



# Do *small* Kids Need **BIG** Government?

A Look at the Research Behind Government Preschool

**FEBRUARY 2008**

Texas Public Policy Foundation

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Center for Education Policy

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## Executive Summary



In recent years, lawmakers have pursued an increased government role in providing early childhood education to Texas children. In 2006, the Texas Legislature expanded state pre-kindergarten (pre-k) eligibility—previously reserved for low-income families, non-English speakers, current foster children, and students requiring special education—to children of military personnel. In his 2007 State of the State Address, Governor Rick Perry proposed an increase of \$80 million for state pre-kindergarten programs, noting, “...we still have achievement gaps, and the best place to rectify those gaps is during the earliest learning years.” While legislation that would have laid the groundwork for vast expansion of government pre-k did not reach the House floor, eligibility was extended to a few hundred former foster children in 2007. In addition, several bills that would have further expanded pre-kindergarten and full-day kindergarten on the taxpayers’ dime were filed by members of the 80th Legislature.

Many lawmakers believe that early schooling improves academic achievement. State Representative Mike Villarreal of San Antonio explained, “We know high-quality pre-k gives children a better chance to start school ready to learn.” In a letter to Education Commissioner Robert Scott, Rep. Villarreal cites research out of Texas A&M University finding that in Texas, every dollar invested in high-quality pre-kindergarten returns at least \$3.50 to Texas communities. Some activists claim returns of \$7 or more per dollar invested.

To help determine the efficacy of early education programs, we examined the results of some of the programs considered to be early education models—including Perry Preschool, the Chicago Parent-Child Program, Abecedarian, the Georgia universal pre-k program, and Head Start. We find the widespread adoption of pre-k 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.

While U.S. fourth graders are “A” students on the international curve, that advantage does not last. By twelfth grade, American high school seniors are “D” students on the international scale. This indicates that it is not a lack of preschool preparation that ails children, but rather a failure in the public k-12 system to capitalize on the existing preparedness of young children.

To the limited degree that the state remains involved in financing early education, the Texas Public Policy Foundation recommends measures for transparency, program assessment, consideration of the private sector, and improved flexibility through individual student funding.

## Introduction

Texas' move toward more government preschool 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.<sup>1</sup> 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 and Florida have followed suit. New York, Iowa, West Virginia, and Illinois are making plans for universal pre-k programs, with Illinois including three-year-olds as well.<sup>2</sup> Additionally, the rise in pre-k popularity has led to an increase in funding for pre-k. In 2008, pre-k funding will increase in 36 states.<sup>3</sup>

Conservative estimates show that Texas taxpayers currently spend well over \$1 billion annually on various day care and early education programs, including Head Start, pre-k, and special education.<sup>4</sup> As policymakers consider early education proposals, we have the opportunity to examine research on preschool by reviewing experience and findings from domestic programs and considering international data.

We find strong evidence that the widespread adoption of preschool and full-day kindergarten is unlikely to improve student achievement.

For 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.<sup>5</sup> 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. While most kindergarteners in Texas originally attended for only a half day, now more than 98 percent attend full-

day programs.<sup>6</sup> And more than 60 percent of Texas four-year-olds attend government preschool, including state pre-k, Head Start, and special education.<sup>7</sup> (This is in addition to the approximately 25,000 four-year-olds who enroll in taxpayer-subsidized daycare, according to the Texas Workforce Commission.)

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 the push for expanded government pre-k and kindergarten is the presumption that the state should take more responsibility for educating young children. A large majority of “child advocates” envision something similar, with almost seven 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

## What Do We Know? Understanding the Research

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."<sup>8</sup>

Universal pre-k advocates attempt to address parents' concerns by saying participation in the programs will be voluntary. Yet it is difficult to square that rhetoric with a plan in which "the focus is on all children, from birth to age at entry of kindergarten, residing in Texas."<sup>9</sup> 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.<sup>10</sup> 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."<sup>11</sup> 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.<sup>12</sup>

Fundamentally, the preschool 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.

Policymakers are interested in early education for several reasons. The primary argument made by Texas policymakers is that more early learning will provide the experiences and environment necessary to promote the healthy development of children, leading to subsequent school achievement. To wit:

- Governor Perry's website states, "A child's advancement depends on the development of a strong and high-quality educational system beginning with a solid pre-k start and the completion of a post-secondary education."
- Senate Education Committee member Leticia Van de Putte states, ". . . investing in school readiness reaps life-long benefits for our citizens."<sup>13</sup>
- State Representative Mike Villarreal writes, ". . . in Texas every dollar invested in pre-kindergarten—as long as it is high-quality—returns at least \$3.50 to our communities."<sup>14</sup>

... 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.

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, claims that one dollar invested in full-day kindergarten can return \$3.50 to communities is derived from a Texas A&M University study patterned after a 2005 RAND study examining the Chicago Child-Parent Center program, which had several fundamental differences from a hypothetical universal program in Texas. This will be described further in the section titled "Chicago Child-Parent Center and Universal Pre-K in Texas."

Similar claims of returns of \$7 to \$8 for every dollar are based on a flawed cost-benefit analysis from the Perry Preschool project, a 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."<sup>15</sup> Further undermining confidence in the results is the fact that its findings have never been replicated. These findings are discussed in detail under the section titled "Perry Preschool."

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.<sup>16</sup>

This finding helps explain how two researchers can look at the same study and reach different conclusions: The National Center for Education Statistics (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. A 2006 study out of the University of California at Santa Barbara echoed

this "fade-out" phenomenon for preschoolers, finding that the academic impact from preschool disappeared by the third grade.<sup>17</sup>

The concept of "fade out" is important to discussions of preschool 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 will not result in lasting gains unless or until elementary and secondary schools are significantly improved.

As will be discussed later, in the few instances in which research has shown the potential of early intervention for improving children's long-term outcomes, the 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.

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 for all children, not just the small percentage classified as being at risk for school failure.

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 that have been 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, which was 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.”<sup>18</sup> A 2005 paper by the RAND Corporation states that only one study has examined the long-term benefits of preschool on non-disadvantaged children. Its conclusion: children in programs not targeted to disadvantaged populations were no better off than those not attending any preschool.<sup>19</sup>

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...<sup>20</sup>

Elkind explains that children who receive academic instruction too early 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...”<sup>21</sup>

Other research supports Dr. Elkind’s claims. A study by the National Institute of Child Health and Human Development found that children who spent more time in non-maternal childcare exhibited more behavioral problems than children who spent less time in childcare.<sup>22</sup> A 2006 study by Stanford and the University of California found that “attendance in preschool centers, even for short periods of time each week, hinders the rate at which young children develop social skills and display the motivation to engage in class tasks, as reported by their kindergarten teachers.” Children who had attended preschool were more likely to exhibit aggression and bullying behaviors, and to show a lack of cooperation and self-control.<sup>23</sup>

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 for all children, not just the small percentage classified as being at risk for school failure.<sup>24</sup>

## Ready or Not? An Overview of America's Preschoolers

Discussions of preschool have been 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.”<sup>25</sup> 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.<sup>26</sup>

Here we address the question of whether children are “ready” for kindergarten by examining: (1) the use of early literacy activities; (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.

Researchers often use the frequency with which parents read to their children as an important indicator of readiness.<sup>27</sup> By that measure, a

high and increasing percentage of American preschoolers are ready for kindergarten.

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.<sup>28</sup>

Therefore, according to one common proxy measure of readiness—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.

