

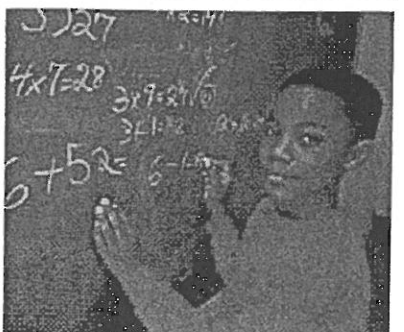
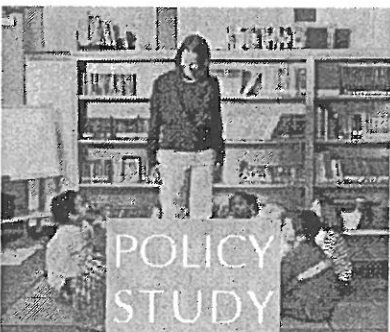
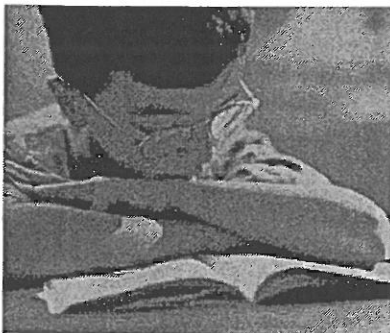
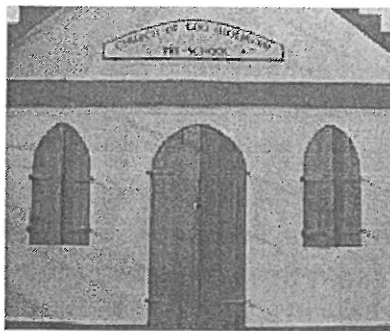


May 2006

ASSESSING PROPOSALS FOR PRESCHOOL AND KINDERGARTEN:

ESSENTIAL INFORMATION FOR PARENTS, TAXPAYERS AND POLICYMAKERS

By Darcy Olsen with Lisa Snell



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Assessing Proposals for Preschool and Kindergarten: Essential Information for Parents, Taxpayers and Policymakers

By Darcy Olsen with Lisa Snell

Executive Summary

Proposals for universal preschool and all-day kindergarten are an increasingly popular policy solution for everything from low academic achievement, to reducing crime, to lowering the dropout rate. In summer 2005, a national task force co-chaired by Arizona Gov. Janet Napolitano called for \$8 billion annually in federal support for preschool.¹ Similarly, in his 2006 response to President Bush's State of the Union Speech, Virginia Gov. Tim Kaine acknowledged universal preschool as a silver bullet to help create a better future for the United States. Kaine said, "There's a Better way... Many states are working to make high quality Pre-Kindergarten accessible to every family."²

States are moving quickly to expand access to state-run preschool. According to Libby Doggett, Pre-K Now's executive director, states cumulatively have committed more than \$14 billion to early education.³ Arizona, New Mexico, Washington, South Carolina, Virginia, and West Virginia are all considering various models of universal preschool, and Illinois Gov. Rod Blagojevich recently announced plans to make Illinois the first state in the nation to offer universal preschool to both three- and four-year-olds. California has a universal preschool initiative on the June 2006 ballot. Nationwide, at least 40 states provide state funding for preschool programs, and at least 28 considered legislation to expand state-funded preschool programs in 2005.⁴ Three states—Georgia, Oklahoma, and Florida—offer universal preschool.

The movement toward all-day kindergarten is also gaining popularity in the states. Currently nine states mandate full-day kindergarten and seven states offer school districts financial incentives to offer full-day kindergarten. Governors in Arizona, Indiana, and Massachusetts have made full-day kindergarten a top legislative priority in 2006 and many other state legislatures are considering full-

day kindergarten proposals. For example, California is considering legislation that would make it mandatory for all California school districts to offer full-day kindergarten by 2010.⁵ According to the Education Commission of the States approximately 66 percent of kindergartners already attend full-day kindergarten.⁶

California and Arizona are leading the charge toward universal preschool and full-day kindergarten. California may become the national prototype for universal preschool. Hollywood director Rob Reiner is promoting “Preschool for All,” a June 2006 ballot initiative, calling it “a broad-based, multi-year, non-partisan advocacy campaign to achieve voluntary preschool for all four-year-olds in California.”⁷

While universal preschool for all children sounds like a laudable goal, the Preschool for All Act represents a de-facto institutionalization of preschool in California by creating a new, government-managed \$2.5 billion a year entitlement program that subsidizes the preschool choices of middle-class and wealthy families. Although it is a voluntary program, it would change the structure of the current mixed-provider preschool market into a state-controlled monopoly.

California’s Preschool for All initiative would be financed by a 1.7 percent tax increase on individuals who earn over \$400,000 (or couples earning over \$800,000), pushing the tax rate on upper-income families to a national high of 12 percent.⁸ This new tax represents an 18 percent tax increase on wealthy Californians.

Similarly, Arizona’s Governor Napolitano is representative of the national sentiment to incorporate preschool education and full-day kindergarten into the current K-12 public school system. In 2004 Governor Napolitano released a School Readiness Action Plan that included the widely discussed proposal for state-funded all-day kindergarten and a lesser-discussed plan for “state-supported preschool.”⁹ Speaking before the National Task Force on Public Education, the governor said her aim was “ensconcing early care and education as a lockstep component of public schooling.”¹⁰ She considers the plan a “starting point” for the state’s role in the “development of Arizona’s youngest children.”¹¹

Universal preschool advocates like Rob Reiner and Governor Napolitano argue that early schooling improves academic achievement and offers children long-term academic and economic benefits. Yet this study finds the evidence supporting those claims to be unfounded, at best.

To help determine the efficacy of early education programs, we examine the results of some of the programs considered to be early education models—including, Perry Preschool, Chicago Child Parent Studies, Abecedarian, and Head Start—and find the research to be flawed and therefore of questionable value. We also review information from the National Center for Education Statistics, which reports no lasting reading, math, or science achievement differences between children who attend half-day and full-day kindergarten. We also examine the results of the National Assessment of Education Progress in Georgia and Oklahoma, where universal preschool has been fully

implemented without quantifiable benefit. We find the widespread adoption of preschool and full-day kindergarten is unlikely to improve student achievement.

America's flexible approach to early education gives children a strong foundation. Skills assessment at kindergarten entry and reports by kindergarten teachers show a large and increasing majority of preschoolers are prepared for kindergarten. The effectiveness of the current system is also evident in early test scores. At age 10, U.S. children have higher reading, math, and science scores than their European peers who attend the government preschools cited by advocates as models for the United States. To the degree that the state remains involved in financing early education, we recommend measures for transparency, program assessment, and improved flexibility through individual student funding.

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Part 1

Introduction

The United States' move toward more government preschool and kindergarten programs is not unprecedented. In France, Italy, and the United Kingdom, there is nearly universal enrollment of three- and four-year-olds in center-based institutions.¹² A few states across the country have adopted similar systems. Georgia created the first statewide universal preschool program for four-year-olds in 1993, and Oklahoma, New York, and West Virginia have moved in a similar direction. In 2002, Florida voters adopted a constitutional amendment requiring the state to provide free preschool for every four-year-old child.¹³

According to the National Childcare Information Center the United States currently spends more than \$20 billion annually on various day care and early education programs, including Head Start, preschool, and various daycare programs.¹⁴ As policymakers consider early education proposals, we have the opportunity to examine research on preschool and kindergarten, review experience and findings from domestic programs, and look to international data.

We find strong evidence that the widespread adoption of preschool and full-day kindergarten is unlikely to improve student achievement. For nearly 50 years, local, state, and federal governments and diverse private sources have spent billions of dollars funding early education programs. Many early interventions have had meaningful short-term effects on grade-level retention and special education placement. However, the effects of early interventions routinely disappear after children leave the programs.¹⁵ The phenomenon, known as “fade out,” is important because it means that early schooling may be immaterial to a child's later school performance, or that the current school system as structured is unable to sustain those early gains.

For mainstream children, there is little evidence to support the contention that formal preschool and kindergarten are necessary for school achievement or are more advantageous than learning in a traditional setting—and there is some evidence that day care and preschool can be detrimental.

Experience supports those findings. From 1965 to the present day, the United States underwent a sea change in formal early education. Preschool and kindergarten, which were rarely used in the late 1960s, are now the norm. Despite increased enrollment in formal early education programs, student achievement has shown little to no improvement. To the degree that international test data

are instructive, America's decentralized early education system is outperforming the European model and excels in equipping students for superior achievement in the elementary years.

Implicit in arguments in favor of universal preschool and full-day kindergarten is the presumption that the state should take more responsibility for educating young children. A large majority of "child advocates" envisions something similar, with almost 7 of 10 saying government policy should move toward a universal, national system similar to those of many European countries. Most parents feel otherwise. More than 70 percent of parents with young children say it is their responsibility to pay the costs of caring for their children, and only one in four would move toward a universal system paid for by the government. Also, a majority of low-income parents (those earning no more than \$25,000 per year) believes that bearing the cost is their responsibility and not society's. The public opinion research organization, Public Agenda, reports, "At the most basic level, parents of young children believe that having a full-time parental presence at home is what's best for very young children, and it is what most would prefer for their own family."¹⁶

Universal preschool advocates often attempt to address parents' concerns by saying participation in the programs will be voluntary. Today, all 50 states have compulsory attendance laws, applying generally to children between the ages of 5 and 18, and many policymakers have been forthright in calling for extending compulsory education to preschoolers.

For example, in 2001, District of Columbia Councilman Kevin Chavous proposed the "Compulsory School Attendance Amendment Act" to make school compulsory for every preschool-aged child in the nation's capital.¹⁷ The Honorable Zell Miller, former U.S. senator and Georgia governor, has also expressed a preference for mandatory enrollment, saying, "If I had a choice of pre-K or 12th grade being mandatory, I'd take pre-K in a second."¹⁸ For many people who are convinced that preschool is a necessity, mandatory attendance becomes the next logical step. As one prominent Vermont legislator explained when he proposed a study on the cost of compulsory preschool for three- and four-year-olds, compulsion is the only way to guarantee that children have an equal opportunity for education.¹⁹

Fundamentally, the preschool and kindergarten debate is not about the effectiveness or expense of the programs. At heart is the question of in whose hands the responsibility for young children should rest. On that question, plans to entrench the state further into early education cannot be squared with a free society that cherishes the primacy of the family over the state.

