries come from the National Pre-Kindergarten Study (Gilliam 2006) and the Bureau of Labor Statistics (for Bachelor's Degree I; U.S. Department of Labor, Bureau of Labor Statistics 2007b).
Source: Calculated by the Institute for Women's Policy Research.

Appendix B, Table 2: Detailed Costs Per Classroom by Quality Level for a Six-Hour Program

Classroom Hours of Operation

Operates as Pre-K for 6 hours, 185 days a year
Open 8:00am-3:30pm
1 session per classroom
4 classrooms

Staffing Pattern

4 Teachers 8:00am-3:30pm
4 Asst Teachers 8:00am-3:30pm
7.5 hours per day
200 working days per year
15 days leave

Level of Teacher Education

	Bachelor's Degree I				Bachelor's Degree II				Associate's Degree				CDA			
		Annual Expenses Per School Class Size				Annual Expenses Per School Class Size				Annual Expenses Per School Class Size				Annual Expenses Per School Class Size		
A) Direct Costs		20	17	15		20	17	15		20	17	15		20	17	15
1) Instructional Personnel Expenditures																
Salaries	**Annual Salary**				**Annual Salary**				**Annual Salary**				**Annual Salary**			
4 Teachers[a]	$44,768	$179,074	$179,074	$179,074	$33,039	$132,157	$132,157	$132,157	$22,711	$90,845	$90,845	$90,845	$18,139	$72,558	$72,558	$72,558
4 Assistant Teachers[b]	$18,139	$72,558	$72,558	$72,558	$18,139	$72,558	$72,558	$72,558	$18,139	$72,558	$72,558	$72,558	$18,139	$72,558	$72,558	$72,558
Substitute Teachers($75/day)[c]	$9,000	$9,000	$9,000	$9,000	$9,000	$9,000	$9,000	$9,000	$9,000	$9,000	$9,000	$9,000	$9,000	$9,000	$9,000	$9,000
Subtotal Salaries		*$260,631*	*$260,631*	*$260,631*		*$213,714*	*$213,714*	*$213,714*		*$172,403*	*$172,403*	*$172,403*		*$154,116*	*$154,116*	*$154,116*
Mandatory benefits (as a percentage of salary)	**Percent of Salary**				**Percent of Salary**				**Percent of Salary**				**Percent of Salary**			
Social Security + Medicare	7.65%	$19,250	$19,250	$19,250	7.65%	$15,661	$15,661	$15,661	7.65%	$12,500	$12,500	$12,500	7.65%	$11,101	$11,101	$11,101
Unemployment	2.00%	$5,033	$5,033	$5,033	2.00%	$4,094	$4,094	$4,094	2.00%	$3,268	$3,268	$3,268	2.00%	$2,902	$2,902	$2,902
Workers Compensation	1.00%	$2,516	$2,516	$2,516	1.00%	$2,047	$2,047	$2,047	1.00%	$1,634	$1,634	$1,634	1.00%	$1,451	$1,451	$1,451
Subtotal Mandatory Benefits	10.65%	*$26,799*	*$26,799*	*$26,799*	10.65%	*$21,802*	*$21,802*	*$21,802*	10.65%	*$17,402*	*$17,402*	*$17,402*	10.65%	*$15,455*	*$15,455*	*$15,455*
Optional Benefits[d]																
Health, Life, and Disability Insurance	11.00%	$27,679	$27,679	$27,679	11.00%	$22,519	$22,519	$22,519	11.00%	$17,974	$17,974	$17,974	11.00%	$15,963	$15,963	$15,963
Annual Pension	7.00%	$17,614	$17,614	$17,614	7.00%	$14,330	$14,330	$14,330	7.00%	$11,438	$11,438	$11,438	7.00%	$10,158	$10,158	$10,158
Subtotal Optional Benefits		*$45,294*	*$45,294*	*$45,294*		*$36,849*	*$36,849*	*$36,849*		*$29,413*	*$29,413*	*$29,413*		*$26,121*	*$26,121*	*$26,121*
Subtotal Instructional Personnel Expenditures		*$332,724*	*$332,724*	*$332,724*		*$272,365*	*$272,365*	*$272,365*		*$219,218*	*$219,218*	*$219,218*		*$195,691*	*$195,691*	*$195,691*
2) Essential Instructional Support Expenditures[e]	**Annual Per Child Cost**				**Annual Per Child Cost**				**Annual Per Child Cost**				**Annual Per Child Cost**			