We find no studies that have examined specifically the preparation levels of Texas preschoolers prior to kindergarten entry. However, Texas public schools do administer the Texas Primary Reading Inventory (TPRI) to students during the kinder-

garten year. In the 2005-06 school year, more than 83 percent of Texas kindergartners were designated “developed” by the TPRI. With the vast majority of Texas kindergartners performing at grade-level according to the TPRI, this assessment indicates that targeted instruction, not universal preschool, is needed to ensure widespread kindergarten preparation. Furthermore, while the pre-k participation rate has steadily climbed, the percent of “developed” five-year-olds has failed to follow this upward trend over the last several years.

A dearth of kindergarten readiness information existed on the national level until 1998 when 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.

## What Impact Does Preschool Have on Student Achievement? A Historical Overview

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.<sup>29</sup>

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.<sup>30</sup> 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.<sup>31</sup>

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.<sup>32</sup> Children's health is reported as very good or excellent, with just three percent of children having "fair or poor general health." At the same time, 92 percent of children are "eager to learn."<sup>33</sup> 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 eight percent consider being able to count as very important or essential.<sup>34</sup>

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.

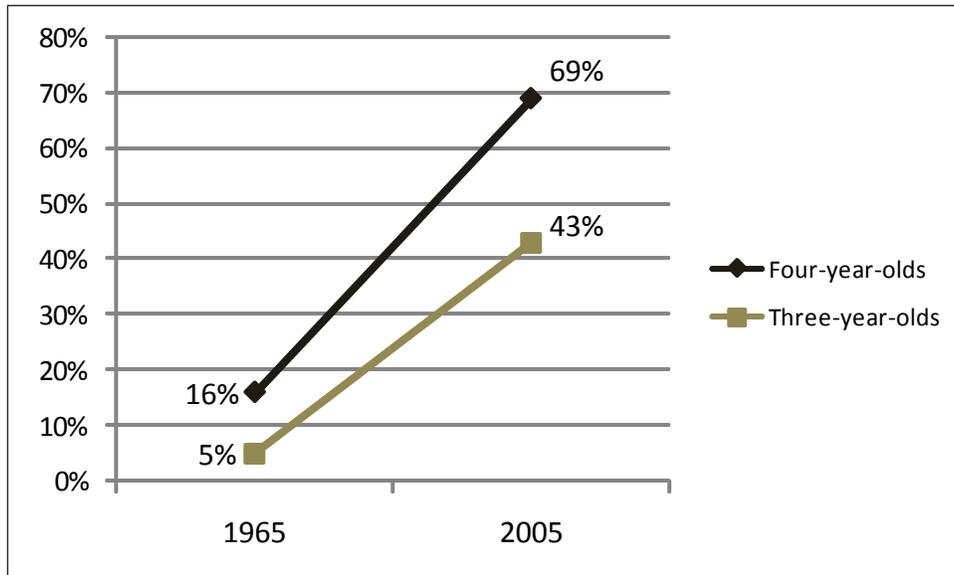
Examining the NCES findings in historical context provides more evidence that the expansion of preschool will not help student achievement. From 1965 to the present day, the United States underwent a sea change in formal early education. Preschool, then uncommon, is now the mode.

As **Figure 1** shows, only 5 percent of three-year-olds attended preschool in 1965—today, an estimated 43 percent attend. Sixteen percent of four-year-olds attended preschool in 1965—today, that figure is 69 percent. For five-year-olds, kindergarten has become almost universal.<sup>35</sup>

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.

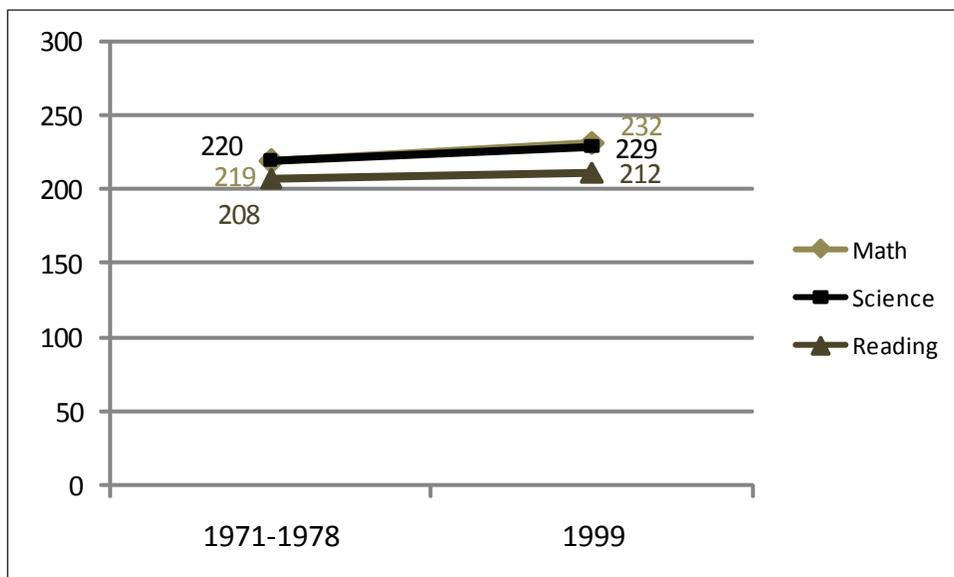
As noted author and education researcher Andrew Coulson reports, "Student achievement has stagnated or fallen in most subjects since 1970... That is the verdict of the five most reliable sources of evidence: the National Assessment of Educational Progress (NAEP), the International Evaluation

**Figure 1: Percentage of Three- and Four-year-olds Enrolled in Preprimary Programs, 1965-2001**



Source: National Center for Education Statistics, *Digest of Education Statistics, 2006*, Table 43, available at [http://nces.ed.gov/programs/digest/d06/tables/dt06\\_043.asp](http://nces.ed.gov/programs/digest/d06/tables/dt06_043.asp).

**Figure 2: Fourth Grade Reading, Science and Math Scores on the NAEP, 1971-1999**



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/](http://nces.ed.gov/nationsreportcard/tables/Ltt1999/).

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.

of Education Achievement (IEA), the Young Adult Literacy Survey (YALS), the National Adult Literacy Survey (NALS), and the International Adult Literacy Survey (IALS).<sup>36</sup>

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.<sup>37</sup>

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.

### **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.<sup>38</sup> Nearly all three- and four-year-olds in France are enrolled in center-based institutions.<sup>39</sup>

#### ***Does the European Model Produce Superior Results?***

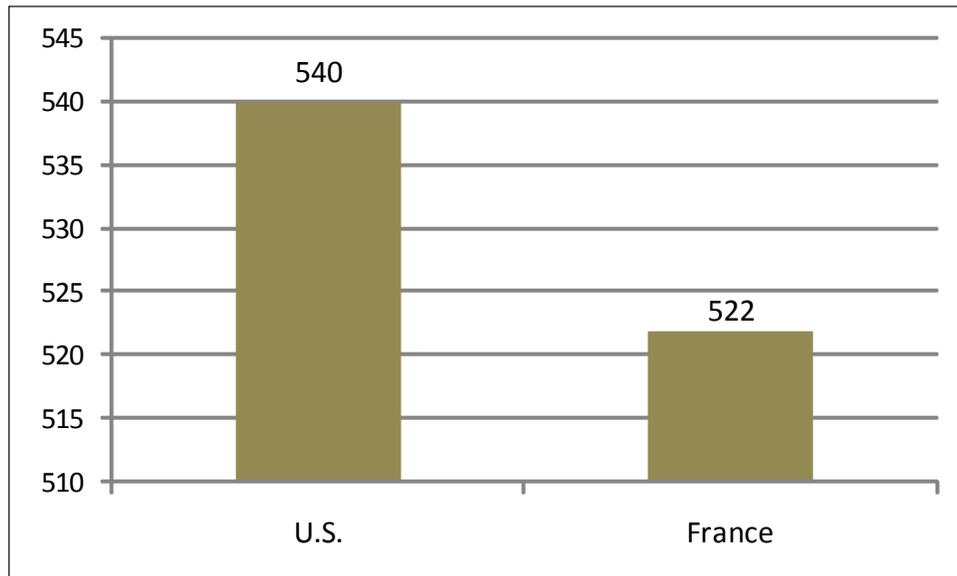
If early education programs were essential building blocks for later school success, we would expect European students to have a stronger showing than U.S. students on international tests, particularly in the early elementary years. However, test scores reveal that U.S. students routinely outperform 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.<sup>40</sup>