What Do We Know? Understanding the Research

Policymakers are interested in early education for several reasons. Some proponents see preschool and kindergarten as a politically palatable way to subsidize day care.²⁰ The primary argument made by many policymakers, including Arizona Gov. Janet Napolitano, Arizona State Superintendent of Public Instruction Tom Horne, and the Arizona State School Readiness Board, is that more early

learning will provide the experiences and environment necessary to promote the healthy development of children, leading to subsequent school achievement:

- State Superintendent of Public Instruction Tom Horne writes, “Studies show that a dollar spent on academically oriented all-day kindergarten can equal more than \$7 or \$8 spent in later grades in producing the same academic progress.”²¹
- Gov. Janet Napolitano writes, “Extensive research shows that full-day kindergarten improves students’ reading, writing and math skills, and it contributes to lower dropout rates.”²²
- The State School Readiness Board writes, “Full day kindergarten can lower grade retention, improve language and math skills, lead to higher achievement test scores in eighth grade, and improve attendance and social skills.”²³

These sentiments are echoed by leaders in other states advocating for universal preschool. California’s Superintendent of Public Instruction Jack O’Connell has argued that kids in high-quality universal preschool have a strong foundation in literacy and reading. As he wrote in a February 13th commentary in support of California’s universal preschool initiative, “perhaps most important, these lucky kids have a good foundation for learning to read—the skill they will most need to thrive through high school and beyond.”²⁴

Unfortunately, most of the research informing those statements is limited in its applicability to mainstream middle-class students and plagued by methodological shortcomings (including small sample size, high attrition rates, infrequent random selection, and infrequent use of comparison groups). Some of the research has been discredited.

For instance, Superintendent Horne suggests that one dollar invested in full-day kindergarten can save seven dollars in later years. Although he does not specify, this figure appears to be based on a flawed cost-benefit analysis from one study of 123 children conducted from 1962–1965, which independent peer reviewers found to be compromised by significant sampling and methodological errors. It also lacks the ability to inform the preschool discussion for mainstream children because it included only children at risk of “retarded intellectual functioning.”²⁵ Further undermining confidence in the results is the fact that its findings have never been replicated.

Taken as a whole, a review of the research shows that many early interventions have had meaningful short-term effects on disadvantaged students’ cognitive ability, grade-level retention, and special-education placement. However, most research also indicates that the effects of early interventions disappear after children leave the programs.²⁶

This finding helps explain how two researchers can look at the same study and reach different conclusions: The National Center for Education Statistic (NCES) studies, for instance, which have received significant press coverage and are discussed later in detail, show a slight advantage for full-day kindergartners over half-day kindergartners as measured at the end of the kindergarten year. Critically, however, they show no differences in academic achievement between the two groups by the end of third grade.

Recent research conducted by UC Santa Barbara has also confirmed the “fade out” phenomenon for preschool children. A February 2006 study by researchers Russell W. Rumberger and Loan Tran found no lasting academic impact from state-run preschool programs. They found that while children enrolled in preschool had some moderate advantages in kindergarten performance, the benefit dissipated by third grade.²⁷

The phenomenon known as “fade out” is important to discussions of preschool and kindergarten because it means that early schooling may not measurably affect a child’s later academic performance. However, if fade out occurs, not because programs are ineffective, but because the schools children later attend are unable to maintain those gains, then it is reasonable to conclude that preschool and kindergarten will not result in lasting gains unless or until elementary and secondary schools are significantly improved. Either conclusion points invariably to the need for reform within the current school system.

As will be discussed later, in the few instances where research has shown the potential of early intervention for improving children’s long-term outcomes, that research has been conducted on severely disadvantaged children only in intense settings involving a level of intervention far different from either preschool or kindergarten. For instance, in the widely cited Abecedarian program, children were placed in the program as infants, at the average age of just over four months old.

Importantly, most research has concentrated on children considered at risk of school failure, and that research does not inform questions about the majority of mainstream students. The studies conducted on mainstream children generally do not show benefits from early education programs. According to David Weikart, past president of the High/Scope Educational Research Foundation responsible for Perry Preschool, “For middle-class youngsters with a good economic basis, most programs are not able to show much in the way of difference.”²⁸ Similarly, a 2005 study on the long-term economic benefits of high-quality preschool by the RAND Corporation found little evidence to support the benefits of preschool for non-disadvantaged children. RAND acknowledges that the one study analyzing mainstream children “found that children participating in preschools not targeted to disadvantaged children were no better off in terms of high school or college completion, earnings, or criminal justice system involvement than those not going to any preschool.”²⁹

A significant body of research shows that formal early education can be detrimental to mainstream children. David Elkind, professor of child development at Tufts University and author of numerous books on cognitive and social development in children and adolescents, explains,

*The image of child competence introduced in the 1960s was intended to remedy some of the social inequalities visited upon low-income children. But the publicity given the arguments of child competence was read and heard by educators and middle-class parents as well... For this reason it was uncritically appropriated for middle-class children by parents and educators. While the image of childhood competence has served a useful function for low-income children and children with special needs, it has become the rationale for the miseducation of middle-class children...*³⁰

Elkind explains that children who receive academic instruction too early—generally before age six or seven—are often put at risk for no apparent gain. By attempting to teach the wrong things at the wrong time, early instruction can permanently damage a child’s self-esteem, reduce a child’s natural eagerness to learn, and block a child’s natural gifts and talents. He concludes, “There is no evidence that such early instruction has lasting benefits, and considerable evidence that it can do lasting harm... If we do not wake up to the potential danger of these harmful practices, we may do serious damage to a large segment of the next generation...”³¹

A November 2005 study by researchers at Stanford University and the University of California, Berkeley analyzed data from more than 14,000 kindergartners from the National Center for Education Statistics’ Early Childhood Longitudinal Study. They found evidence that preschool hinders social development and created poor social behavior, such as bullying and aggression, and a lack of motivation to take part in classroom activities. Those patterns for former center-based preschoolers were the strongest among white children from high-income families and among low-income black children. The study, “How much is too much? The Influence of Preschool Centers on Children’s Development Nationwide,” found that children who attended preschool at least 15 hours a week are more likely to display more negative social behaviors, such as acting up or having trouble cooperating, than their peers. Children from better-off families were most likely to exhibit social and emotional development problems, said UC Berkeley sociologist and co-author Bruce Fuller.³²

In a February 2006 study of Quebec’s universal preschool program examining more than 33,000 children between 1994 and 2002, economists from the C.D. Howe Institute find negative outcomes for children enrolled in universal childcare. They write:

*Several measures we looked at suggest that children were worse off in the years following the introduction of the universal childcare program. We studied a wide range of measures of child well-being from anxiety and hyperactivity to social and motor skills. For almost every measure, we find that the increased use of childcare was associated with a decrease in their well-being relative to other children. For example, reported fighting and aggressive behavior increased substantially.*³³

The notable absence of benefits for mainstream children coupled with evidence that early education programs can be detrimental to their development should be of critical concern in light of the fact that policymakers seek preschool and full-day kindergarten for *all* children, not just the small percentage classified as being at risk for school failure.³⁴

Part 1

Ready or Not? An Overview of America's Preschoolers

Discussions of preschool are premised partly on the notion that many children are inadequately prepared for entry into kindergarten. For instance, the federal initiative *Goals 2000* established “readiness” as the nation’s first education goal, stating, “By the year 2000, all children in America will start school ready to learn.”³⁵ Yet there is little agreement in child development literature, among program proponents, or among parents about what children should know and what skills they should possess or by what age, which makes defining “readiness” highly subjective.³⁶

Here we address the question of whether children are “ready” for kindergarten by examining: (1) widely used proxy measures for assessing readiness; (2) concrete skills assessment at kindergarten entry; and (3) how kindergartners perform on measures that kindergarten teachers say are the most important for kindergarten preparedness. On these measures, data indicate that most children entering kindergarten are equipped with the knowledge and traits required to begin the kindergarten year.

In the *Goals 2000* literature and elsewhere, researchers use preschool participation rates and the frequency with which parents read to their children as two important indicators of readiness.³⁷ By those measures, a high and increasing percentage of American preschoolers are ready for kindergarten. Data show only 5 percent of three-year-olds attended preschool in 1965—today, 42 percent attend. Sixteen percent of four-year-olds attended preschool in 1965—today, that figure is 68 percent.³⁸

Data also show families engage their children in literacy activities regularly and with increasing frequency. As measured from 1993 to 1999, the percentage of preschoolers who are read to three or more times per week has increased from 78 percent to 81 percent. The percentage of preschoolers who are taught letters, words, or numbers with equal frequency has increased from 58 percent to 64 percent. The upward trend is also present in the increasing percentage of preschoolers who are taught songs or music, and have done arts and crafts with a family member.³⁹

Therefore, according to the two common proxy measures of readiness—preschool enrollment rates and early literacy activities—a majority and increasing number of preschoolers are prepared for kindergarten entry. Although there may be room for improvement, the proxy data indicate that the problem of under-preparedness is narrow and diminishing.

In 1998 the National Center for Education Statistics (NCES) began conducting the Early Childhood Longitudinal Study (ECLS-K), which assessed 22,000 children at kindergarten entry and most recently reported on those students through the third grade. The study is the only one of its kind, using a nationally representative sample of children, and conducting a longitudinal and multivariate analysis that is a requirement for assessing the long-term benefits of early education and kindergarten programs. Researchers Nicholas Zill and Jerry West explain,

Until recently, we have lacked systematic information about what children know and can do at school entry. The data that have been available depended on reports about children's skills from the parents of preschool children, rather than on direct assessments of the children themselves. With the launching of the U.S. Department of Education's Early Childhood Longitudinal Study, Kindergarten Class of 1998–99 (ECLS-K) in the fall of 1998, however, measures of the knowledge, skill, health, and behavior of a large and nationally representative sample of American kindergartners are available.⁴⁰

The NCES assessment allows researchers to move beyond proxies into specific, verifiable skills. According to the first national assessment of the skills and traits children possess as they enter kindergarten—“America’s Kindergartners”—U.S. kindergartners have a strong start. In terms of concrete literacy development, 82 percent of children entering kindergarten have basic familiarity with print skills, such as knowing that print reads left to right.⁴¹ In terms of concrete mathematics knowledge, 94 percent of children entering kindergarten pass mathematics proficiency level one, that is, reading numerals, recognizing shapes, and counting to 10.⁴²

Finally, we review the factors that public school kindergarten teachers say are “very important” or “essential” to kindergarten readiness—physical health and eagerness to approach new activities.⁴³ Children’s health is reported as very good or excellent, with just 3 percent of children having “fair or poor general health.” At the same time, 92 percent of children are “eager to learn.”⁴⁴ Interestingly, only 10 percent of kindergarten teachers say knowing the letters of the alphabet is very important or essential to being ready for kindergarten, and just 8 percent consider being able to count as very important or essential.⁴⁵

According to the proxy measures of preschool enrollment rates and early literacy activities, concrete skills assessment at kindergarten entry, and measures ranked by kindergarten teachers as important or essential to preparing children for kindergarten, most children entering kindergarten appear to be equipped with the knowledge and traits required to begin the kindergarten year. The apparently high levels of preparedness call into question the notion that there is a widespread need for yet more government involvement in this arena.

