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BUILDING A 21ST CENTURY ECONOMY: THE CASE FOR INVESTING IN EARLY EDUCATION REFORM

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INTRODUCTION

Never before has the connection between our economic growth and our education system been so critical. In the antiquated industrial economy of the past, a country that could efficiently manufacture and produce material goods succeeded. In today's new knowledge-based economy, a nation's success is contingent on its citizens' human capital. As the Council on Competitiveness predicts, "where once we optimized our organizations for efficiency and quality, now we must optimize our entire society for innovation."[1]

The drive for innovation demands that we look at improving our education system from the ground up. However, to date, we have heard little in the education debate about children's early years. This is radically different than our competitors, who begin investing much earlier in their citizens' education, knowing that these investments have long-term benefits for children and families. For America to succeed, we must do the same.

We make the case for a fundamental change in U.S. early education policies, looking specifically at prekindergarten through third grade—what we call the PK-3 agenda. The reforms we outline below are critical to developing the foundation for learning that children need to succeed in a global economy. PK-3 efforts will also help to ensure that children who start from behind are able to catch up and become full participants in America's future growth and prosperity.

EDUCATION EQUALS ECONOMIC GROWTH

Though we are well aware that education is the key to meeting the economic challenges posed by our global competitors, it seems that across America—from the boardrooms to the classrooms—we are struggling to keep up. China is producing 350,000 engineering graduates each year.[2] In 2001, India graduated almost a million more students from college than the United States did.[3] By fourth grade, American students have fallen behind countries like Singapore, Japan, Latvia and the Russian Federation in math.[4] The latest reading scores for America's fourth grade children show little improvement, and the U.S. ranked behind 15 other countries in reading literacy for 15-year-olds.[5,6] In Japan and Korea, at least seven in ten students show proficiency in complex problem-solving skills while in the U.S. less than half the students performed at this level.[7] As Bill Gates has emphasized, "in the international competition to have the biggest and best supply of knowledge workers, America is falling behind."

Chart 1:
International Comparison of Academic Performance and Education Spending

Country	Percentage of GDP Spent on Education	Ranking for Reading Literacy	Ranking for Math Literacy
France	5.7	15	11
United States	**5.3**	**16**	**19**
United Kingdom	5.0	8	9
Germany	4.4	22	20
Korea	4.2	7	3
Japan	3.5	9	2
China	3.3	5	1

All rankings are based on the average test scores of 15-year-olds for 29 nations. Adapted from data from OECD, Highlights from the 2000 PISA, and the 2004 China Statistical Yearbook.

These new powerhouse countries have embarked on a path of economic development, recognizing that their success is driven by their citizens' ability to engage in the new realities of a truly global economy. As Thomas Friedman points out, a number of economic forces, political events and technological advancements has empowered individuals and leveled the playing field,

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enabling workers from around the world to collaborate and compete.[8]

As a result, economic success is largely driven by a country's ability to innovate—the new currency in this 21st century economy—and educate its citizens to fill the jobs that these new ideas generate. Kent Hughes, the former president of the Council on Competitiveness, noted that "in no small measure, education is the future of the American Dream and America itself."

BUILDING EXCELLENCE FROM THE GROUND UP

In this new global economy, our education system must develop students who have the creative capacity to dream and design as well as build. They must be able to interact with people who have different values and beliefs. While they will need the ability to question and think critically, they must also be able to communicate effectively and work in cooperation with co-workers across the globe. For America to prosper, we need citizens and leaders with the tools and skills to engage in a complex and changing global economy.

Many of these skills are fundamental and develop surprisingly early in a child's life. Yet, our current education system concentrates most of its attention on students' later academic years. As test scores confirm, this strategy is not helping students keep pace with their international peers. Other countries build their primary education systems upon an integrated and coordinated system of early care and education, often beginning at age three.

For young children in America, however, there is no universal coordinated system of early care and education. Prekindergarten, and even kindergarten education programs are not universally available in the U.S. While 38 states have dedicated at least some resources to prekindergarten education, most programs target low income children, and are often only available for three or four hours a day, and often for only part of the year.[9] Currently, only two states run prekindergarten programs that are available to all children: Georgia and Oklahoma.

The federal Head Start program provides prekindergarten services to over 900,000 children across the country. Yet, only children living at or below the poverty level are eligible for services. Even among that targeted population, the program serves less than half of all eligible children.[10]

Despite the growth in Head Start and other prekindergarten programs, low- and middle-income families are less likely to attend prekindergarten than their counterparts in higher income families.[11] Most children aged three to five are cared for in a private market-based system of early care for children. Often this care is not focused on education, and the quality of these early education experiences largely depends on what parents can afford to pay.