With a score of 540, U.S. fourth graders also perform significantly better than the international average of 500, and outperform their counterparts in 27 of the 45 countries participating in the literacy exam. 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.<sup>41</sup>

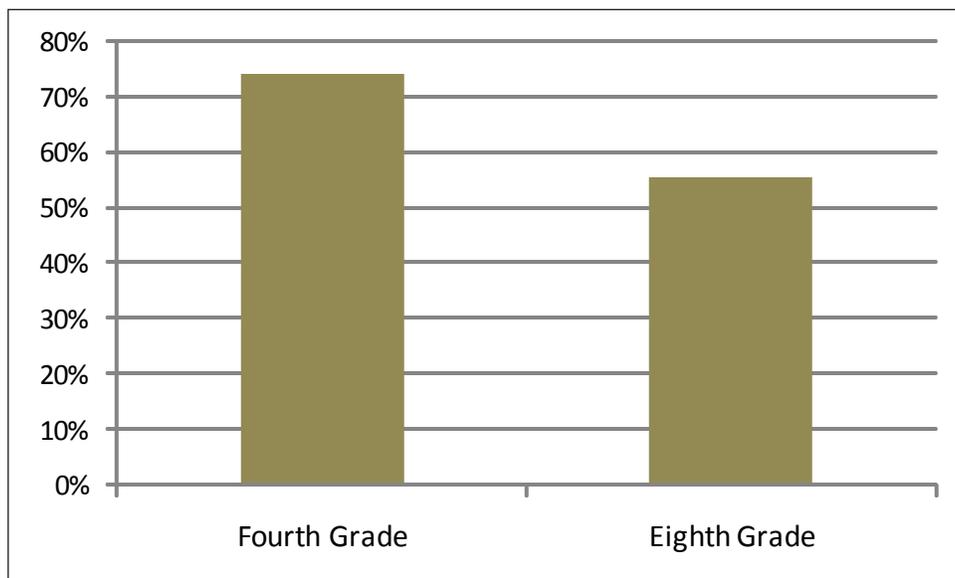
Test data from the Third International Mathematics and Science Study show U.S. fourth graders also have above-average math scores, and their science performance is third only to South Korea and Japan.<sup>42</sup> U.S. fourth graders earned a score of 545 in mathematics, performing significantly better than the international average of 529, and surpassing their counterparts in 14 out of 26 participating countries.<sup>43</sup> In science, U.S. fourth graders scored 565—far above the international average of 524.

**Figure 3: U.S. Fourth Grade Reading Literacy Scores Exceed French Scores, 2006**



Source: U.S. Department of Education, National Center for Education Statistics, "The Reading Literacy of U.S. Fourth-Grade Students in an International Context," NCES 2008-017, November 2007, 7.

**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](http://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](http://nces.ed.gov/pubs2002/2002115.pdf).

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

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 eighth grade in 1999, though, they had become little better than “C” students on a global curve....”<sup>44</sup> 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.<sup>45</sup> 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.<sup>46</sup> 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.”<sup>47</sup> Figures 5 and 6 illustrate the decline.

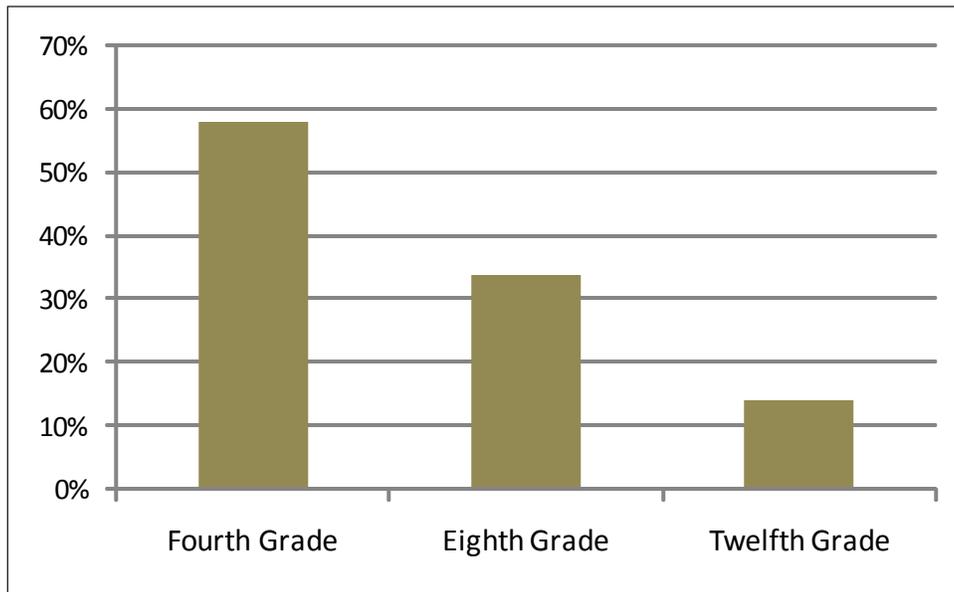
**Figure 5** shows U.S. students score higher than 58 percent of their international peers in math in the fourth grade, but score higher than just 14 percent by twelfth grade. **Figure 6** shows a similar decline in science performance with U.S. students surpassing 92 percent of their international peers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

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.

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.<sup>48</sup>

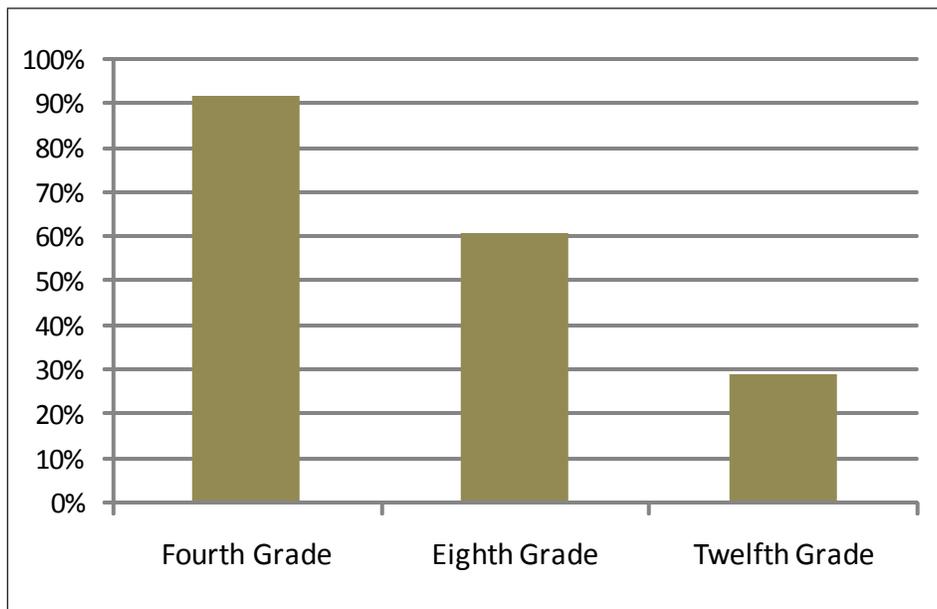
Investigators at the High/Scope Educational Research Foundation in Ypsilante, Michigan, conducted the experiment from 1962 to 1965. The investigators reported their most recent findings in “Lifetime Effects: The High/Scope Perry Preschool Study through Age 40.”<sup>49</sup> The project was an intervention program for three- and four-year-olds deemed at risk for “retarded intellectual functioning and eventual school failure.”<sup>50</sup> 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.<sup>51</sup> The study is frequently cited because it is the longest running study of any preschool intervention program.