Part 2

Full-day or Half-day? The Kindergarten Decision

The state of Arizona provides a useful case study on the national trend toward full-day kindergarten. In Arizona today, an estimated 56 percent of kindergartners attend half-day programs, and 44 percent attend full-time.⁴⁶ Currently, kindergarten is funded through diverse sources including the state general fund, local taxes, and parent fees. Governor Napolitano has proposed a centralized, statewide, full-day kindergarten program with a projected price of \$200 million annually, not including current spending on kindergarten or an additional \$100 million required to build new classrooms.⁴⁷

Will full-day kindergarten improve student achievement?

Local advocates point to the Alhambra and Chino school districts and the Reading First program as evidence that full-day kindergarten is worthwhile. Testifying about her views of full-day kindergarten, the governor said, “The Alhambra school district has long been a model for full day kindergarten success.” The governor continued by citing a performance analysis conducted by the Chino Valley unified school district, stating, “We know what works, we’re just not doing it.”⁴⁸ Jim Rice, Alhambra superintendent, believes the preschool programs are working, citing superior test scores for students attending the district’s preschool programs. “This is the type of information to get out to our Legislature,” Rice said. “This is working.”⁴⁹

We examine summaries of those three programs and find their research designs of poor quality, rendering them of little help in addressing the question of whether full-day kindergarten is beneficial to students.

Campbell and Stanley’s classic 1963 work, *Experimental and Quasi-Experimental Designs for Research*, has served as a basic text for social science researchers for generations, laying out a variety of research designs and what the authors describe as “threats to validity.”⁵⁰ Focusing on education research, they explain eight internal threats to validity (in which a researcher mistakenly attributes changes in an experimental group to the treatment), and four threats to external validity (whereby the researcher cannot legitimately generalize the results of the experiment to broader populations).

Only the highest form of experimental design, involving random assignment and a control group, can hope to remove all 12 threats to validity. Through this technique, students are randomly assigned to experimental and control groups, and if conducted properly, this technique creates two groups that are nearly identical (within a measurable amount of random error)—making the introduction of the treatment the crucial and measurable difference between the two groups. Conversely, on the opposite end of sophistication, is a design known as “Static Group Comparison.” The Alhambra and Chino summaries follow this design. Unfortunately, this design controls for just four threats to validity, making it one of the least valid and informative designs. The Reading First design is stronger, lacking only randomization, as explained below.

Alhambra. The Alhambra summary compares the scores of third-grade and fifth-grade students who attended *both preschool and full-day kindergarten* to the scores of all third-grade and fifth-grade students in the district, and reports that scores are higher for children who attended preschool and full-day kindergarten.⁵¹ The district concludes, “Students who attend a preschool program and full-day kindergarten are better prepared and have a much greater chance of succeeding in school.”⁵² However, it is unclear whether preschool and kindergarten attendance are responsible for the difference in test scores.

Higher scores could be the result of family background or other student characteristics and *not* due to preschool and all-day kindergarten.

Alhambra’s critical flaw is that the researchers did not test children before they entered the programs, which means the differences between the two groups may have been present *before the children entered school*. If for any reason—whether systematic or by random chance—those few students began the program with higher scores than average, the study is without scientific value. For instance, if the parents who placed their children in both preschool and all-day kindergarten did so because they value education more highly than the average family, this could lead to mistakenly attributing the higher scores of the treatment group to the program, when in fact the higher scores could be either partially or wholly the result of family background or other student characteristics. Given the body of research showing the primacy of family background and influence as the strongest educational determinant, this oversight is critical.⁵³ Without a pre-test or random assignment, we simply cannot know whether the test score differences are a result of the programs, family differences, self-selection bias, or other circumstances entirely.

Even if the findings are reflective of the Alhambra district, which cannot be discerned from the data the district provided, the research design the district chose does not address external validity—meaning that we can have no confidence that their results, even if accurate, can be generalized to Arizona. To obtain this information, the researchers would have to measure various characteristics of the student population, which was not done. The combined lack of pre-test information, random assignment, and small sample sizes render the report of little value. Moreover, the Alhambra summary is silent on the question of whether full-day kindergarten is more valuable than half-day

kindergarten since its treatment was preschool with full-day kindergarten: it simply did not control or test for this information.

Chino. Chino shows the test scores of kindergarten students in one elementary school (Del Rio) who had enrolled in full-day kindergarten compared to the scores of students who had enrolled in half-day programs. It finds higher test scores for children in the full-day programs. It is unclear from the summary how many children were tested each year, but the report states, “In the 2003 school year, out of 102 students in Del Rio’s kindergarten, parents of only 12 students chose a part-time program.”⁵⁴ We assume the number of participating students was similar in the years tested. The Chino summary suffers from the same flaws in the Alhambra report—no pre-test was conducted to assess the children’s starting points, assignment to the programs was not random, and the sample size was extremely susceptible to threats to validity. Lacking a pre-test, we simply cannot know whether the test score differences existed prior to school entry. Lacking random assignment, we cannot determine whether the test score differences are due to other factors, such as the educational values or background of the families choosing one program over the other. Additionally, with an assumed sample size of one dozen students, we can have no confidence that the results are anything but random. In addition, children were not monitored past kindergarten. The Chino data are therefore uninformative.

Reading First. The Reading First analysis has a stronger design than the Alhambra and Chino summaries, yet it, too, suffers from important shortcomings. The report examines the test scores of children in full-day and half-day kindergarten programs at school entry and at the end of the kindergarten year, and finds that 59.8 percent of the full-day kindergarteners met the “benchmark” compared to 42.6 percent of the half-day kindergarten group, a reported advantage of 17 percent.⁵⁵ It finds the full-day group made more progress in reading than did the students in half-day classes.⁵⁶

Like the Alhambra and Chino summaries, the Reading First analysis is also susceptible to selection bias, which means researchers cannot determine with any certainty whether the test score differences are the result of the kindergarten programs, or whether the results may be due to other factors such as the educational values of the families choosing one program over the other. Equally problematic is the absence of controls on the background of the students. There is no multivariate analysis, which would measure and control for a number of factors about each group. For example, one might measure the family income of every child and the highest level of educational attainment of each child’s mother and then run an analysis with each factor included as a separate control variable. If, for example, the all-day kindergarten group had significantly higher family incomes than the half-day group, it could lead to the impression that the all-day program led to score gains when in fact it was a difference in family background that led to the appearance of an experimental effect. Randomization minimizes these types of differences, and measuring and controlling for them in a multivariate analysis could nearly eliminate them. The Reading First analysis does neither. Moreover, the researchers did not measure whether the differences observed are statistically significant (i.e., not likely to be the result of chance). Therefore it is a heroic assumption to argue that all differences observed are due to the kindergarten programs.

Nonetheless, the size of the difference at the end of the kindergarten year is such that the data might withstand the introduction of the proper controls and could be found to be significant. This would be consistent with research showing that full-day kindergarten gives children a modest academic advantage over children in half-day programs.⁵⁷

We note, however, that the differences researchers observed in the Reading First analysis already begin to fade by the beginning of first grade. At the end of kindergarten, 17 percent more of the full-day students had attained the benchmark than those in the half-day program (59.8 percent compared to 42.6 percent). As the Reading First analysis reported, just a few months later, at the beginning of first grade, that advantage dropped almost in half, to 10 percent (58.7 percent compared to 49 percent). Similarly, at the end of kindergarten, 15 percent more of the half-day students were recommended for intensive support (34.7 percent compared to 19.9 percent), but by the beginning of first grade, the difference had dropped to 10 percent (23.6 percent compared to 13.6 percent).

We can be sure that, if those advantages exist, they also fade quickly.

Therefore, the reasonable conclusion to draw from the Reading First analysis is that, while we cannot be confident in the advantages of full-day kindergarten, we can be sure that, if those advantages exist, they also fade quickly. This finding would be consistent with the highest quality research conducted to date on kindergarten programs.

This is why the National Center for Education Statistics Early Childhood Longitudinal Study is so important. As noted earlier, the researchers assessed 22,000 children at kindergarten entry and most recently reported on those students through the third grade. The data set is the only one of its kind, giving researchers information on dozens of variables that affect student achievement, and, importantly, allowing them to control for the impact of kindergarten programs.

The ECLS-K research shows the same pattern documented by hundreds of early education studies: children in full-day kindergarten are afforded a modest academic edge over children in half-day kindergarten when measured at the end of the kindergarten year. However, that initial edge completely disappears by third grade.

At the end of the kindergarten year, the researchers find there is “little meaningful difference” on reading and math test scores between all-day and part-day kindergartners. They write, “In terms of kindergarten program type (i.e., all day or part day), there is little meaningful difference in the level of children’s end-of-year reading and mathematics knowledge.”⁵⁸ What is the difference? “On a reading scale that ranged from 0 to 72, the average kindergartner in a full-day program gained 10.6 points over the school year. For children in half-day kindergarten programs, the average gain was 9.4 points.”⁵⁹ Final reading scores were 32.1 and 31.3, respectively. The findings in mathematics are parallel.⁶⁰ The difference is modest, and all the more modest considering full-day students spend twice as much time in school as their half-day peers.