Similarly, our primary education system also lacks a focused and coordinated system for this fundamental period in a child's development. Only nine states require school districts to offer full-day kindergarten.[12] And states vary considerably in providing a set of defined standards for children's education.[13] In addition, few school systems provide before- and after-school programs to help expand children's learning time and meet the need of today's working parents. But perhaps most importantly, K-12 systems often do not connect with prekindergarten programs to create a comprehensive and coordinated start to children's learning.

A first step then in our efforts to strengthen our education system is to develop a national system for children's earliest education experiences that aligns standards, expectations, and programs. To date, the U.S. has not chosen to invest in building a strong start for young children. As we lay out below, investing in the foundations of learning is one of the keys to our long-term economic security.

OUR ECONOMIC COMPETITORS LEAD THE WAY IN EARLY CHILDHOOD EDUCATION

Other countries have embarked on globalization plans that build on a strong early learning system and focus on innovation and creativity. European countries have a long history of providing early education programs, with enrollment for children ages three to five well over 80 percent and per-child expenditures that are often twice that of the U.S.[14] Other nations have framed early learning beginning at age three, not as a social expenditure, but as an economic investment in their future.

Great Britain. In Britain, for example, Chancellor of the Exchequer Gordon Brown recently argued that their country's "…economic goal now and for the future must be to become the world's number one power in education … [by providing education]… from the age of 3 to the age of 18."[15] To that end, Britain has integrated national learning standards for children ages three to five into its education policy.[16]

New legislation proposed in November, 2005 will go even further. This effort, linked to goals within education, will work to expand to an "Early Years Foundation" framework for all children from birth to age five.[17] Part of Britain's efforts includes creating "educare" programs that integrate care and education for all three and four-year olds by 2010.[18]

China. China also understands the importance of education as a driver for economic success. Officials are revamping their education system, moving away from exam-based grades and memorization towards a curriculum focused on problem solving, creativity, communication and cooperation. The goal of this reform is to "bring forth a new generation of high-caliber citizens, people who are competent enough to serve China's modernization drive."[19]

In addition to reforming their primary system, China is also revisiting its pre-primary education system. The Chinese have a saying, "Your fortune at 80 was decided when you were three."[20] Its policies for early education support this belief. Today, more than 20 million children between the ages of three and six attend early education programs. As part of its education reform agenda, China aims to have three years of pre-primary school (for ages three to six) universally available in all urban areas and to increase enrollment in at least one year of prekindergarten education in rural areas to 80 percent by 2015.[21]

Other nations. Other economically emerging nations are working to address early learning as well. Along with reforms to ensure that all children are in school by 2005, India has set a goal of providing universal access to early childhood care and education for all three- to six-year-olds by 2010. Indonesia and Bangladesh both aim to increase participation in early childhood services to 80 percent by 2015.[22] To be sure, many of these nations will struggle to build an infrastructure of early care that will achieve these ambitious goals. But, it is clear that our economic competitors have made early childhood education a priority.

SKILL BEGETS…SKILL

Why such a strong focus on early education? Research from a wide variety of experts—from developmental psychologists to Nobel-prize winning economists—converges on the period between birth and age eight as a critical developmental opportunity.

For prekindergarten children, recent studies confirm that it is during these years the foundations for language development, cognitive knowledge and social competence are built.[23] These early experiences are critical to children's learning later in life. As Nobel Laureate economist James Heckman pointed out, "Skill begets skill; learning begets learning." In economic terms, just as early disadvantages accumulate, so do early advantages.

AN UNEQUAL START

As early as kindergarten, if not before, children's school readiness skills vary significantly.[24] Throughout the rest of the education system, educators and policymakers work to address this achievement gap—or the gap in educational achievement between minority and low-income students and their non-minority, higher-income peers.

For example, the Early Childhood Longitudinal Study found that black and Hispanic kindergarten children score significantly lower than white children on math and reading assessments.[25] These gaps, especially in early literacy, have been found to predict their reading proficiency and overall school success in later years.[26]

While schools attempt to remedy these early inequalities, evidence suggests that their efforts are not successful. In fact, about half of the achievement gap between black high school students and white high school students in both math and reading could be explained by skill differences these children had at the start of their school careers.[27]

Furthermore, it is often expensive and difficult for all schools to help children make up for early skill deficiencies. Interventions more likely to be tapped by children starting from behind, such as special education, grade retention, and remedial education in later years, can demand large public investments.[28] For example, grade retention in North Carolina cost the state $170 million for just over 22,000 children in kindergarten through third grade.[29] Many schools and classrooms lack the resources—both human and financial—to accommodate these interventions, much less redress the inequalities.