Student Supports Services and In-Service Staff Training[f]	$690	$55,218	$46,935	$41,413	$690	$55,218	$46,935	$41,413	$690	$55,218	$46,935	$41,413	$690	$55,218	$46,935	$41,413
Food	$352	$28,161	$23,937	$21,121	$352	$28,161	$23,937	$21,121	$352	$28,161	$23,937	$21,121	$352	$28,161	$23,937	$21,121
Instructional Supplies	$266	$21,265	$18,076	$15,949	$266	$21,265	$18,076	$15,949	$266	$21,265	$18,076	$15,949	$266	$21,265	$18,076	$15,949
Transportation	$184	$14,757	$12,543	$11,068	$184	$14,757	$12,543	$11,068	$184	$14,757	$12,543	$11,068	$184	$14,757	$12,543	$11,068
Subtotal Essential Instructional Support Expenditures		*$119,402*	*$101,491*	*$89,551*		*$119,402*	*$101,491*	*$89,551*		*$119,402*	*$101,491*	*$89,551*		*$119,402*	*$101,491*	*$89,551*
Total Instructional Expenditures		***$452,125***	***$434,215***	***$422,275***		***$391,767***	***$373,856***	***$361,916***		***$338,620***	***$320,709***	***$308,769***		***$315,093***	***$297,183***	***$285,242***
3) Non-Instructional Costs[e]	**Annual Per Child Cost**				**Annual Per Child Cost**				**Annual Per Child Cost**				**Annual Per Child Cost**			
General Administration	$406	$32,462	$27,593	$24,347	$406	$32,462	$27,593	$24,347	$406	$32,462	$27,593	$24,347	$406	$32,462	$27,593	$24,347
School Administration	$257	$20,551	$17,468	$15,413	$257	$20,551	$17,468	$15,413	$257	$20,551	$17,468	$15,413	$257	$20,551	$17,468	$15,413
Operation and Maintenance	$434	$34,733	$29,523	$26,050	$434	$34,733	$29,523	$26,050	$434	$34,733	$29,523	$26,050	$434	$34,733	$29,523	$26,050
Subtotal Non-Instructional Expenditures		*$87,746*	*$74,584*	*$65,809*		*$87,746*	*$74,584*	*$65,809*		*$87,746*	*$74,584*	*$65,809*		*$87,746*	*$74,584*	*$65,809*
Total Direct Costs		***$539,871***	***$508,799***	***$488,085***		***$479,513***	***$448,440***	***$427,726***		***$426,366***	***$395,294***	***$374,579***		***$402,839***	***$371,767***	***$351,052***
B) Infrastructure Costs[g]		$56,464	$56,464	$56,464		$56,464	$56,464	$56,464		$56,464	$56,464	$56,464		$56,464	$56,464	$56,464
Total Direct + Infrastructure		***$596,335***	***$565,263***	***$544,549***		***$535,977***	***$504,905***	***$484,190***		***$482,830***	***$451,758***	***$431,043***		***$459,303***	***$428,231***	***$407,516***
Per-Child and Per-Classroom Costs		**Hourly Costs**				**Hourly Costs**				**Hourly Costs**				**Hourly Costs**		
Hourly Cost per Classroom		$134.31	$127.31	$122.65		$120.72	$113.72	$109.05		$108.75	$101.75	$97.08		$103.45	$96.45	$91.78
Per-Child Hourly Cost		$6.72	$7.49	$8.18		$6.04	$6.69	$7.27		$5.44	$5.99	$6.47		$5.17	$5.67	$6.12

Notes: All estimates were converted into 2007 dollars using the CPI-U.

[a] Hourly wages of Bachelor's Degree I teachers ($29.85) are based on the median annual salary of kindergarten teachers in the year 2006 ($44,768 in 2007 dollars) as published in the Bureau of Labor Statistics' Occupational Employment Statistics (U.S. Department of Labor, Bureau of Labor Statistics 2007b). Hourly wages of Bachelor's Degree II, Associate's Degree, and CDA teachers are from the National Prekindergarten Study and are also presented in 2007 dollars (Gilliam 2006). Wage and salary figures for teachers are based on a 7.5-hour working day, which includes 1 hour of break time and a half hour of planning time daily, 200 days per year, with 15 days of paid leave.