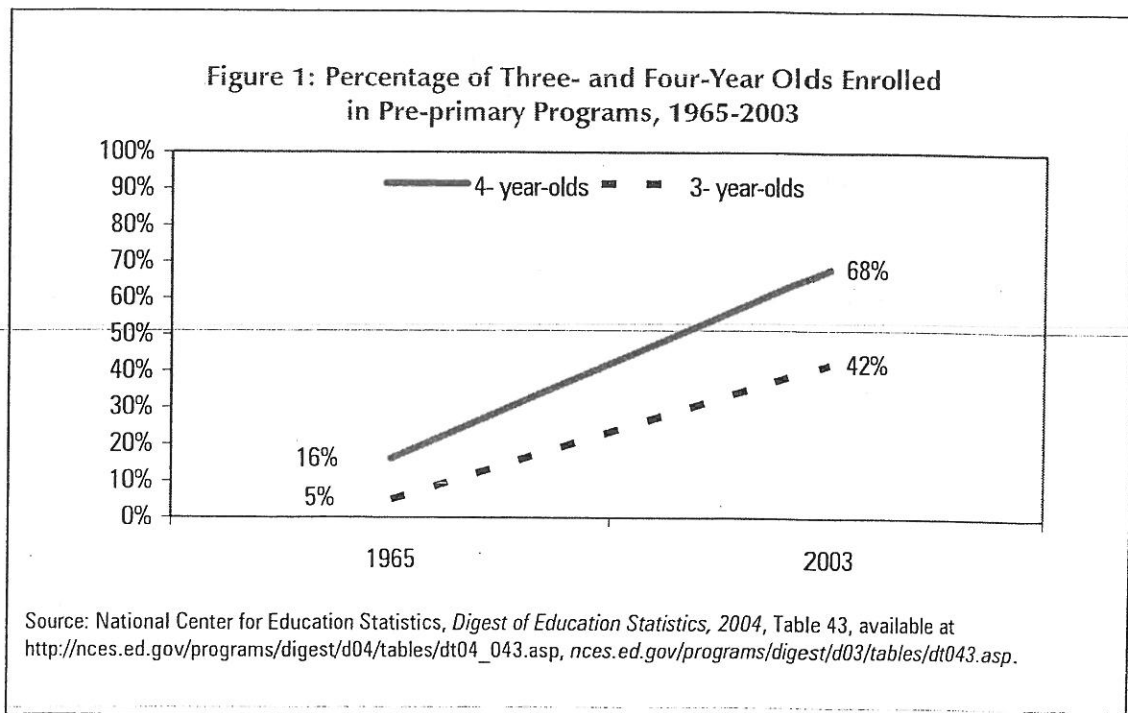
Importantly, the “little meaningful difference” observed at the end of the kindergarten year no longer exists by third grade. By the end of third grade, the researchers no longer detect a difference between students who attended part-day or full-day programs. They write, “This report did not detect any substantive differences in children’s third-grade achievement relative to the type of kindergarten program (full-day vs. half-day) they attended.”⁶¹ The finding holds across all subject matters tested. “Third-grade reading, mathematics, and science achievement did not differ substantively by children’s sex or kindergarten program type.”⁶²

The NCES reports document on a large scale the piecemeal findings on early education that have been trickling in for years: in the short term, more early education may confer more gains than lesser amounts of early education, but over time, those advantages are not sustained. Unless or until the elementary and secondary school system is improved, it is unlikely that preschool or kindergarten will lead to a measurable improvement in school achievement.

What Impact Do Preschool and Kindergarten Have on Student Achievement? A Historical Overview

The NCES findings are less surprising in historical context. From 1965 to the present day, the United States underwent a sea change in formal early education. Preschool, then uncommon, is now the mode.

As Figure 1 shows, only 5 percent of three-year-olds attended preschool in 1965—today, 42 percent attend. Sixteen percent of four-year-olds attended preschool in 1965—today, that figure is 68 percent. For five-year-olds, kindergarten has become almost universal.⁶³

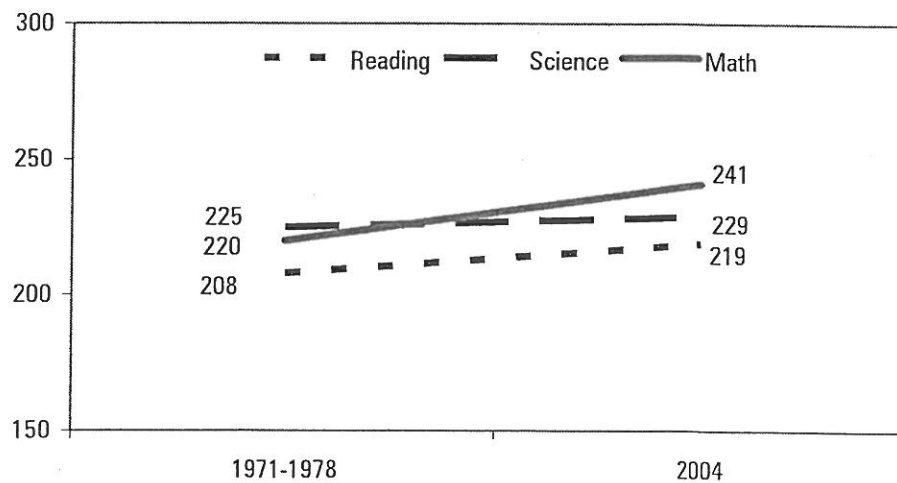


Despite the widespread use of formal early education programs, student achievement has shown little to no improvement. For instance, Figure 2 shows fourth-grade reading, science, and math scores on the National Assessment of Educational Progress (NAEP) have been little better than stagnant since 1971, 1977, and 1978, respectively.

As noted author and education researcher Andrew Coulson reports, “Student achievement has stagnated or fallen in most subjects since 1970... That is the verdict of the five most reliable sources of evidence: the National Assessment of Educational Progress (NAEP), the International Evaluation of Education Achievement (IEA), the Young Adult Literacy Survey (YALS), the National Adult Literacy Survey (NALS), and the International Adult Literacy Survey (IALS).”⁶⁴

Although the relationship between inputs and outcomes is more complicated than this linear analysis suggests, if the proponents’ arguments are correct, we should expect to see at least some relationship between the increased enrollment in early education programs and student achievement. This is particularly true when the states have, over the same period of time, more than tripled spending on education, increased teacher salaries, and reduced class sizes.⁶⁵

Figure 2: Fourth-Grade Reading, Science and Math Scores on the NAEP, 1971–2004



Source: 1971, 1977, and 1978 are the initial test years shown respectively in reading, science, and math. See U.S. Department of Education, National Center for Education Statistics, “Results Over Time: NAEP 1999 Long-Term Trend Summary Data Tables,” August 2000, available at nces.ed.gov/nationsreportcard/tables/Ltt1999/.

NAEP 2004 Long-term Trend Summary Data Tables http://nces.ed.gov/nationsreportcard/ltt/results2004/2004_sdts.asp

Certainly many factors contribute to student learning, but the lack of any apparent relationship between increased enrollment in early education programs and later student achievement suggests more formal early education is unlikely to improve student achievement.

Part 3

How Do U.S. Children Perform? An International Examination

Advocates often point to France's *écoles maternelles* as the ideal model for early childhood education. According to Sandra Feldman, president emeritus of the American Federation of Teachers, the United States "can't afford not to" adopt a pre-primary program sculpted after the coveted French system.⁶⁶ Nearly all three- and four-year-olds in France are enrolled in center-based institutions.⁶⁷

Does the European model produce superior results?

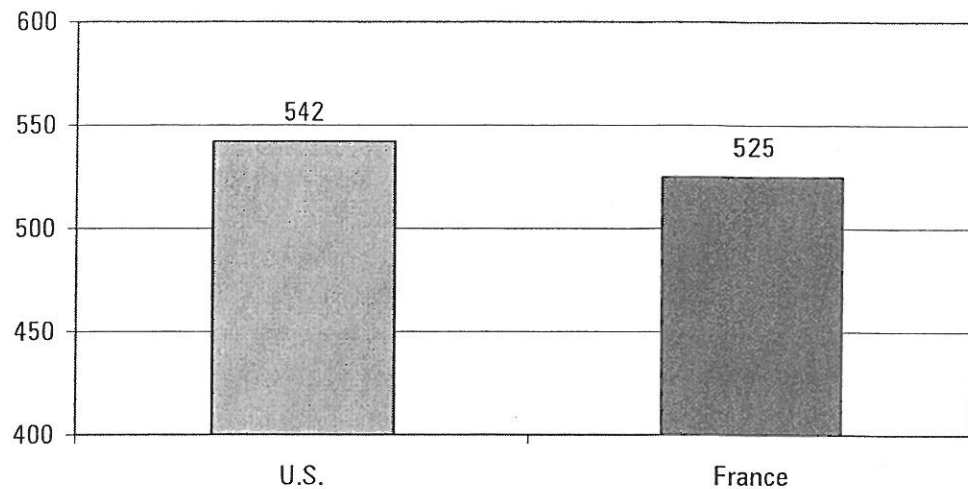
If early education programs were essential building blocks for later school success, we would expect European students to have a stronger showing than U.S. students on international tests, particularly in the early elementary years. However, test scores reveal that U.S. students routinely outperform their international counterparts in reading, math, and science in fourth grade—the earliest year for which comparative test scores are available.

Figure 3 shows that U.S. fourth graders demonstrate significantly better reading literacy skills than their French peers.⁶⁸

With a score of 542, U.S. fourth graders also perform significantly better than the international average of 500, and outperform their counterparts in 26 of the 35 countries participating in the literacy exam, including Germany and Italy, which have enrollment rates similar to France.⁶⁹

The top performance of U.S. readers was documented in an earlier version of the 2001 exam. On the 1991 version, U.S. fourth graders surpassed students in France, East Germany, West Germany, and Italy with significant margins.⁷⁰

Figure 3: U.S. Fourth-Grade Reading Literacy Scores Exceed French Scores, 2001



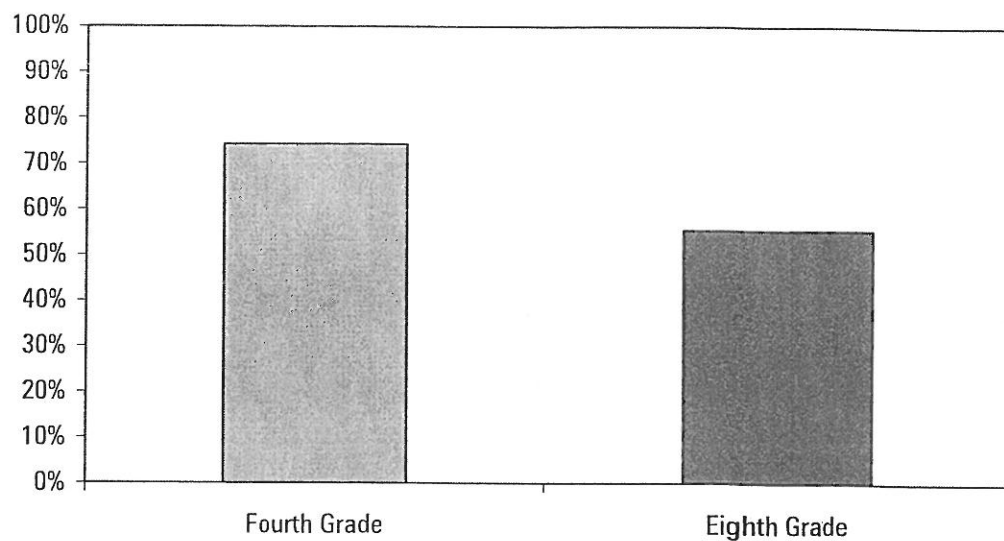
Source: U.S. Department of Education, National Center for Education Statistics, "International Comparisons in Fourth Grade Reading Literacy: Findings from the Progress in International Reading Literacy Study (PIRLS) of 2001," NCES 2003-073, April 2003, 5.