The repercussions of failing to address these early inequalities are even more profound later in life. Dropout rates, teen parenthood, criminal activity, unemployment, and depression have all been linked to a lack of skills in prekindergarten.[30] Some states even incorporate third grade reading scores into their formula for predicting the needs of future prison construction.[31]

PK-3: BUILDING A STRONG FOUNDATION AND HELPING TO CLOSE THE ACHIEVEMENT GAP

As President Bush said, "We must make sure that every child enter[s] school ready to learn—every child—not just one, not just a few, but every, single child. … Anyone who is serious about educational reform must be serious about early childhood education."[32]

A National Academy of Sciences report found that children—in particular, children at risk of school failure—attending high-quality early childhood programs are best prepared to meet future educational demands.[33] So we must begin to address the unequal start by providing universal access to high quality, full-day prekindergarten programs.

However, this is not where we end but only the beginning. Research shows that even when young children are exposed to high quality prekindergarten programs, benefits for children are not always sustained throughout elementary school.[34] Barbara Bowman, a leading child development expert, noted: "Preschool is not a vaccination."[35] The key to positive outcomes throughout a child's life is a coordinated system of early education experiences that begin in prekindergarten and continue at least through third grade.[36]

In a recent analysis, for example, children who did not receive a strong education from prekindergarten *through* third grade were three times more likely to be held back and more likely to be placed in special education than those who had a strong PK-3 foundation.[37] While these findings held true for all children, disadvantaged children showed the greatest gains from PK-3 programs. To

maximize children's educational experiences and get the most out of our prekindergarten investments, quality prekindergarten programs should be aligned and coordinated with quality kindergarten to third grade programs.

THE PK-3 VISION

What do quality PK-3 education experiences look like? First, beginning at age three, children would have access to full-day programs that addressed the health, cognitive and social development, and motivation young children need in order to succeed in school. Children would be taught by qualified teachers with a specialty in early education. Educators would foster children's love of learning and would also work to develop the foundation of understanding numbers, letters, and words.

What is PK-3?

- Voluntary, full-day prekindergarten is provided for all 3- and 4-year-old children.
- Full-day kindergarten that builds on PK experiences is available to all children.
- Standards, curriculum, instruction, and assessment are aligned within and across grades from PK through third grade.
- Curriculum focuses on social skills and self-discipline as well as reading and math.
- All teachers meet the qualifications for teaching at any grade level from PK through third grade and are compensated based on public elementary school teacher salaries.
- Families and teachers work together to insure the success of all children.

Source: Foundation for Child Development. (2005) *PK-3: A New Beginning for Publicly Supported Education.*

After prekindergarten, children should transition smoothly into a full-day kindergarten program also staffed by highly qualified teachers with a background in early education. Optimal classes would be small and would be governed by standards to guide what children should be able to know and do, with clear assessments to help teachers gauge progress and tailor lessons to each child.

These early learning experiences would be linked seamlessly to their first years in school. Through third grade, students would have a set of coordinated educational experiences that would enable them to advance to the next level of skill and understanding. Teachers would use developmentally appropriate curricula focusing on reading, math, social skills, problem solving and self-discipline. In addition, teachers would encourage creativity and build children's self-esteem and enthusiasm to learn, all of which are key traits in children who go on to succeed in school.

In addition to academic skills, children would develop their physical, social, and emotional skills as well as the moral character needed to advance their learning and development. Children would continue their learning opportunities in after-school and summer programs. A significant factor in children's academic success is the presence and full partnership of parents in these PK-3 experiences. Through home visits, parent-teacher meetings, parent resource rooms and other family supports and resources, parents would be actively engaged in their children's early education experiences.

By the end of third grade, children who have experienced this coordinated early learning system would be set on a path to future success, both academically and in life. The third grade, as many child developmental specialists point out, is an important turning point in children's learning. Starting in the fourth grade, it is widely acknowledged that children stop learning to read and begin reading to learn.[38] This critical period, between the ages of three and eight, offers the opportunity to build a foundation for learning that remains for life.

In sum, a PK-3 approach provides programs and practices that support children's learning, enhance the organization and coordination of services for all children ages three to eight, promote proven high-quality teaching practices, and integrate families through support services and direct involvement in their children's education.[39]

PK-3—A PROVEN REALITY WITH A POSITIVE RECORD

The good news is that there are already examples of successful PK-3 efforts being implemented in communities across the United States. Thoughtful educators are making the PK-3 model a new American reality. The results speak for themselves.