**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 TIMSS data, available at [isc.bc.edu/timss1995i/TIMSSPDF/P1HiLite.pdf](http://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](http://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](http://isc.bc.edu/timss1995i/TIMSSPDF/C_Hilite.pdf).

**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](http://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](http://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](http://isc.bc.edu/timss1995i/TIMSSPDF/C_Hilite.pdf).

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.

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.”<sup>52</sup> On the basis of those findings, Schweinhart concluded, “The program provided taxpayers a return on investment of \$7.16 on the dollar.”<sup>53</sup> 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.<sup>54</sup>

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.”<sup>55</sup> 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.<sup>56</sup> 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.<sup>57</sup>

More important, 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 Chicago Child-Parent Centers and Universal Pre-K in Texas

[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.<sup>58</sup>

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.<sup>59</sup> 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.<sup>60</sup> 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.”<sup>61</sup>

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

As previously mentioned, the claim of \$3.50 in benefits for every dollar spent on universal pre-k in Texas comes from a 2006 Texas A&M University study based on previous evaluations of the Chicago Child-Parent Center (CPC) program.<sup>62</sup> While the CPC program and its subsequent evaluations included a larger sample size of students than Perry Preschool—about 1,500—the program differs largely from the universal pre-k programs it is used to support.

Children in the Chicago program were subjects of a longitudinal study concluding that children going through the program had a higher rate of high school completion, more years of completed education, and lower rates of criminal activity.<sup>63</sup> But similar to the Perry Preschool Program, the CPC program included only the most disadvantaged students and is largely incomparable to a universal pre-k program in Texas. In a critique of the program’s applicability to universal pre-k cost-benefit calculations, researchers Christopher F. Cardiff and Edward Stringham described,

...students in the Chicago study didn’t just go to preschool. They also received speech therapy, health screenings, meals, tutoring through the third grade, and six years of a Child-Parent Center Program that boosted parental

Overestimation of certain benefits and omission of some costs cast doubt upon the \$3.50 return-per-dollar estimate so frequently cited in discussions of universal pre-k in Texas.

involvement. The lead researcher of the Chicago project, Arthur J. Reynolds, Ph.D., cited the Child-Parent Center as a primary reason for the plan's overall success. "We are confident that participation in the Child-Parent Center Program from ages 3 to 9 years was the source of the group differences at age 20 years," Reynolds stated.<sup>64</sup>

Psychologist Dr. Matthew Thompson of Children's Hospital in New Orleans offered a similar review: "It is possible that parental involvement explains more of the variance in outcome among inner-city children than do structured programs."<sup>65</sup> Parent participation before, during, and after a student's participation in CPC was a vital part of the program, but such a requirement would be absent from a universal pre-k program in Texas. As such, it is impossible to assume that the same long-term benefits would accrue.

Further, both the 2006 Texas A&M study and a 2005 RAND study assume benefits to middle- and upper-income students, neither of whom were served by the Chicago program.<sup>66</sup> While both studies do assign smaller benefits to these students, there is no evidence—neither from the Chicago program nor other preschool research—that they will derive any long-term benefits at all. And as

cited earlier, more recent research indicates that students may experience negative behavioral consequences<sup>67</sup>—an intangible cost that both studies neglected to address.

Even tangible costs are often underestimated or omitted completely. The Texas A&M study calculated the benefits of a full-day pre-k program with after-school care for all four-year-olds. Each class of 17 would be led by one certified teacher (complete with a Bachelors degree, early childhood education certificate, and at least three years of experience) and a teaching assistant with at least an Associates degree. The study took into account salary costs of \$35,120 per teacher and \$15,020 per assistant. However, the study failed to account for recruitment, start-up, and ongoing turnover costs. While there is not an overall shortage of elementary teachers in Texas, there may well be a shortage of early childhood certified educators with at least three years of experience. If so, wages will have to increase to meet the new demand. The study gives no evidence to suggest that these teachers are readily available, and does not account for the increased wages that will be required to attract them if they are not.

Overestimation of certain benefits and omission of some costs cast doubt

upon the \$3.50 return-per-dollar estimate so frequently cited in discussions of universal pre-k in Texas. Cardiff and Stringham found that changing just a few assumptions about the benefits of universal pre-k in California cause the return per dollar to drop from \$2.62 to \$0.71—a "loss" of a more than a quarter for every dollar invested in pre-k—and that number would drop further if some of the omitted costs were considered.<sup>68</sup>

While the Chicago program offers great insight into the benefits of intense academic intervention and increased parental involvement for disadvantaged inner-city children, its results should not be extrapolated to apply to all children who would take part in universal pre-k in Texas.

## The Carolina Abecedarian Project

Although it is not a preschool 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,

“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.” —Herman H. Spitz

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.<sup>69</sup>

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.”<sup>70</sup> 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.”<sup>71</sup>

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.<sup>72</sup> 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.<sup>73</sup>

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.<sup>74</sup> 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.<sup>75</sup>

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.”<sup>76</sup> 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?”<sup>77</sup> 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.”<sup>78</sup> 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.<sup>79</sup>



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.”<sup>80</sup> 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, Perry Preschool, Chicago Child-Parent Centers, and Abecedarian do not speak to mainstream children nor to the type of preschool programs proposed by today’s policymakers. All were model projects that treated a relatively 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.

## 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.<sup>81</sup> The reality of Head Start has been much different. Head Start programs have had mixed short-term results, and consistent with broad findings on early education, 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.<sup>82</sup> 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.”<sup>83</sup> No study used a nationally representative sample so that findings could be generalized

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

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.”<sup>84</sup>

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.”<sup>85</sup> For supporting evidence, HHS cited findings from a comprehensive synthesis of Head Start impact studies conducted under HHS auspices in 1985.<sup>86</sup> 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.”<sup>87</sup>

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.”<sup>88</sup>

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.”<sup>89</sup>

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.”<sup>90</sup> Longer-term assessments have not yet been conducted, but are currently underway by Westat.

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.”<sup>91</sup>

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.”<sup>92</sup>

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."<sup>93</sup>

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.<sup>94</sup>

Other findings on grade retention and curriculum are also informative. The researchers report, "About 15 percent of the children were re-

tained at least once by their fourth year of primary school."<sup>95</sup> 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."<sup>96</sup> 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...."<sup>97</sup>

After 10 years, the Georgia preschool program had served over 300,000 children at a cost of \$1.15 billion and children's test scores were unchanged.<sup>98</sup> Yet taxpayer dollars continue to support the ineffective program.

## Recommendations

In order to best serve Texas children and their parents, lawmakers should follow several key principles when considering changes and improvements to early childhood education:

### 1. Increase Transparency

We recommend the Texas Legislature bring transparency to current spending by identifying, documenting, and tracking the amount of federal, state, and local spending on child care and preschool programs in Texas.

The Texas Early Education Model (TEEM), a model which merges the public and private sectors and currently enrolls about 30,000 Texas children, is in particular need of greater transparency. TEEM has the potential of increasing accountability while saving taxpayers millions of dollars in facilities costs by making use of private facilities. Because of the model's unique public-private arrangement, TEEM centers receive funding from multiple streams including average daily attendance (ADA) and pre-k expansion grants at the state level, TEEM funding appropriated by the legislature, supple-



mental dollars at the district level, Head Start and Temporary Assistance for Needy Families (TANF) at the federal level, and possibly even private funds. However, a recent report commissioned by the Texas Education Agency found that the State Center for Early Childhood Development, which directs TEEM, “is not transparent, expenditures and performance are not recapitulated for policy makers and a key and growing public school program is being operated not out of the Texas Education Agency but a medical school in Houston.”<sup>99</sup> The multiple funding streams make it difficult, if not impossible, for policymakers and outside researchers to calculate the total cost of the program. While the Center reports overhead costs of less than \$400 per student, it is unable to report a per-student cost with all funding streams included.