Test data from the Third International Mathematics and Science Study show U.S. fourth graders also have above-average math scores, and their science performance is third only to South Korea and Japan.⁷¹ U.S. fourth graders earned a score of 545 in mathematics, performing significantly better than the international average of 529, and surpassing their counterparts in 14 out of 26 participating countries.⁷² In science, U.S. fourth graders scored 565—far above the international average of 524.

While U.S. fourth graders are "A" students on the international curve, that advantage does not last. By eighth grade, U.S. student performance is slipping, and test performance is mediocre. As David Hoff reported for *Education Week*, "In 1995, the nation's fourth graders aced international mathematics and science tests. By the time they reached the 8th grade in 1999, though, they had become little better than C students on a global curve..."⁷³ A similar decline occurs in reading. Figure 4 shows U.S. fourth graders score higher than 70 percent of their international peers while U.S. eighth graders perform little better than the international average.

Student performance continues declining, and by twelfth grade U.S. seniors are "D" students on the international scale.⁷⁴ Out of 21 countries tested in math and science literacy, U.S. twelfth graders performed better than students in only three countries—Lithuania, Cyprus, and South Africa.⁷⁵ As the U.S. Department of Education describes it, "U.S. students performed relatively well at the fourth-grade level, about average at the eighth-grade level, and below average at the twelfth-grade level."⁷⁶ Figures 5 and 6 illustrate the decline.

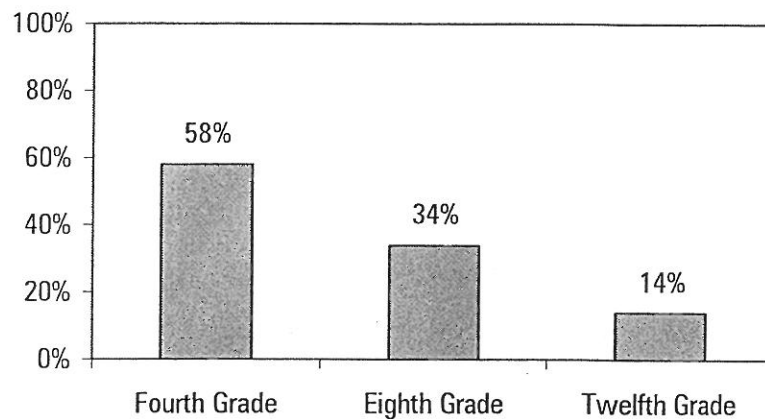
Figure 4: Decline in U.S. Reading Literacy Performance from Fourth to Eighth Grade



Source: Mullis *et al.*, "PIRLS 2001 International Report: IEA's Study of Reading Literacy Achievement in Primary Schools," Boston College, 2003, Chapter 1, available at timss.bc.edu/pirls2001/pdf/P1_IR_Ch01.pdf; and U.S. Department of Education, National Center for Education Statistics, "Outcomes of Learning: Results from the 2000 Program for International Student Assessment of 15-year-olds in Reading, Mathematics and Science Literacy," December 2001, Chapter 2, available at nces.ed.gov/pubs2002/2002115.pdf.

Figure 5 shows U.S. students score higher than 58 percent of their international peers in the fourth grade, but score higher than just 14 percent by twelfth grade. Figure 6 shows a similar decline in science performance with U.S. students surpassing 92 percent of their international peers in fourth grade, but performing better than only 29 percent by twelfth grade.

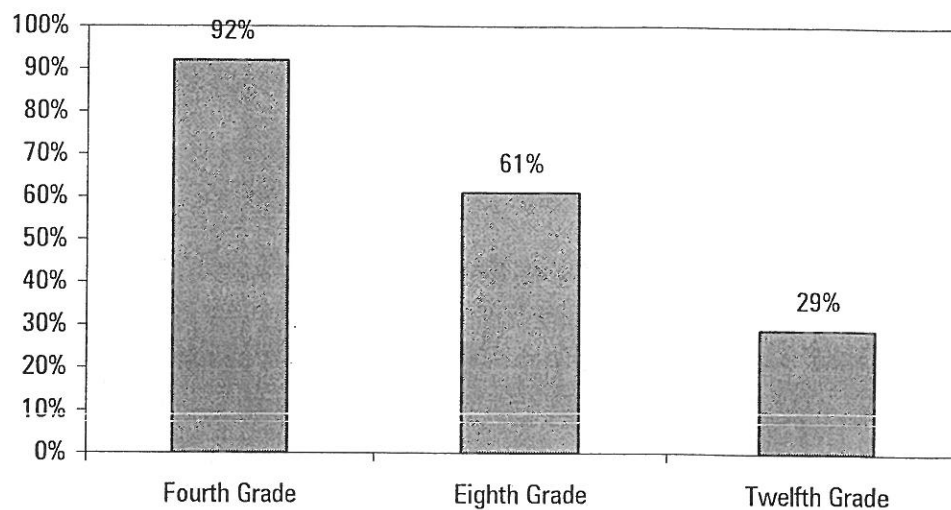
Figure 5: Decline in U.S. Math Performance by Grade Level



Sources: Fourth grade: "TIMSS highlights from the Primary Grades," Boston College, June 1997: 2, Table 2, based on 1994–1995 TIMMS data, available at isc.bc.edu/timss1995i/TIMSSPDF/P1HiLite.pdf. Eighth grade: "TIMSS Highlights from the Middle School Years," Boston College, November 1996: 2, Table 1, based on 1994–1995 TIMMS data, available at isc.bc.edu/timss1995i/HiLightB.html. Twelfth grade: "TIMSS Highlights from the Final School Years," Boston College, February 1998: 2, Table 2, based on 1995–1996 TIMMS, available at isc.bc.edu/timss1995i/TIMSSPDF/C_HiLite.pdf.

What test scores reveal, then, is that U.S. students are strong competitors in the early elementary years, excelling in reading and science and performing above average in math. Over time, U.S. student performance declines and international students take the lead. Whatever the cause of that decline, however, it appears to have little or nothing to do with a lack of preparation in the early years. To the degree that international test data are informative, America's decentralized and flexible early education system is outperforming the European model and excels in equipping students for superior achievement in the elementary years.

Figure 6: Decline in U.S. Science Performance by Grade Level



Sources: Fourth grade: "TIMSS highlights from the Primary Grades," Boston College, June 1997: 2, Table 2, based on 1994–1995 TIMSS data, available at isc.bc.edu/timss1995i/TIMSSPDF/P1HiLite.pdf. Eighth grade: "TIMSS Highlights from the Middle School Years," Boston College, November 1996: 2, Table 1, based on 1994–1995 TIMSS data, available at isc.bc.edu/timss1995i/HiLightB.html. Twelfth grade: "TIMSS Highlights from the Final School Years," Boston College, February 1998: 2, Table 2, based on 1995–1996 TIMSS, available at isc.bc.edu/timss1995i/TIMSSPDF/C_HiLite.pdf.

Part 4

Examining the Economic Case for Universal Preschool

A. Perry Preschool: Can \$1 Today Yield \$7 Tomorrow?

The Perry Preschool Project was a longitudinal experiment designed to study the effects of early intervention on disadvantaged children. It was the early intervention program most frequently cited in research reviews between 1983 and 1997, and is heavily cited in the literature and legislation in support of universal preschool.⁷⁷

Investigators at the High/Scope Educational Research Foundation in Ypsilante, Michigan conducted the experiment from 1962 to 1965. The investigators reported their most recent findings in “Lifetime Effects: The High/Scope Perry Preschool Study through Age 40.”⁷⁸ The project was an intervention program for three- and four-year-olds deemed at risk for “retarded intellectual functioning and eventual school failure.”⁷⁹ It involved either one or two years of half-day preschool for seven months each year and periodic home visits. One hundred twenty-three children participated, 58 children in the experimental group and 65 in the control group. All of the children were of low socioeconomic status and had IQs in the range of 70 to 85.⁸⁰ The study is frequently cited because it is the longest running study of any preschool intervention program.

Analyses show that students who participated in the preschool program fared better over the long term on a variety of educational and social measures than did children in the control group. Lawrence J. Schweinhart, now president of the High/Scope Foundation, wrote, “Program participation had positive effects on adult crime, earnings, wealth, welfare dependence, and commitment to marriage.”⁸¹ On the basis of those findings, Schweinhart concluded, “The program provided taxpayers a return on investment of \$7.16 on the dollar.”⁸² Advocates rely heavily on that figure to make their case that preschool is an investment that more than pays for itself in the long term.

The High/Scope researchers’ interpretation of the long-term findings is that the preschool program prepared children for kindergarten, which resulted in a more positive reaction by kindergarten teachers that, in turn, caused the children to have a stronger commitment to school. That is sometimes called the snowball hypothesis. Three researchers from Yale University explain,

The snowball hypothesis presumes that children who attend quality intervention programs are better prepared socially and academically when they begin school. This enables them to interact positively with their teachers, who in turn relate positively to them, and this tone of adult-child relationships continues in progressive years of school.⁸³

Others posit that the home visitation component was largely responsible for the results. They hypothesize that people became more effective parents as a result of their involvement in the program. Experiences such as building relationships with teachers may help parents establish a more supportive home environment and effective “home-school linkages.”⁸⁴ At any rate, there is no consensus on which components of the program were responsible for the children’s gains. The critical question remains: how could a one- or two-year half-day preschool program produce such outstanding results?

The High/Scope researchers have been subject to heavy criticism for using nonstandard significance levels. If standard significance levels are used, many of the most “significant” differences between the experimental and control groups disappear.⁸⁵ Psychology professor Charles Locurto of the College of the Holy Cross in Massachusetts has argued that the Perry results are less remarkable when all findings—not just those that favor Perry—are considered. Locurto writes,

We might marry the large number of nonsignificant and unfavorable findings into a different picture of the Perry Project’s outcomes. We might argue that preschool training resulted in no differences in school motivation or school potential at the time of school entry, no lasting changes in IQ or achievement test performance.... There were no differences in their average grades as compared to former control-group children, in their personal satisfaction with their school performance or in their self-esteem. Their parents were no more likely to talk with teachers about school work or to attend school activities and functions than control-group parents. Preschool children were more likely to have been placed in remedial education. By age 19, they were unemployed at a rate equal to that of their control-group counterparts.⁸⁶

More importantly, questions have been raised concerning the Perry sample and methodology. According to Head Start co-founder and Sterling Professor Emeritus of Psychology at Yale University, Ed Zigler,

[The Perry sample] was not only nonrepresentative of children in general; there is some doubt that it was representative of even the bulk of economically disadvantaged children... The Perry Project poses a number of methodological difficulties.... Children had to have a parent at home during the day, resulting in a significant difference between control and intervention groups on the variable of maternal employment... [and] assignment to experimental and control groups was not wholly random.⁸⁷

Even if one believes the Perry findings are valid for disadvantaged children, they form a slippery basis for universal preschool, and caution is in order. First, in more than 40 years, no other program or study has produced results as dramatic as those found for Perry.⁸⁸ That suggests that there may have been unique conditions at the Perry Preschool that simply cannot be duplicated. As

a general principle, science requires an experiment to be replicable before it is considered valid. Certainly caution is in order when it comes to applying findings to millions of children.