Chicago-Parent Centers. Begun in 1967, the Chicago-Parent Center and Expansion Program (CPC) is perhaps the longest running program to integrate many components of a PK-3 vision. Targeting primarily low-income children, the program provides half day prekindergarten and kindergarten programs, enriched primary school programs with small class sizes, and a host of additional resources for children and their families. Participation in the CPC through the second grade has proven to give children a "seven month advantage in reading and math achievement, lower rates of grade retention, and lower rates of special education placement."[40] As adults, CPC children were more likely to finish high school, more likely to be employed full-time, and less likely to be on Medicaid or arrested for a violent crime.[41]

Abecedarian Project. The Abecedarian Project (ABC) in North Carolina also served low-income children, providing enriched early educational programs beginning at age four months. In a randomized design, some children also received a school-based program that continued through age eight. Children who received both

the prekindergarten services as well as the enriched school based program produced the greatest gains in school performance.

PK-3 Today. Education leaders in Union City School District, New Jersey have seen remarkable changes as a result of a PK-3 focus. The number of children reading at grade level rose from 45 percent to 87 percent, and proficiency in math skills went from 48 percent to 93 percent.[42] The New School in southeast Seattle has also embraced a PK-3 focus for its children. Armed with a strong curriculum and inspiring teachers as well as reading specialists, second-language teachers, a wellness coordinator and a strong family support center, students are overcoming barriers to school success. In 2005, 80 percent of first grade students and more than 90 percent of those in second grade were proficient in reading.[43]

These results show that a PK-3 approach is more than just an intellectual exercise or an experimental initiative lacking real world relevance. In fact, where PK-3 has taken hold, it is making a significant difference in the lives of children and families. It is delivering on the American dream of an equal start and a chance to succeed in school and life.

A SMART INVESTMENT, FOR ALL CHILDREN

There is mounting evidence that investing in our nation's children is also a wise use of public funds. Indeed, other nations view early education as an investment in human capital, the key to long-term economic success. But this investment also reaps rewards for a nation's balance sheet. For example, low-income children participating in model PK-3 programs earned more, paid more in taxes, and were less likely to need remedial education or commit a crime. The initial investment of every dollar in these children provided a return anywhere from four to seven dollars in decreased expenditures and increased revenues. Economists from the Federal Reserve Bank to the Committee for Economic Development argue that these returns are much higher than other more typical economic growth and development investments.[44]

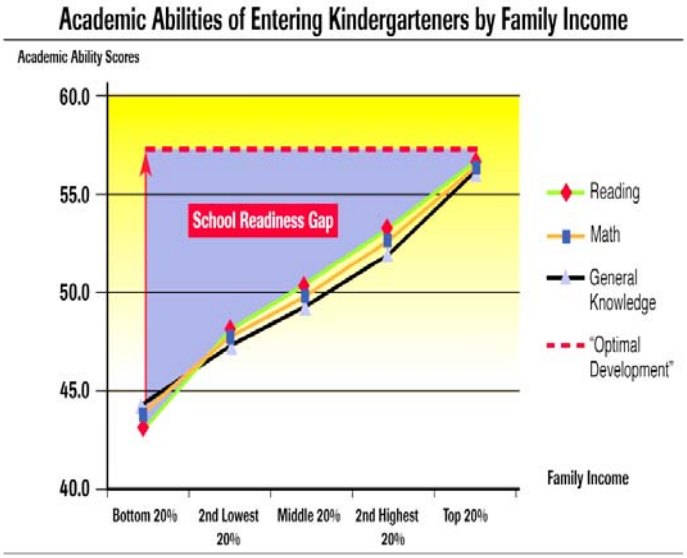
To be sure, much of the returns generated by these programs are gained by alleviating the effects—and later costs—of poverty. So, why should programs also serve children from middle- and high-income families? There is mounting evidence that early education programs can provide benefits, and a societal return on the investment, for children regardless of their families' economic circumstances.

For example, a recent RAND study concluded that universal programs also provide a return on investment. They estimate that enacting universally available prekindergarten programs in California would bring a minimum of $2.60 in savings for each dollar invested.[45] Studies of universal programs confirm that children from middle- and high-income families also gain in skills over peers who do not participate in high-quality programs.[46]

As Deborah Stipek, Dean of Stanford University's School of Education, pointed out, "…gaps in school readiness diminish only gradually as income rises and persist for all children except those from families in the top 20 percent of income levels."[47] As Chart 2 shows, a program targeting only the poorest children would leave millions of middle- and upper-income children behind.