To allow for increased transparency for taxpayers and policymakers, an independent body such as the state Comptroller’s office or Legislative Budget Board should carefully evaluate current per-student spending on all early education programs. Streamlining all early education programs—which currently fall under the Texas Education Agency, Texas Workforce Commission, and State Center—into one agency could simplify this process while eliminat-

ing redundant bureaucracies at the same time.

### **2. Assess Impact**

As a matter of good public policy, we recommend the Legislature require an impact assessment of current early education expenditures, including those funding state pre-k, Head Start, and TEEM. This is particularly important in light of empirical evidence demonstrating the inability of early education programs to improve long-term academic performance. There is almost no information available on the impact of the more than \$1 billion spent annually on these programs on student learning.<sup>100</sup>

### **3. Consider Effect on Existing Providers**

Statistics show that the vast majority of low-income children are already enrolled in public preschool in Texas. If free pre-k eligibility is further extended, the result will be nothing more than a government subsidy towards middle- and upper-income families, at the expense of taxpayers and privately-owned day cares and preschools. 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.”<sup>101</sup> More than 2,000 groups have closed since 1997 and 1,500 avoided closure only because of emergency funding from the government.<sup>102</sup>

### **4. Transform Current Spending into Grants**

To the degree that the state continues 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.<sup>103</sup> We discuss just a few important considerations here.

The best available estimates show that Texas currently spends more than \$1 billion annually on pre-kindergarten schooling.<sup>104</sup> As previously mentioned, the state pre-k program focuses primarily on at-risk students, such as those from low-income or non-English speaking families. With more than 60 percent of Texas four-year-olds enrolled in government preschool, and in light of research that shows long-term advantages for low-income children only, current state eligibility levels are more than sufficient. Instead of wasting tax dollars on in-

In total, every child in Texas who qualifies for pre-k but does not have the opportunity to enroll locally—and whose parents desire for them to participate—could be given that opportunity in a private setting for a total taxpayer expenditure of no more than \$6.4 million per year.

creasing eligibility for children from middle- and upper-income families, it would be more prudent to ensure that parents who desire to send their eligible children to pre-k have the opportunity to do so.

Texas law requires each school district to offer pre-k if it has 15 or more qualifying four-year-olds. In districts with fewer than 15 qualifying four-year-olds, parents often do not have the option to enroll their child in pre-k even if they are otherwise eligible. This affects approximately 720 students throughout the state.<sup>105</sup> Furthermore, some districts request that the state waive their requirement to offer pre-k for reasons such as insufficient classroom space. This affects an estimated 950 students each year.<sup>106</sup> In total, approximately 1,670 four-year-olds in Texas are eligible for pre-k but do not have the opportunity to enroll in their district.

For most of these districts, starting a pre-k program would require building additional classroom space or hiring a new teacher for a very small number of children—both inefficient solutions to the problem. In order to provide the schooling for which these children are eligible, while considering the cost to taxpayers, it would be most economical to allow these children to enroll

in a private pre-k center using the money that would have been spent on them if a public pre-k were available. In Texas, this amount averages \$2,721 per student in half-day pre-k, excluding facilities, teacher retirement, and other fixed costs.<sup>107</sup> With average cost of enrollment for a four-year-old in a privately-owned pre-kindergarten or child care center at \$2,409 per year,<sup>108</sup> this would be more than enough to provide private school tuition. Furthermore, the existing School Readiness Certification system could be used to ensure that participating providers meet a high standard of quality based on outcomes.

In total, every child in Texas who qualifies for pre-k but does not have the opportunity to enroll locally—and whose parents desire for them to participate—could be given that opportunity in a private setting for a total taxpayer expenditure of no more than \$6.4 million per year. When compared with universal pre-k estimates of up to \$1.8 billion,<sup>109</sup> or even the relatively smaller \$80 million requested by the governor, this \$6.4 million solution clearly arises as a superior alternative for parents and taxpayers—second only to a complete conversion of the current pre-k system into one that provides grants for use by every eligible student.

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.<sup>110</sup> On January 2, 2005, Florida Governor Jeb Bush signed a bill allowing Florida 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.<sup>111</sup>

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."<sup>112</sup> 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."<sup>113</sup>

Akin to Florida's flexible system, we recommend parents be allowed to spend their grants in any public or private preschool program of their choice. Policymakers should ensure the continued independence of private providers. This will allow

Texas 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.

families to choose from a diversity of curricula, hours, and standards that suit individual student learning needs. Furthermore, studies suggest that the ability to choose a school contributes positively to parental involvement, which was a key catalyst for success in programs such as the Chicago Parent-Child Center program.<sup>114</sup>

Texas 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.

## Conclusion

To the degree that the state remains involved in early education, we recommend adopting a flexible system of per-child grants. Current state spending per pre-k student is higher than the average private sector cost, so such a program would not only allow more parental choice and help maintain the private sector, but would also save taxpayer dollars.

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

- 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."<sup>115</sup>
- 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."<sup>116</sup>
- Historic trends are not encouraging. The preschool enrollment rate of four-year-olds has climbed from 16 percent to 69 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 further expanding government's role in the education of children from birth to age five, and recommend alternative measures for improving the Texas education system—including market-based reforms such as performance-based pay and parental choice. ★

## Endnotes

<sup>1</sup> The exception is the United Kingdom, where enrollment of three-year-olds is 52 percent. U.S. Department of Education, National Center for Education Statistics, "Comparative Indicators of Education in the United States and Other G-8 Countries: 2002," *NCES 2003-026* (May 2003) 26. Also available at <http://nces.ed.gov/pubs2003/2003026.pdf> (accessed 18 Jan. 2005).

<sup>2</sup> Pre-k Now, "National Snapshot", <http://www.preknow.org/advocate/factsheets/snapshot.cfm>

<sup>3</sup> Susan K. Urahn, "Votes Count: Legislative Action on Pre-K, Fiscal Year 2008," The Pew Center on the States. *Pre[k]now* (Sept. 2007).

<sup>4</sup> Author's calculations based on data procured from the Texas Education Agency, Texas Workforce Commission, and the National Child Care Coalition.

<sup>5</sup> "Short term" is defined as one to three years after program participation. For further reading, see Arthur J. Reynolds et al., "The State of Early Childhood Intervention: Effectiveness, Myths and Realities, *New Directions, Focus 1*, 19 (Summer/Fall 1997) 6. See also Donna Bryant and Kelly Maxwell, "The Effectiveness of Early Intervention for Disadvantaged Children," in *The Effectiveness of Early Intervention*, Michael J. Guralnick, ed. (Baltimore, Md: Paul H. Brookes Publishing Co., 1997) 23–46.

<sup>6</sup> TEA data obtained by phone interview.

<sup>7</sup> Jamie Story, "Myths and Facts about Pre-K in Texas," Texas Public Policy Foundation (Jan. 2007) <http://www.texaspolicy.com/pdf/2007-01-PB02-preK-js.pdf>.

<sup>8</sup> The questions and answers in this survey reflect views on child care systems. However, child advocates regularly use the term "early childhood care and education," which reflects the belief that child care and education are considered joint—not separate—functions. The survey is informative about parents' and advocates' basic beliefs regarding the appropriate role of government in the child care and early education arena. "Necessary Compromises: How Parents, Employers and Children's Advocates View Child Care Today," *Public Agenda* (2000) 11–13.