Second, benefits were obtained only for severely disadvantaged children at risk of “retarded intellectual functioning.” It is simply inappropriate to generalize the effects of Perry to mainstream children. This is particularly important given the research that shows some early education programs do not always benefit—and may even be harmful to—mainstream children.

Third, Perry children may have outperformed children in the control group, but they still fared poorly compared with mainstream children. For example, nearly one-third of children participating in the intensive program dropped out of high school; nearly one-third of the children were arrested; and three of five participating children received welfare assistance as adults.⁸⁹ That has led many researchers to be more level-headed about the likely effects of early intervention: “Policymakers should not assume that the widespread enrollment of low-income children and families in early childhood programs will enable children living in poverty to perform later in school and life at the levels reached by more advantaged [mainstream] children.”⁹⁰

Finally, Perry differed significantly from regular preschool programs or what we could expect to see in most universal preschool proposals. The fact that no other preschool program has ever produced results akin to Perry may be testament to that.

B. RAND and The Chicago Child-Parent Centers

Much of the momentum for universal preschool in California and the nation comes from a RAND Corporation study claiming that making universal preschool available in California would yield \$2.62 in benefits for every \$1 spent.⁹¹ RAND bases these positive economic predictions for California children on extrapolations from a study of a preschool intervention known as the Chicago Child-Parent Center program. The RAND cost-benefit analyses suffer from many of the same limitations as the Perry preschool study. The Chicago preschool program served the most disadvantaged children in Chicago. These children were the subject of a longitudinal study of more than 1500 disadvantaged children, about 1000 of whom went through the preschool program and 550 who did not. The study found children going through the program had less grade repetition, less need for special education, higher graduation rates, less child abuse cases, and lower crime incidents.⁹²

However, comparing the Chicago program with the treatment that most universal preschool programs offer is like comparing apples and oranges. The Chicago children had positive economic outcomes because of intensive family and school interventions. For instance, the Chicago program includes a parent program that includes a parent resource room with educational workshops, reading groups and craft projects. Parents also volunteer in the classroom, attend school events and field trips, and are assisted in completing high school.

The Chicago program also featured outreach activities including home visitations by staff. Also health screening, speech therapy, and nursing and meal services were provided. In addition, many of the children in the study received tutoring in reading and math until the third grade. As Arthur J. Reynolds, the lead researcher in the Chicago study, stated in support of his findings, “We are confident that participation in the Child-Parent Center (CPC) Program from ages 3 to 9 years was the source of the group differences at age 20 years.”⁹³ In contrast, most universal preschool plans, including California’s “Preschool for All” initiative are small-scale interventions that would involve children for one school year rather than six years.

The bottom line for the Chicago study is that it is difficult to say with certainty whether the positive economic outcomes for the disadvantaged children were brought about by the preschool intervention or the extra tutoring or the parental involvement. The RAND researchers were willing to assign similar economic benefits for California children, even though the preschool treatment would be entirely different than the treatment in the Chicago study.

Psychologist Dr. Matthew Thompson of Children’s Hospital in New Orleans, writing in the *American Medical Association Journal*, critiqued the Chicago program, saying: “It is possible that parental involvement explains more of the variance in outcome among inner-city children than do structured programs. . . . If policy makers mistakenly accept the conclusion that preschool intervention results in less criminal activity later, they may mistakenly invest in these programs when the money might be better invested in parenting skill programs and other interventions to increase parental involvement.”⁹⁴

While the Chicago study offers at least some justification for assigning economic benefits to the most disadvantaged children, RAND offers no justification for assigning economic benefits to more-advantaged children that make up the majority of the children that would receive universal preschool services in California and other states. According to former Legislative Analyst Bill Hamm only 8 percent of funding from the proposed California program would go to enroll “high-risk” kids in preschool, who otherwise would not attend preschool.⁹⁵

RAND’s study states that “there is little in the way of quantitative evidence to suggest how much benefits would be attenuated [i.e., lessened] for more-advantaged children.” Yet, despite the lack of this evidence, RAND arbitrarily makes the assumption that middle-income children would receive 50 percent of the benefits of the Chicago program, while upper-income children would receive 25 percent of the benefits. Yet there is no empirical justification to assign *any* economic value to the benefits of universal preschool for more-advantaged children.

C. The Carolina Abecedarian Project

Although it is neither a preschool nor a kindergarten program, advocates often mention the Abecedarian project because of its unique long-term findings. The Abecedarian Project was launched in 1972 by researchers at the Frank Porter Graham Child Development Center in Chapel

Hill, North Carolina, and involved 111 children deemed at-risk on the basis of their parents' income, education, and other factors. The mean age at entry into the program was 4.4 *months*. The infants were placed in an eight-hour-a-day, five-day-per-week, year-round educational day care center. They received free medical care, dietary supplements, and social service support for their families. From ages five through eight, half of the children from both the experimental and the control groups were given extra help in school and at home by specially trained teachers.⁹⁶

At every age from one-and-a-half to four-and-a-half years, children treated in preschool significantly outscored the control group on measures of intellectual development. At age eight, test data showed significant positive effects of preschool treatment on intellectual test scores. A follow-up test at age 12 showed that the effects of preschool treatment on children's performance on intellectual tests and on reading and mathematics tests had been maintained into early adolescence. As the Abecedarian Project researchers note, "This represented a longer maintenance of preschool intervention gains than has typically been reported from previous projects concerned with similar children and families."⁹⁷ Most recently, researchers examined the children's intellectual and academic performance at age 21 and found that students who had received the treatment "attained higher scores on both cognitive and academic tests, with moderate to large treatment effect sizes."⁹⁸

As with the Perry project, there is no consensus on which components of the program were responsible for the children's gains, although it has been suggested that the early cognitive gains were associated with greater mastery of academics, which led, in turn, to better performance thereafter.⁹⁹ The findings also provide support for the intensity or duration hypothesis, which predicts that longer, more intense programs result in the most advantages for children.¹⁰⁰

The Abecedarian Project has received some criticism, most notably from Herman H. Spitz, former director of the Research Department at the E. R. Johnstone Training and Research Center in Bordentown, New Jersey.¹⁰¹ Spitz expressed concern that the project personnel presented certain results in ways that bias the findings in favor of Abecedarian. For example, by combining the IQ findings of the four cohorts studied, the researchers concluded that

the intervention raised IQ. However, they neglected to report that scores improved only for two of the four groups. In fact, for the third and fourth cohorts, the experimental group actually lost 3.68 IQ points more than did the control group, providing no support for the efficacy of the intervention on this measure.¹⁰²

Spitz also points out that differences favoring the intervention group first emerged at six months of age, when those children's advantage was six points. He writes, "This is a rather surprising finding when one considers that the mean age of entry into the daycare center was 4.4 months."¹⁰³ The intervention groups' IQ advantage at five years of age was essentially the same as it had been at six

months of age. Spitz asks, “What happened during the initial 1.6 months to produce essentially the same advantage for the intervention group that later was found at 5 and 12 years of age?”¹⁰⁴ He continues, “We need to understand why an additional 4.5 years of intensive intervention had so little effect that, at six years of age (and older), the difference between the intervention and control groups was not appreciably different than it had been at six months of age.”¹⁰⁵ Spitz also argues that because of the ways the tests were conducted, some of the reported test results may be biased in favor of the Abecedarian Project.¹⁰⁶

Whether or not one takes the Abecedarian findings as wholly valid, there are several facts that should prevent legislators from basing policy recommendations for universal early education on the study. First, the Abecedarian project did not include mainstream students, and benefits were obtained only for a small group of “economically disadvantaged African-American children.” The findings do not inform questions regarding mainstream children.

Second, Abecedarian was not a one-, two- or even three-year preschool or kindergarten intervention. It was an intensive intervention that created a home-away-from-home for infants and continued at an intensive level for more than five years. It was not akin to preschool or kindergarten programs. It was a full-time intervention from birth through age five that few parents would find comfortable.

Finally, the Abecedarian Project was the first of its kind and has not been repeated. As the authors report, “The persistence into adulthood of the Abecedarian treatment effects on cognitive development is in contrast to the erosion of treatment/control test score differences in the Early Training Project and the High/Scope Perry Preschool Project, the only other randomized trials of early childhood intervention to have reported post-high school findings.”¹⁰⁷ Because the Abecedarian Project was the first of its kind to demonstrate sustained results, it is important that it be replicated—and the factors leading to such anomalous findings are understood—before drawing further conclusions.

Whatever their merits, neither Perry Preschool, the Chicago Child Parent Centers, nor Abecedarian speaks to mainstream children nor to the type of preschool or kindergarten programs proposed by today’s policymakers. Additionally, all were model projects that treated a small group of children in specific conditions. Could those effects be expected of widespread public programs? On this point, information on Head Start is informative. Head Start is the government’s longest running preschool program for disadvantaged children and it has failed to produce long-term academic advantages for participants.

D. Head Start

Research on Head Start is valuable because it is a large program operating under real-world conditions and constraints, and research has been conducted over a 40-year period. Head Start has more than 1,300 preschool projects serving about 457,000 disadvantaged children. The information

about the effects of Head Start can serve as a close approximation of what one might expect from a universal preschool education for disadvantaged children.

Like many of today's early education advocates, former president Lyndon B. Johnson sold his program to the public by promising that early intervention could prevent delinquency, poverty, and welfare use.¹⁰⁸ The reality of Head Start has been much different. Head Start programs have had mixed short-term results. Consistent with broad findings on early education, however, Head Start students have not demonstrated lasting achievement gains.

In 1997, the General Accounting Office (GAO) conducted a thorough analysis of Head Start's impact.¹⁰⁹ After speaking with early childhood researchers and practitioners and searching through electronic databases to locate published and unpublished manuscripts, the GAO found nearly 600 citations and documents. Of those, only 22 studies fit their criteria for review, and even those "had some methodological problems."¹¹⁰ No study used a nationally representative sample so that findings could be generalized to the national program. The GAO concluded, "The body of research on current Head Start is insufficient to draw conclusions about the impact of the national program."¹¹¹

Head Start students have not demonstrated lasting achievement gains.