[b] Hourly wages of assistant teachers are based on the median wages of prekindergarten teachers with a High-School degree from the National Pre-Kindergarten Study (Gilliam 2006). See Appendix B Table 5 for further wage information.

[c] Substitute teachers' costs are based on the 15 days of leave per year, at $75 per teacher per day.

[d] Optional benefits (health, life, and disability insurance; pension benefits) as a percentage of salary are estimated using data from the Bureau of Labor Statistics (U.S. Department of Labor, Bureau of Labor Statistics 2005).

[e] Essential Instructional Support Expenditures and Non-Instructional costs were derived from the National Center for Education Statistics, National Public Education Finance Survey 2002-2003 and accompanying technical report Revenues and Expenditures for Public Elementary and Secondary Education: School Year 2002-03 (Hill and Johnson 2003).

[f] Student Support Services include social work, guidance, health, psychological services, speech pathology, audiology, and other student support services.

[g] Infrastructure costs are estimated at 11.5 percent of average total costs for a six-hour program.

Source: Calculated by the Institute for Women's Policy Research.

Appendix B, Table 3: Detailed Costs Per Classroom by Quality Level for a Three-Hour Program

Classroom Hours of Operation

Operates as Pre-K for 3 hours, 185 days a year
Open 8:00am-3:30pm
2 sessions per classroom
4 classrooms