<sup>9</sup> "The Texas Plan: A Statewide Early Education and Development System," Texas Early Childhood Education Coalition and Texas Program for Society and Health, 2nd edition (May 2005) 7, <http://www.tecec.org/files/The%20Texas%20Plan,%20Edition%202.pdf>.

<sup>10</sup> See Darcy Olsen, "Mandatory preschool another power grab," *Milwaukee Journal-Sentinel* (2 Aug. 2001) <http://www.cato.org/dailys/08-14-01.html> (accessed 18 Jan. 2005).

<sup>11</sup> Zell Miller, cited in Jodie Morse, "Preschool for Everyone," *TIME* (9 Nov. 1998).

<sup>12</sup> Vermont state legislator Bill Suchmann passed away in 2001. See "VT GOP Mourns Passing of Former Representative Bill Suchmann," [www.vermontgop.org/suchmann.shtml](http://www.vermontgop.org/suchmann.shtml) (accessed 18 Jan. 2005). See also Anne Geggis, "Mandatory preschool?" *Burlington Free Press* (16 Feb. 1998).

<sup>13</sup> Media Advisory from the office of State Senator Leticia Van de Putte (19 Sept. 2006) <http://www.vandeputte.senate.state.tx.us/pr06/m091906a.htm>.

<sup>14</sup> Letter from Rep. Mike Villarreal and other legislators to Education Commissioner Robert Scott (11 Dec. 2007).

<sup>15</sup> Edward Zigler, Cara Taussig, and Kathryn Black, "Early Childhood Intervention: A Promising Preventative for Juvenile Delinquency," *American Psychologist* 47, no. 8 (Aug. 1992) 1000.

<sup>16</sup> This discussion does not consider the health or nutrition components of early intervention programs. "Long term" is defined as four or more years after program participation. Most studies of this kind are impaired by high attrition rates and selection bias and are limited in statistical power and generalizability. For reviews, see Walter Gilliam and Ed Zigler, "A Critical Meta-Analysis of All Evaluations of State-Funded Preschool from 1977 to 1998: Implications for Policy, Service Delivery and Program Evaluation," *Early Childhood Research Quarterly* 15, no. 4 (Winter 2000): 441–473; Reynolds et al., "The State of Early Childhood Intervention: Effectiveness, Myths and Realities, *New Directions*," 6; Bryant and Maxwell, "The Effectiveness of Early Intervention for Disadvantaged Children," 23–46; and Nancy L. Karweit, "Effective Preschool Programs for Students at Risk," in *Effective Programs for Students at Risk*, R. E. Slavin, ed. (Needham, Mass.: Allyn and Bacon, 1989) 75–102.

<sup>17</sup> Russell W. Rumberger and Loan Tran, "Preschool Participation and the Cognitive and Social Development of Language Minority Students," *UC LMRI Technical Report*, University of California, Santa Barbara (Jan. 2006).

<sup>18</sup> David Weikart cited in Kenneth T. Walsh, "The three R's and the big P," *U.S. News & World Report* (30 Aug. 1999) 26.

<sup>19</sup> Eliana Garcas, Duncan Thomas, and Janet Currie, "Longer-Term Effects of Head Start," *American Economic Review*, Vol. 92, No. 4 (Sept. 2002) 999–1012 (As examined in Lynn A. Karoly and James H. Bigelow, "The Economics of Investing in Universal Preschool Education in California," RAND Corporation (Mar. 2005) xxviii).

<sup>20</sup> David Elkind, *Miseducation: Preschoolers at Risk* (New York: Knopf, 1997) 69.

<sup>21</sup> *Ibid.*, 4.

<sup>22</sup> “The NICHD Study of Early Child Care and Youth Development: Findings for Children up to Age 4 ½ Years,” U.S. Department of Health and Human Services, National Institutes of Health (Jan. 2006).

<sup>23</sup> Susanna Loeb, et al, *How Much is Too Much? – The Influence of Preschool Centers on Children’s Development Nationwide*, Stanford University and the University of California, Summary pages 2-3. Presented at Association for Policy Analysis and Management, Washington, D.C. (4 Nov. 2005).

<sup>24</sup> For a summary of current trends in universal programs, see Susan Block, “In the Beginning: Good Preschools Have Much to Offer, But Should They Be Universal? Some Research Suggests Otherwise,” *American School Board Journal* (Nov. 2003) <http://www.asbj.com/2003/11/1103research.html> (accessed 18 Jan. 2005).

<sup>25</sup> The National Education Goals Panel (NEGP) has been dissolved pursuant to congressional mandate. NEGP publications are available online at <http://govinfo.library.unt.edu/negp/>.

<sup>26</sup> For discussion on readiness and kindergarten curriculum, see Richard Rothstein, “Lessons: In the Kingergartens, A Misguided Push,” *The New York Times* (21 Mar. 2001); Lorrie A. Shepard, “Children Not Ready to Learn? The Invalidity of School Readiness Testing,” *Psychology in the Schools* 34, no. 2 (1997) 85–97; Patricia L. de Cos, “Readiness for Kindergarten: What Does It Mean?,” California Research Bureau, California State Library, CRB–97–014 (Dec. 1997); and Yolanda Bellisimo, Colin H. Sacks, and John R. MerDeborah May, et al., “School Readiness: An Obstacle to Intervention and Inclusion,” *Journal of Early Intervention* 18, no. 3 (1994) 290–301.

<sup>27</sup> Other measures include physical health indicators, which are not addressed in this analysis. See also Pascal Forgione, U.S. Commissioner of Education Statistics, “Early Childhood Education: Critical Data Needs for a Critical Period of Child Development,” Testimony before the Committee on Labor and Human Resources Hearing, U.S. Senate (17 Dec. 1999).

<sup>28</sup> Kathryn Chandler, “Home Literacy Activities and Signs of Children’s Emerging Literacy, 1993 and 1999,” National Center for Education Statistics, *Statistics in Brief, NCES 2000–026* (Nov. 1999).

<sup>29</sup> Nicholas Zill and Jerry West, “Entering Kindergarten: A Portrait of American Children When They Begin School,” U.S. Department of Education, National Center for Education Statistics, *NCES 2001–035* (Jan. 2001) 6.

<sup>30</sup> U.S. Department of Education, National Center for Education Statistics, “America’s Kindergartners,” *NCES 2000–070* (Feb. 2000) 16.

<sup>31</sup> *Ibid.*, 17.

<sup>32</sup> Ninety-six percent rank physical health as very important or essential, followed by 84 percent ranking communicating needs as very important or essential, followed by 76 percent ranking enthusiasm in approaching new activities as very important or essential. We do not examine the second factor, communication, because there is no corresponding measure for this factor in the NCES data. U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics* (1996) Table 48, <http://nces.ed.gov/programs/digest/d96/D96T048.asp> (accessed 18 Jan. 2005).

<sup>33</sup> Parents report that 92 percent of children are eager to learn. However, teachers report that 75 percent are eager to learn—highlighting the subjective nature of these measures. U.S. Department of Education, “America’s Kindergartners,” 39, 45.

<sup>34</sup> U.S. Department of Education, *Digest of Education Statistics* (1996) Table 48.

<sup>35</sup> U.S. Department of Education, *Digest of Education Statistics* (2006).

<sup>36</sup> Andrew Coulson, *Market Education* (London: Transaction Publishers, 1999) 179.

<sup>37</sup> Between 1959–60 and 1989–90, inflation-adjusted spending more than tripled. See Andrew Coulson, *Market Education*, 32. From 1959–60 to 2001–02, average annual salaries for elementary and secondary teachers rose from \$36,000 to \$44,000 (in constant dollars). See U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics* (2002) <http://nces.ed.gov/programs/digest/d02/dt077.asp> (accessed 18 Jan. 2005). Pupil-to-teacher ratios in public schools have declined from one teacher for every 26 students in 1960 to one teacher for every 16 students in 2002. See U.S. Department of Education, *Digest of Education Statistics* (2003).