In addition, children in middle-income households can often fall between the cracks—finding that their parents earn too much to qualify for targeted poverty programs, but too little to provide them with the quality early experiences they need. In struggling to catch up, middle income children are also at risk of school failure. Over 13 percent of children from middle-income families repeat a grade, and more than one in ten children from middle class families—over two million in total—have dropped out of school.[48]

Chart 2:



Used with permission from W.S. Barnett, J.T. Hustedt, K.B. Robin, and K.L. Schulman. *The State of Preschool: 2004 State Preschool Yearbook.* New Brunswick, NJ: National Institute for Early Education Research, 2004.

NEXT STEPS TO A PK-3 REALITY

While recent education reform efforts have focused on accountability and expanding choices for parents, these issues alone will not ensure that all children in America are prepared to compete in a global economy. Similarly, a focus on America's high school education system, though needed, fails to address many of the root problems in our education system. Indeed, the solution to our education problems must include a focus on the fundamentals.

America cannot afford to wait any longer. Below are recommendations that policymakers should consider in building strong PK-3 experiences in America's education system. Federal lawmakers, in particular, have an important role in advancing this reform agenda and in aligning federal and state funding to achieve a unified PK-3 vision. As Harvard University researcher Ronald F. Ferguson stated, the No Child Left Behind Act also

heralded a new era in which "for the first time in the nation's history, raising achievement levels among racial and ethnic minorities and closing achievement gaps are explicit goals of federal policy."[49] A PK-3 agenda, with its ability to narrow the achievement gap, should now become a first step in federal education policy efforts.

Over the next 18 months, the New America Foundation will produce several policy papers that will outline in greater detail both innovative policy changes as well as the political factors needed to build a PK-3 early education system in this country.

- **Build a universally accessible, effective full-day prekindergarten system**
  A key to building an early education system is to provide voluntary, high-quality prekindergarten programs for all children. While some states have embarked on this effort, few are universal or provide full-day programs. The federal government should provide incentives to expand programs, to ensure quality and to help link programs into the existing K-3 educational system.

- **Provide access to full-day kindergarten programs that nurture children's learning and connect with the early elementary grades.**
  Access to full-day kindergarten programs is sporadic. Federal policymakers could help spark states' commitments to expand and build on current efforts by promoting innovative practices and providing incentive grants to expand current services. Education and policy leaders must also ensure that kindergarten standards are aligned with both prekindergarten programs and first grade.

- **Design a system of aligned curriculum, standards and instructional practices that inspires all children to learn.**
  To date, only a handful of states have adopted early learning standards and even fewer have those standards linked to K-12 educational ones. The mismatch of standards, programs and expectations for young children only exacerbates a fragmented system of early learning.

  We must begin a national dialogue, informed by science, as well as parents and educators on what children should experience beginning at age three. Based on this discussion, we must then reconfigure our expectations, our classrooms, the transitions by grades, and other educational practices to take advantage of how young children learn.

- **Establish high teacher qualifications and provide adequate compensation to have the best and brightest teaching our youngest students.**
  America's current early education teaching workforce suffers from low pay, few benefits, and poor training. As a nation, we must begin to build a highly qualified, professional workforce that has been given the special tools needed to teach young children. We must make certain that our higher education system is prepared to deliver quality instruction to teachers based on the most up-to-date research in child development. Policymakers should help to ensure that early education teachers are given the pay and benefits afforded to all similarly prepared teachers. Young children need the best and brightest teachers, ones that are well trained and able to stay in the early childhood workforce.

- **Ensure that programs support children's needs and engage parents as children's first and life-long teachers.**
  We must ensure that children and their families receive the supports they need in order to learn. Programs must also recognize the important role of families in children's learning. Policymakers must provide educators with the tools and resources to help parents engage in their children's learning and to integrate early education programs into families' communities and their lives.

- **Address the financing inequalities in the current PK-3 system to ensure that all children have access to the best education in the world.**
  To finance a PK-3 system, policymakers must first ensure that they build a system that is equitable and gives all children access to the best our educational system can offer.

Embarking on these efforts will help guarantee that our children receive a solid foundation for learning and the skills they need to succeed in the 21st century. Economic forces and the belief that all children deserve to take part in the American dream demand that we chart a new beginning in our education system. A PK-3 agenda is more than a critical first step on the road to education reform; it will deliver on the promise of a strong start and bright future for all of our nation's children.

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