Staffing Pattern

4 Teachers 8:00am-3:30pm
4 Asst Teachers 8:00am-3:30pm
7.5 hours per day
200 working days per year
15 days leave

Level of Teacher Education

	Bachelor's Degree I				Bachelor's Degree II				Associate's Degree				CDA			
		Annual Expenses Per School				Annual Expenses Per School				Annual Expenses Per School				Annual Expenses Per School		
		Class Size				Class Size				Class Size				Class Size		
A) Direct Costs		20	17	15		20	17	15		20	17	15		20	17	15
1) Instructional Personnel Expenditures																
Salaries	**Annual Salary**				**Annual Salary**				**Annual Salary**				**Annual Salary**			
4 Teachers[a]	$44,768	$179,074	$179,074	$179,074	$33,039	$132,157	$132,157	$132,157	$22,711	$90,845	$90,845	$90,845	$18,139	$72,558	$72,558	$72,558
4 Assistant Teachers[b]	$18,139	$72,558	$72,558	$72,558	$18,139	$72,558	$72,558	$72,558	$18,139	$72,558	$72,558	$72,558	$18,139	$72,558	$72,558	$72,558
Substitute Teachers ($75/day)[c]	$9,000	$9,000	$9,000	$9,000	$9,000	$9,000	$9,000	$9,000	$9,000	$9,000	$9,000	$9,000	$9,000	$9,000	$9,000	$9,000
Subtotal Salaries		*$260,631*	*$260,631*	*$260,631*		*$213,714*	*$213,714*	*$213,714*		*$172,403*	*$172,403*	*$172,403*		*$154,116*	*$154,116*	*$154,116*
Mandatory benefits (as a percentage of salary)	**Percent of Salary**				**Percent of Salary**				**Percent of Salary**				**Percent of Salary**			
Social Security + Medicare	7.65%	$19,250	$19,250	$19,250	7.65%	$15,661	$15,661	$15,661	7.65%	$12,500	$12,500	$12,500	7.65%	$11,101	$11,101	$11,101
Unemployment	2.00%	$5,033	$5,033	$5,033	2.00%	$4,094	$4,094	$4,094	2.00%	$3,268	$3,268	$3,268	2.00%	$2,902	$2,902	$2,902
Workers Compensation	1.00%	$2,516	$2,516	$2,516	1.00%	$2,047	$2,047	$2,047	1.00%	$1,634	$1,634	$1,634	1.00%	$1,451	$1,451	$1,451
Subtotal Mandatory Benefits	10.65%	*$26,799*	*$26,799*	*$26,799*	10.65%	*$21,802*	*$21,802*	*$21,802*	10.65%	*$17,402*	*$17,402*	*$17,402*	10.65%	*$15,455*	*$15,455*	*$15,455*
Optional Benefits[d]																
Health, Life, and Disability Insurance	11.00%	$27,679	$27,679	$27,679	11.00%	$22,519	$22,519	$22,519	11.00%	$17,974	$17,974	$17,974	11.00%	$15,963	$15,963	$15,963
Annual Pension	7.00%	$17,614	$17,614	$17,614	7.00%	$14,330	$14,330	$14,330	7.00%	$11,438	$11,438	$11,438	7.00%	$10,158	$10,158	$10,158
Subtotal Optional Benefits		*$45,294*	*$45,294*	*$45,294*		*$36,849*	*$36,849*	*$36,849*		*$29,413*	*$29,413*	*$29,413*		*$26,121*	*$26,121*	*$26,121*
Subtotal Instructional Personnel Expenditures		*$332,724*	*$332,724*	*$332,724*		*$272,365*	*$272,365*	*$272,365*		*$219,218*	*$219,218*	*$219,218*		*$195,691*	*$195,691*	*$195,691*
2) Essential Instructional Support Expenditures[e]	**Annual Per Child Cost**				**Annual Per Child Cost**				**Annual Per Child Cost**				**Annual Per Child Cost**			
Student Supports Services and In-Service Staff Training[f]	$690	$55,218	$46,935	$41,413	$690	$55,218	$46,935	$41,413	$690	$55,218	$46,935	$41,413	$690	$55,218	$46,935	$41,413
Food	$352	$56,323	$47,874	$42,242	$352	$56,323	$47,874	$42,242	$352	$56,323	$47,874	$42,242	$352	$56,323	$47,874	$42,242
Instructional Supplies	$266	$42,531	$36,151	$31,898	$266	$42,531	$36,151	$31,898	$266	$42,531	$36,151	$31,898	$266	$42,531	$36,151	$31,898
Transportation	$184	$14,757	$12,543	$11,068	$184	$14,757	$12,543	$11,068	$184	$14,757	$12,543	$11,068	$184	$14,757	$12,543	$11,068
Subtotal Essential Instructional Support Expenditures		*$168,828*	*$143,504*	*$126,621*		*$168,828*	*$143,504*	*$126,621*		*$168,828*	*$143,504*	*$126,621*		*$168,828*	*$143,504*	*$126,621*
Total Instructional Expenditures		***$501,552***	***$476,228***	***$459,345***		***$441,193***	***$415,869***	***$398,986***		***$388,046***	***$362,722***	***$345,839***		***$364,520***	***$339,195***	***$322,313***
3) Non-Instructional Costs[e]	**Annual Per Child Cost**				**Annual Per Child Cost**				**Annual Per Child Cost**				**Annual Per Child Cost**			
General Administration	$406	$32,462	$27,593	$24,347	$406	$32,462	$27,593	$24,347	$406	$32,462	$27,593	$24,347	$406	$32,462	$27,593	$24,347
School Administration	$257	$20,551	$17,468	$15,413	$257	$20,551	$17,468	$15,413	$257	$20,551	$17,468	$15,413	$257	$20,551	$17,468	$15,413
Operation and Maintenance	$434	$34,733	$29,523	$26,050	$434	$34,733	$29,523	$26,050	$434	$34,733	$29,523	$26,050	$434	$34,733	$29,523	$26,050
Subtotal Non-Instructional Expenditures		*$87,746*	*$74,584*	*$65,809*		*$87,746*	*$74,584*	*$65,809*		*$87,746*	*$74,584*	*$65,809*		*$87,746*	*$74,584*	*$65,809*
Total Direct Costs		***$589,298***	***$550,812***	***$525,155***		***$528,939***	***$490,453***	***$464,796***		***$475,792***	***$437,306***	***$411,649***		***$452,266***	***$413,780***	***$388,122***
B) Infrastructure Costs[g]		$62,030	$62,030	$62,030		$62,030	$62,030	$62,030		$62,030	$62,030	$62,030		$62,030	$62,030	$62,030
Total Direct + Infrastructure		***$651,329***	***$612,842***	***$587,185***		***$590,970***	***$552,484***	***$526,826***		***$537,823***	***$499,337***	***$473,679***		***$514,296***	***$475,810***	***$450,152***
Per-Child and Per-Classroom Costs		**Hourly Costs**				**Hourly Costs**				**Hourly Costs**				**Hourly Costs**		
Hourly Cost per Classroom		$146.70	$138.03	$132.25		$133.10	$124.43	$118.65		$121.13	$112.46	$106.68		$115.83	$107.16	$101.39
Per-Child Hourly Cost		$7.33	$8.12	$8.82		$6.66	$7.32	$7.91		$6.06	$6.62	$7.11		$5.79	$6.30	$6.76