<sup>38</sup> Sandra Feldman, Remarks to the AFT QuEST Conference (12 July 2001) <http://www.aft.org/presscenter/speeches-columns/speeches/feldman071201.htm> (accessed 18 Jan. 2005). See also Ann Dryden Witte and Marisol Trowbridge, “The Structure of Early Care and Education in the United States: Historical Evolution and International Comparisons,” *NBER Working Paper* No. 10931 (Nov. 2004).

<sup>39</sup> U.S. Department of Education, “Comparative Indicators of Education in the United States and Other G-8 Countries: 2002.”

<sup>40</sup> 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* (Apr. 2003) 5.

<sup>41</sup> U.S. Department of Education, National Center for Education Statistics, “Elementary and Secondary Education: An International Perspective,” *NCES 2000–033* (Mar. 2000) 56.

<sup>42</sup> U.S. students outperformed 23 out of 26 participating countries. Students in Italy, Germany, and France did not participate in this exam. See “TIMSS Highlights From the Primary Grades,” <http://timss.bc.edu/timss1995i/TIMSSPDF/P1HiLite.pdf> (accessed 18 Jan. 2005).

<sup>43</sup> U.S. students performed better than those in the United Kingdom. Students in Italy, Germany, and France did not participate in this exam. *Ibid.*

- <sup>44</sup> David J. Hoff, "U.S. Students' Scores Drop by 8th Grade," *Education Week* (13 Dec. 2000).
- <sup>45</sup> For a summary of math and science scores, see International Association for the Evaluation of Educational Achievement, "Mathematics and Science Achievement in the Final Year of Secondary School: IEA's Third International Mathematics and Science Study" (Feb. 1998) <http://isc.bc.edu/timss1995i/MathScienceC.html> (accessed 18 Jan. 2005).
- <sup>46</sup> U.S. students scored 471—significantly below the international average of 500. *Ibid.*
- <sup>47</sup> U.S. Department of Education, National Center for Education Statistics, "Elementary and Secondary Education: An International Perspective," NCES 2000–033 (Mar. 2000) 51.
- <sup>48</sup> Reynolds et al., 8.
- <sup>49</sup> Lawrence J. Schweinhart, "The High/Scope Perry Preschool Study Through Age 40," High/Scope Educational Research Foundation. See <http://www.highscope.org/welcome.asp> for official publication date.
- <sup>50</sup> Zigler, Taussig, and Black, 1000.
- <sup>51</sup> For a complete program description, see Lawrence Schweinhart and David Weikart, "The Effects of the Perry Preschool Program on Youths through Age 15: A Summary," in the *Consortium for Longitudinal Studies, As the Twig Is Bent—Lasting Effects of Preschool Programs* (Hillsdale, N.J.: Lawrence Erlbaum Associates, 1983) 71–81.
- <sup>52</sup> Lawrence J. Schweinhart, "Lasting Benefits of Preschool Programs," *ERIC Digest* EDO–PS–94–2 (Jan. 1994).
- <sup>53</sup> Lawrence J. Schweinhart, *Significant Benefits: The High/Scope Perry Preschool Study through Age 27* (Ypsilante, Mich.: High/Scope Press, 1993) 55; and Schweinhart, "Lasting Benefits of Preschool Programs," 2.
- <sup>54</sup> Zigler, Taussig, and Black, 1002.
- <sup>55</sup> *Ibid.*, 1000.
- <sup>56</sup> Charles Locurto, "Beyond IQ in Preschool Programs?" *Intelligence* 15 (1991) 299–305.
- <sup>57</sup> *Ibid.*, 303–304.
- <sup>58</sup> Edward F. Zigler, "Formal Schooling for Four-Year-Olds? No," in *Early Schooling: The National Debate*, Sharon L. Kagan and Edward F. Zigler eds. (New Haven, Conn.: Yale University Press, 1987) 30–31.
- <sup>59</sup> Ron Haskins, "Beyond Metaphor: The Efficacy of Early Childhood Education," *American Psychologist* 44, no. 2 (Feb. 1989) 279.
- <sup>60</sup> Schweinhart, *Significant Benefits*, 59, 86, 106.
- <sup>61</sup> Deanna S. Gomby et al., "Long-Term Outcomes of Early Childhood Programs: Analysis and Recommendations," in *The Future of Children* 5, no. 3 (Winter 1995) 14.
- <sup>62</sup> Dr. Lori Taylor et al., "A Cost-Benefit Analysis of Universally-Accessible Pre-Kindergarten Education in Texas," The Bush School of Government & Public Service, Texas A&M University (May 2006).
- <sup>63</sup> Arthur J. Reynolds et al., "Long-term Effects of an Early Childhood Intervention on Educational Achievement and Juvenile Arrest," *Journal of American Medical Association*, Vol. 285, No. 18 (9 May 2001).
- <sup>64</sup> Christopher F. Cardill and Edward Stringham, "Is Universal Preschool Beneficial? An Assessment of RAND Corporation's Analysis and Proposals for California," Reason Foundation (May 2006) 9.
- <sup>65</sup> Matthew D. Thompson, "Early Childhood Educational Intervention and Long-Term Developmental Outcomes," Letters, *The Journal of American Medical Association*, Vol. 286, No. 15 (17 Oct. 2001).
- <sup>66</sup> Taylor et al, 40; and Lynn A. Karoly and James H. Bigelow, "The Economics of Investing in Universal Preschool Education in California," RAND Corporation (Mar. 2005) 103.
- <sup>67</sup> See Elkind; Loeb.
- <sup>68</sup> Cardill and Stringham, 13.
- <sup>69</sup> For background on the Abecedarian Project, see Frances A. Campbell and Craig T. Ramey, "Cognitive and School Outcomes for High-Risk African-American Students at Middle Adolescence: Positive Effects of Early Intervention," *American Educational Research Journal* 32, no. 4 (Winter 1995) 743–72; and Craig T. Ramey, Frances A. Campbell, and Clancy Blair, "Enhancing the Life Course for High-Risk Children: Results from the Abecedarian Project," in Jonathan Crane, ed., *Social Programs That Work* (New York: Russell Sage Foundation: 1998) 179–180.
- <sup>70</sup> Campbell and Ramey, 750–752.
- <sup>71</sup> Campbell et al., "The Development of Cognitive and Academic Abilities: Growth Curves from an Early Childhood Educational Experiment," *Developmental Psychology* (Mar. 2001) 231–242.
- <sup>72</sup> Campbell and Ramey, 766.
- <sup>73</sup> Bryant and Maxwell, 34.

<sup>74</sup> Spitz left Johnstone in 1989. Since then he has published several papers on the Abecedarian Project, including Herman H. Spitz, "Some Questions about the Results of the Abecedarian Early Intervention Project Cited by the APA Task Force on Intelligence," *American Psychologist* 52, no. 1 (Jan. 1997) 72; Herman H. Spitz, "When Prophecy Fails: On Ramey's Response to Spitz's Critique of the Abecedarian Project," *Intelligence* 17 (1993) 17–23; Herman H. Spitz, "Spitz's Reply to Ramey's Response to Spitz's First Reply to Ramey's First Response to Spitz's Critique of the Abecedarian Project," *Intelligence* 17 (1993) 31–35; Herman H. Spitz, "Early Educational Intervention Research and Cronbach's Two Disciplines of Scientific Psychology," *Intelligence* 17 (1993) 251–255; Herman H. Spitz, "Does the Carolina Abecedarian Early Intervention Project Prevent Sociocultural Mental Retardation?" *Intelligence* 16 (1992) 225–237; and Herman H. Spitz, "Commentary on Locurto's 'Beyond IQ in Preschool Programs?'" *Intelligence* 15 (1991) 327–333.