The Department of Health and Human Services (HHS) has maintained that research proves Head Start's effectiveness. In a letter to the GAO, June Gibbs Brown, then inspector general of HHS, wrote, "There is clear evidence of the positive impacts of Head Start services."¹¹² For supporting evidence, HHS cited findings from a comprehensive synthesis of Head Start impact studies conducted under HHS auspices in 1985.¹¹³ The study showed that Head Start could have an immediate positive impact on cognitive measures, social behavior, and child health. HHS neglected to mention the rest of the findings—namely that the short-term impact of Head Start diminished once the children entered school. The synthesis concludes, "In the long run, cognitive and socioemotional test scores of former Head Start students do not remain superior to those of disadvantaged children who did not attend Head Start."¹¹⁴

On the three cognitive measures tested (IQ scores, school readiness, and achievement test scores), the report found, "Once the children enter school there is little difference between the scores of Head Start and control children ... Findings for the individual cognitive measures—intelligence, readiness and achievement—reflect the same trends as the global measure... By the end of the second year there are no educationally meaningful differences on any of the measures."¹¹⁵

Findings on children's social behavior, achievement motivation, and self-esteem were similar: "On social behavior, former Head Start enrollees... drop to the level of comparison children by the end of the third year. On achievement motivation and self-esteem, Head Start children drop below non-Head Starters a year after Head Start, then score about the same as comparison children for the next two years."¹¹⁶

In 2003, researchers released a new study on Head Start with a nationally representative sample of 2,800 children in 43 different Head Start programs called "Head Start FACES 2000." The report seems to confirm earlier findings. The researchers report, "Despite the gains they make, Head Start children enter Kindergarten still substantially below national averages on such assessments."¹¹⁷ Longer-term assessments have not yet been conducted, but are currently underway by Westat.

Part 5

Evaluating Universal Preschool in Georgia and Oklahoma

A. Experience in Georgia: \$1.5 billion on Universal Preschool Bears No Fruit

In 1993, the Georgia state legislature established a no-fee pre-kindergarten program now serving an estimated 63,000 four-year-old preschoolers. Using the Georgia Kindergarten Assessment Program (GKAP), in 1999 researchers at Georgia State University tested children who had participated in the preschool program and compared their scores to all students in the state during the kindergarten year. Both groups scored well, but their scores were indistinguishable.

The researchers concluded, “Eighty-eight percent of the study sample scored a five on the capability item, compared to 85 percent of all students across the state scoring similarly. Statistical tests indicate that overall these differences are not significant. In other words, the study sample does not differ from the entire kindergarten population in GKAP capability scores.”¹¹⁸

Reports also show that GKAP scores are essentially the same as they were before Georgia adopted the universal preschool program. Linda Schrenko, then Georgia State School Superintendent, expressed the state’s disappointment, saying, “The only message you can get from it is that our kindergarten non-ready rate [7 percent of students] is the same, regardless of what we do.”¹¹⁹

In 2003, Georgia State University researchers released the latest findings from the fifth and final year of the longitudinal study of the pre-kindergarten program. In the final report, they write, “Previous research has shown that cognitive gains as measured by standardized test scores are associated with preschool experiences but are not sustained in later years... It should not be surprising to find that the test scores of children, all of whom participated in a pre-k program four years before are not systematically different.”¹²⁰ The researchers show the test scores of children who remained on grade level and who were not exempted from state testing by virtue of their individualized education plan and report their average percentile test scores in math, language arts, science and social studies: all fall below the national average and are not systematically different from Georgia’s average student performance.¹²¹

Other findings on grade retention and curriculum are also informative. The researchers report, “About 15 percent of the children were retained at least once by their fourth year of primary school.”¹²² Within the preschool control group, researchers were also able to assess the impact of varying types of preschool curriculum and found, “Students’ economic backgrounds have more influence on their educational success after pre-k than curriculum choice and teacher credentials.”¹²³ Lead researcher Gary Henry writes, “Program characteristics made only small differences in retention and test scores. These differences are much less dramatic than some of the differences based on parental education or socio-economic status... There is no magic bullet here. No one thing is waiting in the wings to increase scores for all students...”¹²⁴

After ten years, the Georgia preschool program has served over 300,000 children at a cost of \$1.15 billion and children’s test scores are unchanged.¹²⁵ Because programs like these, once in place and supported by special interests, are virtually never removed, Georgia’s taxpayers are still paying the bill and probably will continue to do so.

B. The NAEP and Universal Preschool

Evidence from performance on the National Assessment of Education Progress (NAEP), which is considered the nation’s report card, also calls into question the value of investing in universal preschool. Georgia has had universal preschool open to all children since 1995 and Oklahoma has had a universal program in place since 1998. Yet, the overall performance of these states on the NAEP in terms of reading achievement calls into question the lasting value of universal preschool on academic outcomes. In a recent analysis of the top 10 best and worst state performers, based on

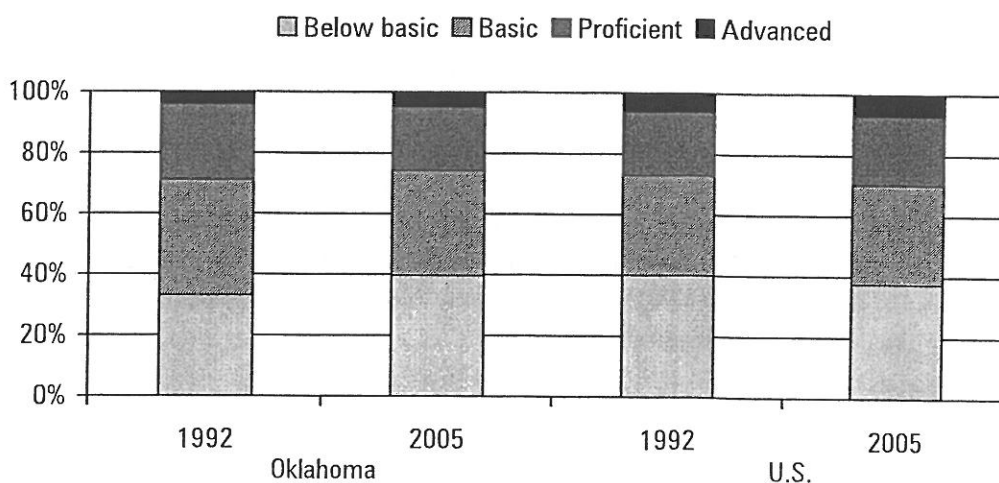
the percentage point change in fourth-grade reading tests between 1992 and 2005 on the NAEP, both Georgia and Oklahoma were in the bottom 10 performers.¹²⁶ In fact, Oklahoma was the worst performer of all states in terms of gains in fourth-grade reading between 1992 and 2005, actually losing 4 percentage points.

More specifically, in Oklahoma 33 percent of fourth graders were below basic in reading in 1992. By 2005 40 percent of Oklahoma fourth graders were scoring below basic. In 1992, 38 percent of Oklahoma fourth graders scored basic in reading. Again by 2005 only 35 percent of fourth graders could read at a basic level. Finally, in 1992, 25 percent of Oklahoma fourth graders were proficient in reading, and by 2005 only 21 percent of Oklahoma fourth graders were proficient in reading. (see figure 7)

One would expect that a large statewide investment in universal preschool, including highly paid, credentialed teachers and a high-quality curriculum would have a positive effect on fourth-grade reading scores. These scores declined, despite the fact that all of the children that took the 2005 NAEP reading test in Georgia and Oklahoma were eligible for universal preschool.

On the other hand, none of the states in the top 10 best performers in terms of gains in fourth-grade reading on the NAEP between 1992 and 2005 had implemented universal preschool.

Figure 7: Title: Oklahoma Reading Achievement on NAEP, 1992-2005



Source: Quality Counts at 10: A Decade of Standards-Based Reform, *Education Week*, 2006.
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Part 6

Recommendations

A. Increase Transparency

We recommend that state and federal policymakers bring transparency to current early education spending by identifying, documenting, and tracking the amount of federal and state spending on child care, preschool, and kindergarten programs in their jurisdictions before expanding government subsidies for early childhood education.

Many state and federal early care programs have a poor track record of financial accountability. The quality of financial data about early childhood education programs is often poor and difficult to evaluate. Arizona is a case in point. Arizona State University (ASU) researchers compiled “The Condition of Early Childhood Education and Care in Arizona: 2004.” They concluded, “The data on early childhood education and care (ECEC) in Arizona are poor,” and recommended that the School Readiness Board be given “the authority and funding to identify and track annually the amount of federal and state dollars invested in ECEC.”¹²⁷

In addition to poor quality data, fraud and mismanagement have plagued many large-scale government-funded child-care programs. In its 40-year history, Head Start has proven to be rife with financial abuse, mismanagement, and outright theft. A 2005 investigation by the House Committee on Education found that because of fraud and poor management, a significant share of the nearly \$7 billion being invested annually by American taxpayers in Head Start never reaches or benefits disadvantaged children.¹²⁸

In New Jersey, where universal preschool has been implemented by court decree in 30 low-income Abbott districts, about a dozen state-contracted child-care centers—nearly a third of the number audited by the state—have been referred to the state attorney general’s office for possible *prosecution*.¹²⁹ Instead of educating children, administrators bought cars and jewelry, paid themselves six-figure salaries, and even went gambling in Atlantic City. Researchers also found a wide gap in quality among preschool classrooms as they sat in on hundreds of classes across the state to evaluate New Jersey’s \$400-million-a-year effort to help needy children catch up to their wealthier suburban peers.¹³⁰ They found significant problems in many of New Jersey’s state-

funded classrooms for poor preschoolers, including harsh discipline, a dearth of books, and weaknesses in science and math.

Similarly, California currently spends more than \$3 billion a year on subsidized preschool for low-income children. A recent report by the District Attorney in charge of welfare fraud in California reports that rampant fraud is costing California taxpayers as much as \$1.5 billion a year—half of the welfare money it pays to needy families for child care.¹³¹ In Los Angeles, for example, officials estimate Los Angeles County loses 40 to 50 percent of its \$600 million-a-year child-care allocation to fraud.¹³²

We recommend that an independent body, such as Arizona’s auditor general or California’s state auditor, carefully evaluate current spending on early education and that any early childhood program maintain more transparency to continue receiving public dollars.

B. Streamline Existing Duplicative Early Childhood Programs

Most states have several administrative agencies responsible for early childhood education funding and program administration. For example, California currently spends more than \$3 billion a year on subsidized preschool for low-income children through 20 different funding streams. Rather than creating yet another preschool bureaucracy and tax-funded revenue stream, California can create a single, integrated, seamless administrative system that will serve low-income families. The different funding streams that support low-income families have multiple administrative bureaucracies, paperwork requirements, and eligibility requirements. Millions of dollars that could go directly to families to pay for more low-income preschool slots are wasted maintaining duplicative preschool programs. States need to streamline existing early childhood programs and work toward one-stop provision with a centralized eligibility list for disadvantaged preschoolers.