Notes: All estimates were converted into 2007 dollars using the CPI-U.

[a] Hourly wages of Bachelor's Degree I teachers ($29.85) are based on the median annual salary of kindergarten teachers in the year 2006 ($44,768 in 2007 dollars) as published in the Bureau of Labor Statistics' Occupational Employment Statistics (U.S. Department of Labor, Bureau of Labor Statistics 2007b). Hourly wages of Bachelor's Degree II, Associate's Degree, and CDA teachers are from the National Prekindergarten Study and are also presented in 2007 dollars (Gilliam 2006). Wage and salary figures for teachers are based on a 7.5-hour working day, which includes 1 hour of break time and a half hour of planning time daily, 200 days per year, with 15 days of paid leave.

[b] Hourly wages of assistant teachers are based on the median wages of prekindergarten teachers with a High-School degree from the National Pre-Kindergarten Study (Gilliam 2006). See Appendix B Table 5 for further wage information.

[c] Substitute teachers' costs are based on the 15 days of leave per year, at $75 per teacher per day.

[d] Optional benefits (health, life, and disability insurance; pension benefits) as a percentage of salary are estimated using data from the Bureau of Labor Statistics (U.S. Department of Labor, Bureau of Labor Statistics 2005).

[e] Essential Instructional Support Expenditures and Non-Instructional costs were derived from the National Center for Education Statistics, National Public Education Finance Survey 2002-2003 and accompanying technical report Revenues and Expenditures for Public Elementary and Secondary Education: School Year 2002-03 (Hill and Johnson 2003).

[f] Student Support Services include social work, guidance, health, psychological services, speech pathology, audiology, and other student support services.

[g] Infrastructure costs are estimated at 11.5 percent of average total costs for a three-hour program.

Source: Calculated by the Institute for Women's Policy Research.

Appendix B, Table 4: Detailed Costs Per Classroom by Quality Level for a Nine-Hour Program

Classroom Hours of Operation

Operates as Pre-K for 9 hours, 185 days a year
Open 8:00am-3:30pm
1 session per classroom
4 classrooms