<sup>75</sup> Spitz, "Does the Carolina Abecedarian Early Intervention Project Prevent Sociocultural Mental Retardation?": 228–229.

<sup>76</sup> Spitz, "Some Questions about the Results of the Abecedarian Early Intervention Project Cited by the APA Task Force on Intelligence," 72.

<sup>77</sup> Ibid.

<sup>78</sup> Spitz, "Spitz's Reply to Ramey's Response to Spitz's First Reply to Ramey's First Response to Spitz's Critique of the Abecedarian Project," 35.

<sup>79</sup> For example, Spitz explains that mothers of the experimental group were present at the testing and assisted in the administration of some tests. That means that the mothers may have provided their children with practice on some of the test items. Spitz, "Does the Carolina Abecedarian Early Intervention Project Prevent Sociocultural Mental Retardation?" 231–232.

<sup>80</sup> Campbell et al., "The Development of Cognitive and Academic Abilities: Growth Curves from an Early Childhood Educational Experiment," 231–242.

<sup>81</sup> See U.S. Department of Health, Education, and Welfare, Office of Child Development, "Recommendations for a Head Start Program by a Panel of Experts" (19 Feb. 1965) 1–7. This report is now available from the Department of Health and Human Services, Administration for Children, Youth and Families; and Lyndon B. Johnson, Public Papers of the Presidents of the United States: Lyndon B. Johnson, Book 1, January 1 to May 31, 1965 (Washington: Government Printing Office, 1966) 556.

<sup>82</sup> U.S. General Accounting Office, "Head Start: Research Provides Little Information on Impact of Current Program," GAO/HEHS–97–59 (Apr. 1997).

<sup>83</sup> Selection criteria included whether Head Start participation had occurred in 1976 or later; whether studies compared outcomes for participants with those for children not attending any preschool or another preschool; whether studies compared Head Start outcomes with test norms; and whether studies used tests of statistical significance. Ibid., 10, 24–26.

<sup>84</sup> Ibid., 8.

<sup>85</sup> Reproduced in Ibid., 48.

<sup>86</sup> The synthesis study is McKey et al., conducted under contract for the Department of Health and Human Services. Ruth McKey et al., "The Impact of Head Start on Children, Families, and Communities," U.S. Department of Health and Human Services, HHS 85–31193 (June 1985).

<sup>87</sup> Ibid., 1.

<sup>88</sup> Ibid., 8, III–11.

<sup>89</sup> Ibid., 12–13

<sup>90</sup> Nicholas Zill et al., "Head Start FACES 2000: A Whole-Child Perspective on Program Performance," U.S. Department of Health and Human Services, HHS–105–96–1912 (May 2003).

<sup>91</sup> Laura Henderson, Kathleen Basile, and Gary Henry, "Prekindergarten Longitudinal Study 1997–1998 School Year Annual Report," Georgia State University Applied Research Center School of Policy Studies (Apr. 1999) 39.

<sup>92</sup> Linda Schrenko, cited in James Salzer, "School Readiness the Same for Tots; Results Unchanged Despite Pre-K," *The Florida Times-Union* (1 Nov. 1999).

<sup>93</sup> Gary T. Henry et al., "Georgia Pre-K Longitudinal Study: Final Report 1996–2001," Andrew Young School of Policy Studies, Georgia State University (May 2003) 42, <http://aysps.gsu.edu/publications/GPKLSFinalReportMay2003.pdf> (accessed 18 Jan. 2005).

<sup>94</sup> Ibid., 42; and Linda C. Schrenko, State School Superintendent, "Superintendent Schrenko Releases State NAEP Mathematics and Stanford 9 Scores," press release (2 Aug. 2001) [http://www.doe.k12.ga.us/\\_documents/curriculum/testing/scores\\_stanford\\_01.pdf](http://www.doe.k12.ga.us/_documents/curriculum/testing/scores_stanford_01.pdf) (accessed 18 Jan. 2005).

<sup>95</sup> "Pre-K Report: Local Flexibility Works," Andrew Young School of Policy Studies news release (19 May 2003) <http://aysps.gsu.edu/news/release/prekreport.htm> (accessed 18 Jan. 2005).

<sup>96</sup> Ibid.

<sup>97</sup> Gary Henry, cited in Ibid.

<sup>98</sup> Duane D. Stanford, "Pre-k's true story," *Atlanta Journal-Constitution* (23 Feb. 2000).

<sup>99</sup> "School Readiness Integration (SRI) Models: A Descriptive and Cost Analysis Study," Edvance Research, Inc., submitted to the Texas Education Agency (26 Oct. 2007) 91.

<sup>100</sup> Author's calculations based on data procured from the Texas Education Agency, Texas Workforce Commission, and the National Child Care Coalition.

<sup>101</sup> "More Money to Rescue Playgroups," <http://www.news.bbc.co.uk/1/hi/education/695135.stm> (accessed 16 Apr. 2005).

<sup>102</sup> Ibid. See also "Playgroup Places Continue to Fall," *BBC News* (1 Oct. 1999); and "Call for Shake-up in Preschool Admissions," *BBC News* (15 Oct. 1999).

<sup>103</sup> For instance, see Coulson, *Market Education*; and Milton Friedman, "Public Schools: Make Them Private," Cato Institute Briefing Paper no. 23 (23 June 1995) <http://www.cato.org/pubs/briefs/bp-023.html> (accessed 18 Jan. 2005).

<sup>104</sup> The diversity of programs and multiplicity of funding streams makes it difficult to quantify total expenditures. We believe the best available estimates are documented in Kelley, Tobin, and Ortiz, "The Condition of Early Childhood Education and Care in Arizona: 2004": 2.12. Kelly, Tobin, and Ortiz report \$12 million for Early Head Start; \$87 million for Head Start (excluding tribal and migrant worker programs); \$19.5 million for the Early Childhood Block Grant; \$9.95 million from block grant funds for preschool; \$148.7 million in childcare subsidies; \$134.2 million on kindergarten (excluding multiple funding streams utilized by school districts); and \$171,335 for kith-and-kin programs—for a total of \$411.5 million.

<sup>105</sup> Calculations provided by David Fincher, National Child Care Coalition.

<sup>106</sup> Calculations provided by David Fincher, National Child Care Coalition.

<sup>107</sup> Taylor et al, 28.

<sup>108</sup> Taylor et al, 28.

<sup>109</sup> Taylor et al, 131.

<sup>110</sup> S. V. Date, "Lawmakers urge vouchers for pre-k: They say vouchers are key to universal early education," *Palm Beach Post*, March 22, 2004.

<sup>111</sup> Brent Kallestad, "Governor Bush signs pre-k bill," *Associated Press* (3 Jan. 2005).

<sup>112</sup> Alex Penelas, cited in S. V. Date, "Lawmakers urge vouchers for pre-K."

<sup>113</sup> Linda Carlton, cited in Mary Ellen Klas, "Pre-K Vouchers Program Provokes Dispute," *Miami Herald* (5 Apr. 2004) <http://www.floridians.org/newsf/04/040504.html> (accessed 18 Jan. 2005).

<sup>114</sup> Phillip Vassallo, "More than Grades: How Choice Boosts Parental Involvement and Benefits Children," Cato Institute, Cato Policy Analysis No. 383, (26 Oct. 2000).

<sup>115</sup> Henderson, Basile, and Henry, "Prekindergarten Longitudinal Study 1997–1998 School Year Annual Report," 39.

<sup>116</sup> McKey et al., 8, III–11.

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