C. Assess Impact

As a matter of good public policy, we recommend that state legislatures require an impact assessment of early education expenditures. This is particularly important in light of empirical evidence demonstrating the inability of early education programs to improve academic performance. We concur with Arizona State University findings that, “The variety of agencies and groups involved and the lack of a systematic and coordinated statewide data plan make it difficult to evaluate the validity, integrity, and consistency of the ECEC available data... Pre-school and kindergarten enrollment data are not systematically collected or organized...”¹³³ There is almost no information available on the impact of the more than \$410 million spent annually on these programs on student learning.¹³⁴ This assessment applies to most early education programs and evaluation of full-day kindergarten and universal preschool programs are a crucial component to any large-scale early childhood funding expansion.

D. Transform Current Spending into Grants

To the degree that the states continue to be involved in early education, we recommend funding be modified into direct education grants to families. The arguments for a flexible funding system of per-child grants have been made extensively elsewhere.¹³⁵

For example, imagine if Arizona's early childcare system were redesigned so that funding followed the child through direct grants. The best available estimates show that Arizona currently spends more than \$410 million annually on early education programs.¹³⁶ Of that, an estimated \$134 million is spent on kindergarten, a conservative figure that does not include the multiple funding streams being utilized by school districts to provide kindergarten or parent fees.¹³⁷ Nonetheless, the amount is sufficient to give a kindergarten grant worth \$1,950 to every kindergartner in Arizona.¹³⁸ If grants were targeted to kindergartners whose family incomes were equal to or less than 185 percent of the federal poverty line (an estimated 42 percent of kindergartners), grants could be an estimated \$4,650 per child.¹³⁹

The best estimates also show Arizona spends \$265 million annually on non-kindergarten early education programs, an amount sufficient to give every four-year-old in Arizona a grant of \$3,460.¹⁴⁰ If grants were restricted to children whose family incomes were equal to or less than 185 percent of the federal poverty level, current spending could transform into grants in the estimated amount of \$8,240 per child.¹⁴¹

These figures are not intended to be prescriptive or definitive, but rather to illustrate the amount of money currently spent on these early education programs and the possibility of using those funds more efficiently through per-child grants.

At current spending levels, the grant amounts could be sufficient to assist parents' choice among a range of private providers. A recent Goldwater Institute survey of Arizona's private schools finds the average tuition for private elementary schools is an estimated \$3,700.¹⁴² This figure is aligned with national figures from the U.S. Department of Education that report the average private elementary school tuition is \$3,267.¹⁴³

Absent a grant program that uses the private sector, the further provision of state-run early education is likely to inflate costs. The California Preschool for All initiative estimates the cost of a three-hour, 180-day program to be \$8,000 per child. The Arizona School Readiness Task Force says quality preschool costs at least \$7,000 to \$10,000 per child.¹⁴⁴ Similarly, the National Institute for Early Education Research estimates the per-child cost at \$8,700.¹⁴⁵ As with the provision of K–12 education, publicly run preschool and kindergarten will likely cost significantly more than privately provided options.

Quebec's experience with seven years of universal preschool provides a cautionary tale for the high costs of state-run preschool. The program that was supposed to cost \$235 million over five years now gobbles \$1.7 billion every year.¹⁴⁶ Yet there are not enough day cares to go around,

forcing Quebec parents to put kids that have not even been conceived on a waiting list. (A Canadian likened getting a space in a day care to winning a lottery.) Half of the day care spaces are taken by the top 30 percent income bracket. Currently there are still about 35,000 names waiting to take advantage of the unbeatable daily deal.

In fact, Canada appears to be moving away from state-regulated early care toward a system of grants to families. The new minority Conservative government plans to cancel funding of state-regulated early childhood education programs worth \$3.7 billion. The money was promised to the provinces and territories by the former Liberal government to help finance regulated, affordable child-care spaces with an educational component.

The government is scrapping the Liberal program in favor of a taxable allowance of \$1,200 a year for each child under age six. Human Resources Minister Diane Finley says the provision will be contained in the first Conservative budget, expected in late April or early May, and the first monthly checks of \$100 per child could go out in July 2006.¹⁴⁷

Making use of private providers will also help reduce construction costs, which are projected at \$100 million for Governor Napolitano's kindergarten plan.¹⁴⁸ Similarly, in California the universal preschool initiative includes more than \$2 billion for new public preschool facilities. The practical approach of making use of the private sector was a key factor in Florida's recent decision to implement preschool through a grant system.¹⁴⁹ On January 2, 2005, Florida Gov. Jeb Bush signed a bill allowing Florida's four-year-olds to attend a preschool program of their parents' choice—including private centers. The per-child cost is expected to be between \$2,000 and \$3,000.¹⁵⁰

Alex Penelas, the democratic mayor of Miami-Dade County who championed the initiative, said he was working all the time under the assumption that parents would be able to choose either a public or private school for their children, saying, "That's more a practicality of having 90,000 children arrive on the doorstep."¹⁵¹ Author of the Florida Senate bill creating the program, Senator Lisa Carlton (R-Sarasota), concurred, saying, "Because we don't have enough spaces in the public schools, it's necessary for Florida to partner with the private sector."¹⁵²

According to the first program evaluation of Florida's universal preschool program, 92 percent of parents surveyed reported that they were satisfied with the program and 88 percent reported that their child was learning reading and math.¹⁵³ The competition between preschools to attract new state-funded preschoolers has also led to improvements in school quality. The number of Florida early childhood programs accredited by the National Association for the Education of Young Children increased from 781 to 879 in the past year.¹⁵⁴

We recommend a flexible system akin to Florida's, allowing parents to spend their grants in any public or private preschool or kindergarten program of their choice. Policymakers should ensure the continued independence of private providers. This will allow families to choose from a diversity of curricula, hours, and standards that suit individual student learning needs.

A tax-credit approach could also help policymakers achieve the policy goal of more quality preschool for children with more efficiency for taxpayers and greater satisfaction for parents.¹⁵⁵ By supporting new preschool slots for low-income and middle-class children, all taxpayers would be able to keep more of their own income to pay for their own preschool choices. A \$1,000 tax-credit to middle-income families would help them to choose from a wider preschool market, and a corporate tax-credit scholarship program could be created to give scholarships that would enable low-income children to attend existing preschools. Pennsylvania's example of the corporate program shows that companies have been responsive to tax incentives. The state expanded the existing K-12 corporate tax-credit program in 2003, giving corporations a 100 percent credit for the first \$10,000 and up to a 90 percent credit for remaining contributions up to \$100,000. To date, \$5 million a year is used to target Pennsylvania's low-income children with preschool scholarships. Families of children receiving the scholarships must earn less than \$50,000 plus a \$10,000 allowance for each dependent. In the first year of the program, 39 preschool scholarship organizations were created.¹⁵⁶

New state-run programs may also threaten the private and parochial provision of services, and with them, the diversity that is critical to meeting student needs. California's Preschool for All Act explicitly requires non-religious preschool provision. England's experience is instructive in this regard. The Department for Education and Employment worked vigorously to provide free preschool places for all four-year-olds and most three-year-olds by 2002. The BBC news reported, "The developments have proved disastrous for the private and voluntary sector."¹⁵⁷ More than 2,000 groups have closed since 1997, and 1,500 avoided closure only because of emergency funding from the government.¹⁵⁸

A new analysis on preschool competition between the private and public sector in Georgia demonstrates the value of competition between the public and private preschool sector. The study, *Competition in the Sandbox*, found that children who attended community-based preschools displayed stronger language development and lower rates of grade retention compared to children who attended preschools in the public schools.¹⁵⁹ In addition, the study found that greater competition improved educational outcomes for children in both public and private preschools.

Policymakers have the opportunity to transform current expenditures into a flexible system that can provide for a more cost-effective use of funds, greater choice for parents, and a wider range of opportunity for students.

Part 7

Conclusion

Gov. Janet Napolitano has argued that “Today in America, we are trying to prepare students for a high-tech world of constant change, but we are doing so by putting them through a school system designed in the early 20th century that has not seen substantial change in 30 years.”¹⁶⁰ We agree, and elsewhere have argued for fundamentally changing the school system through the powerful mechanism of school choice.¹⁶¹ Yet, Arizona’s governor has proposed an expansion of the status quo. And several states including California and Illinois are moving to expand state-run preschool.

To the degree that the state remains involved in early education, we recommend adopting a flexible system of per-child grants. For example, current state spending on kindergarten is sufficient to give a kindergarten grant worth \$1,950 to every kindergartner in Arizona. We note this is a conservative estimate that does not include the multiple sources of revenue currently generated by school districts or parent fees, which could also be used to augment the amount. If grants were targeted to children in families of modest means, kindergarten grants could be an estimated \$4,650 per student.

Empirical evidence suggests more early education will do little to improve children’s long-term education outcomes. We summarize some key findings here:

- The National Center for Education Statistics’ longitudinal study of 22,000 children finds no lasting reading, math, or science achievement differences between children who attend half-day and full-day kindergarten. “This report did not detect any substantive differences in children’s third-grade achievement relative to the type of kindergarten program (full-day vs. half-day) they attended.”¹⁶²
- Georgia’s universal preschool program has not improved children’s academic performance. “The study sample does not differ from the entire kindergarten population in GKAP capability scores.”¹⁶³
- Georgia and Oklahoma are in the bottom 10 worst performers for reading achievement on the NAEP fourth-grade reading assessment in 2005, despite years of investment in universal preschool.
- Head Start, the nation’s largest preschool program for disadvantaged children, has not measurably improved educational outcomes. “Once the children enter school there is little

difference between the scores of Head Start and control children... Findings for the individual cognitive measures—intelligence, readiness and achievement—reflect the same trends as the global measure... By the end of the second year there are no educationally meaningful differences on any of the measures.”¹⁶⁴

- Historic trends are not encouraging. The preschool enrollment rate of four-year-olds has climbed from 16 percent to 66 percent since 1965. Despite the sea change from home education to formal early education, we find student achievement has stagnated in most subjects since 1970.
- The French model of early education is not encouraging. French students have significantly lower literacy rates than U.S. students as measured in fourth grade, the earliest year for which comparative data are available.
- America’s flexible approach to early education gives children a strong foundation, according to widely used proxy measures of preparedness, concrete skills assessments, and reports by kindergarten teachers. We find further evidence of the strength of our early education system in international comparisons, which show U.S. fourth graders are “A” students on the international curve, excelling in reading and science and performing above average in math.
- By twelfth grade, U.S. students are “D” students on the international scale, a decline occurring after fourth grade that implicitly must be addressed through reform of the current system.

For these reasons, among others, we strongly recommend against “ensconcing early care and education as a lockstep component of public schooling,” and recommend alternative measures for improving early childhood education and ultimately K-12 schooling—including transparency, impact assessment, and individual student funding.

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