Staffing Pattern

7 Teachers 8:00am-3:30pm
7 Asst Teachers 8:00am-3:30pm
7.5 hours per day
200 working days per year
15 days leave

Level of Teacher Education

	Bachelor's Degree I				Bachelor's Degree II				Associate's Degree				CDA			
		Annual Expenses Per School Class Size				Annual Expenses Per School Class Size				Annual Expenses Per School Class Size				Annual Expenses Per School Class Size		
A) Direct Costs		20	17	15		20	17	15		20	17	15		20	17	15
1) Instructional Personnel Expenditures																
Salaries	Annual Salary				Annual Salary				Annual Salary				Annual Salary			
4 Teachers[a]	$44,768	$313,379	$313,379	$313,379	$33,039	$231,274	$231,274	$231,274	$22,711	$158,979	$158,979	$158,979	$18,139	$126,976	$126,976	$126,976
4 Assistant Teachers[b]	$18,139	$126,976	$126,976	$126,976	$18,139	$126,976	$126,976	$126,976	$18,139	$126,976	$126,976	$126,976	$18,139	$126,976	$126,976	$126,976
Substitute Teachers ($75/day)[c]	$15,750	$15,750	$15,750	$15,750	$15,750	$15,750	$15,750	$15,750	$15,750	$15,750	$15,750	$15,750	$15,750	$15,750	$15,750	$15,750
Subtotal Salaries		*$456,105*	*$456,105*	*$456,105*		*$374,000*	*$374,000*	*$374,000*		*$301,705*	*$301,705*	*$301,705*		*$269,702*	*$269,702*	*$269,702*
Mandatory benefits (as a percentage of salary)	Percent of Salary				Percent of Salary				Percent of Salary				Percent of Salary			
Social Security + Medicare	7.65%	$33,687	$33,687	$33,687	7.65%	$27,406	$27,406	$27,406	7.65%	$21,876	$21,876	$21,876	7.65%	$19,427	$19,427	$19,427
Unemployment	2.00%	$8,807	$8,807	$8,807	2.00%	$7,165	$7,165	$7,165	2.00%	$5,719	$5,719	$5,719	2.00%	$5,079	$5,079	$5,079
Workers Compensation	1.00%	$4,404	$4,404	$4,404	1.00%	$3,583	$3,583	$3,583	1.00%	$2,860	$2,860	$2,860	1.00%	$2,540	$2,540	$2,540
Subtotal Mandatory Benefits	10.65%	*$46,898*	*$46,898*	*$46,898*	*10.65%*	*$38,154*	*$38,154*	*$38,154*	*10.65%*	*$30,454*	*$30,454*	*$30,454*	*10.65%*	*$27,046*	*$27,046*	*$27,046*
Optional Benefits[d]																
Health, Life, and Disability Insurance	11.00%	$48,439	$48,439	$48,439	11.00%	$39,408	$39,408	$39,408	11.00%	$31,455	$31,455	$31,455	11.00%	$27,935	$27,935	$27,935
Annual Pension	7.00%	$30,825	$30,825	$30,825	7.00%	$25,078	$25,078	$25,078	7.00%	$20,017	$20,017	$20,017	7.00%	$17,777	$17,777	$17,777
Subtotal Optional Benefits		*$79,264*	*$79,264*	*$79,264*		*$64,485*	*$64,485*	*$64,485*		*$51,472*	*$51,472*	*$51,472*		*$45,711*	*$45,711*	*$45,711*
Subtotal Instructional Personnel Expenditures		*$582,267*	*$582,267*	*$582,267*		*$476,639*	*$476,639*	*$476,639*		*$383,632*	*$383,632*	*$383,632*		*$342,460*	*$342,460*	*$342,460*
2) Essential Instructional Support Expenditures[e]	Annual Per Child Cost				Annual Per Child Cost				Annual Per Child Cost				Annual Per Child Cost			
Student Supports Services and In-Service Staff Training[f]	$690	$55,218	$46,935	$41,413	$690	$55,218	$46,935	$41,413	$690	$55,218	$46,935	$41,413	$690	$55,218	$46,935	$41,413
Food	$352	$28,161	$23,937	$21,121	$352	$28,161	$23,937	$21,121	$352	$28,161	$23,937	$21,121	$352	$28,161	$23,937	$21,121
Instructional Supplies	$266	$21,265	$18,076	$15,949	$266	$21,265	$18,076	$15,949	$266	$21,265	$18,076	$15,949	$266	$21,265	$18,076	$15,949
Transportation	$184	$14,757	$12,543	$11,068	$184	$14,757	$12,543	$11,068	$184	$14,757	$12,543	$11,068	$184	$14,757	$12,543	$11,068
Subtotal Essential Instructional Support Expenditures		*$119,402*	*$101,491*	*$89,551*		*$119,402*	*$101,491*	*$89,551*		*$119,402*	*$101,491*	*$89,551*		*$119,402*	*$101,491*	*$89,551*
Total Instructional Expenditures		***$701,668***	***$683,758***	***$671,818***		***$596,040***	***$578,130***	***$566,190***		***$503,033***	***$485,123***	***$473,183***		***$461,861***	***$443,951***	***$432,011***
3) Non-Instructional Costs[e]	Annual Per Child Cost				Annual Per Child Cost				Annual Per Child Cost				Annual Per Child Cost			
General Administration	$406	$32,462	$27,593	$24,347	$406	$32,462	$27,593	$24,347	$406	$32,462	$27,593	$24,347	$406	$32,462	$27,593	$24,347
School Administration	$257	$20,551	$17,468	$15,413	$257	$20,551	$17,468	$15,413	$257	$20,551	$17,468	$15,413	$257	$20,551	$17,468	$15,413
Operation and Maintenance	$434	$34,733	$29,523	$26,050	$434	$34,733	$29,523	$26,050	$434	$34,733	$29,523	$26,050	$434	$34,733	$29,523	$26,050
Subtotal Non-Instructional		$87,746	$74,584	$65,809		$87,746	$74,584	$65,809		$87,746	$74,584	$65,809		$87,746	$74,584	$65,809
Total Direct Costs		***$789,414***	***$758,342***	***$737,627***		***$683,786***	***$652,714***	***$632,000***		***$590,779***	***$559,707***	***$538,992***		***$549,607***	***$518,535***	***$497,820***
B) Infrastructure Costs[g]		$81,316	$81,316	$81,316		$81,316	$81,316	$81,316		$81,316	$81,316	$81,316		$81,316	$81,316	$81,316
Total Direct + Infrastructure		***$870,730***	***$839,658***	***$818,943***		***$765,102***	***$734,030***	***$713,315***		***$672,095***	***$641,023***	***$620,308***		***$630,923***	***$599,851***	***$579,136***
Per-Child and Per-Classroom Costs		Hourly Costs				Hourly Costs				Hourly Costs				Hourly Costs		
Hourly Cost per Classroom		$130.74	$126.07	$122.96		$114.88	$110.21	$107.10		$100.92	$96.25	$93.14		$94.73	$90.07	$86.96
Per-Child Hourly Cost		$6.54	$7.42	$8.20		$5.74	$6.48	$7.14		$5.05	$5.66	$6.21		$4.74	$5.30	$5.80

Notes: All estimates were converted into 2007 dollars using the CPI-U.

[a] Hourly wages of Bachelor's Degree I teachers ($29.85) are based on the median annual salary of kindergarten teachers in the year 2006 ($44,768 in 2007 dollars) as published in the Bureau of Labor Statistics' Occupational Employment Statistics (U.S. Department of Labor, Bureau of Labor Statistics 2007b). Hourly wages of Bachelor's Degree II, Associate's Degree, and CDA teachers are from the National Prekindergarten Study and are also presented in 2007 dollars (Gilliam 2006). Wage and salary figures for teachers are based on a 7.5-hour working day, which includes 1 hour of break time and a half hour of planning time daily, 200 days per year, with 15 days of paid leave.

[b] Hourly wages of assistant teachers are based on the median wages of prekindergarten teachers with a High-School degree from the National Pre-Kindergarten Study (Gilliam 2006). See Appendix B Table 5 for further wage information.

[c] Substitute teachers' costs are based on the 15 days of leave per year, at $75 per teacher per day.

[d] Optional benefits (health, life, and disability insurance; pension benefits) as a percentage of salary are estimated using data from the Bureau of Labor Statistics (U.S. Department of Labor, Bureau of Labor Statistics 2005).

[e] Essential Instructional Support Expenditures and Non-Instructional costs were derived from the National Center for Education Statistics, National Public Education Finance Survey 2002-2003 and accompanying technical report Revenues and Expenditures for Public Elementary and Secondary Education: School Year 2002-03 (Hill and Johnson 2003).

[f] Student Support Services include social work, guidance, health, psychological services, speech pathology, audiology, and other student support services.

[g] Infrastructure costs are estimated at 11.5 percent of average total costs for a nine-hour program.

Source: Calculated by the Institute for Women's Policy Research.

Appendix B, Table 5. Median Wages of Teachers by Education Level, National Prekindergarten Study (NPS) and Current Population Survey (CPS)

	National Prekindergarten Study Wages of Prekindergarten Teachers[a]			CPS Wages of Preschool and Kindergarten Teachers for Comparison[b]	
Education	Sample Size	Median Wage (2004 dollars)	Median Wage (2007 dollars)	Sample Size	Median Wage (2004 dollars)
High School	508	$11.03	$12.09	32	$9.89
Some College	N/A	N/A	N/A	40	$11.83
AA	491	$13.81	$15.14	49	$13.00
BA	1692	$20.09	$22.03	425	$17.31
MA	866	$27.49	$30.14	231	$20.83

Source: a) Gilliam 2006; b) Institute for Women's Policy Research 2005.

Appendix B, Table 6. Percent Cost Increases For Selected Quality Upgrades

Increase Teacher Qualifications							Decrease Class Size						
6 Hour Program													
	Change in Hourly Cost Per Child			Change in Annual Cost Per Child				Change in Hourly Cost Per Child			Change Annual Cost Per Child		
	15	17	20	15	17	20		***17 to 15***	***20 to 17***	***20 to 15***	***17 to 15***	***20 to 17***	***20 to 15***
CDA to BA I	33.6%	32.0%	29.8%	33.6%	32.0%	29.8%	BA I	9.2%	11.5%	21.8%	9.2%	11.5%	21.8%
BA II to BA I	12.5%	12.0%	11.3%	12.5%	12.0%	11.3%	BA II	8.7%	10.8%	20.5%	8.7%	10.8%	20.5%
AA to BA II	12.3%	11.8%	11.0%	12.3%	11.8%	11.0%	AA	8.1%	10.1%	19.0%	8.1%	10.1%	19.0%
CDA to AA	5.8%	5.5%	5.1%	5.8%	5.5%	5.1%	CDA	7.9%	9.7%	18.3%	7.9%	9.7%	18.3%
3 Hour Program													
	Change in Hourly Cost Per Child			Change in Annual Cost Per Child				Change in Hourly Cost Per Child			Change Annual Cost Per Child		
	15	17	20	15	17	20		***17 to 15***	***20 to 17***	***20 to 15***	***17 to 15***	***20 to 17***	***20 to 15***
CDA to BA I	30.4%	28.8%	26.6%	30.4%	28.8%	26.6%	BA I	8.6%	10.7%	20.2%	8.6%	10.7%	20.2%
BA II to BA I	11.5%	10.9%	10.2%	11.5%	11.2%	10.4%	BA II	8.1%	10.0%	18.9%	8.1%	10.0%	18.9%
AA to BA II	11.2%	10.6%	9.9%	11.2%	12.4%	11.4%	AA	7.5%	9.2%	17.4%	7.5%	9.2%	17.4%
CDA to AA	5.2%	4.9%	4.6%	5.2%	4.9%	4.6%	CDA	7.2%	8.8%	16.7%	7.2%	8.8%	16.7%
9 Hour Program													
	Change in Hourly Cost Per Child			Change in Annual Cost Per Child				Change in Hourly Cost Per Child			Change Annual Cost Per Child		
	15	17	20	15	17	20		***17 to 15***	***20 to 17***	***20 to 15***	***17 to 15***	***20 to 17***	***20 to 15***
CDA to BA I	41.4%	40.0%	38.0%	41.4%	40.0%	38.0%	BA I	10.5%	13.4%	25.4%	10.5%	13.4%	25.4%
BA II to BA I	14.8%	14.4%	13.8%	14.8%	14.4%	13.8%	BA II	10.1%	12.9%	24.3%	10.1%	12.9%	24.3%
AA to BA II	15.0%	14.5%	13.8%	15.0%	14.5%	13.8%	AA	9.7%	12.2%	23.1%	9.7%	12.2%	23.1%
CDA to AA	7.1%	6.9%	6.5%	7.1%	6.9%	6.5%	CDA	9.4%	11.9%	22.4%	9.4%	11.9%	22.4%

Note: IWPR did not assume that class size reduction would result in program expansions, such as additional classrooms, teachers, and children served. Therefore, the cost increases associated with class size reduction presented here are due to the reduction in total number of children served and costs being spread out across fewer children.
Source: IWPR Calculations based on Appendix B, Table 1.

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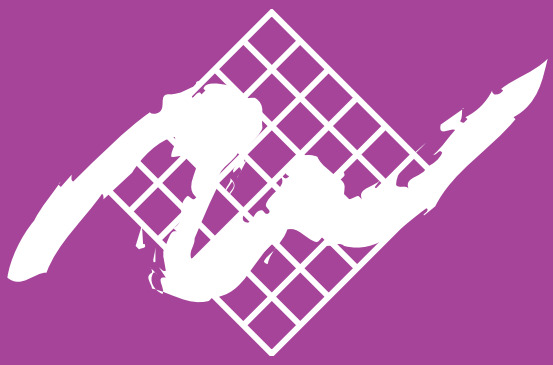

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