

The Case for Early Education in the Emerging Economy

The Next American Economy's Learning Series

Report by
Ajay Chaudry

August 2016



About the Author

Ajay Chaudry served in the Obama administration as the former Deputy Assistant Secretary for Human Services Policy at the U.S. Department of Health and Human Services. As a visiting scholar at New York University he is working on a book that analyzes policy frameworks to provide early childhood services to children and families. He also is building on research from his 2004 book, *Putting Children First*, which explores the work and family challenges faced by low-income mothers and their children.

The United States today lacks an economy that gives everyone a fair shot to succeed, to develop and contribute to their potential, and to participate fully in society. Economic inequality in the U.S. has risen sharply over the last 35 years, reaching possibly the highest levels in the country's history and the highest among nations with well-developed economies (Piketty and Saez 2014).¹ This rise in inequality has coincided with very limited levels of social mobility (Aaronson and Mazumder 2008 & Chetty et al. 2014). During this time the United States has seen stalled growth rates in educational attainment levels, labor productivity, and economic growth; having once been well ahead of other nations on these measures, the U.S. has now fallen behind other advanced economies (Goldin and Katz. 2008). So the economic pie itself has been growing much more slowly at the same time as the division of the pie has become more inequitable and the possibility of changing one's portion more unlikely.

This policy brief makes the case for why early investments in the development of human potential and skills development hold extraordinary potential for the United States' economic progress in the coming decades. There is strong evidence that high-quality early care and education can help to meet the nation's labor market needs and reverse growing educational and economic inequality. As such, I argue that universal public education should begin at age three.

The Labor Market Challenges the U.S. Faces in the 21st Century Economy

A sobering assessment of recent changes in the nation's economic realities portends significant uncertainties for the future. The rates for both labor productivity and overall economic growth slowed over most of the last four decades compared to the significant expansionary gains experienced between 1947 and 1973 (Gordon 2014). Yet both productivity and the overall economy have still grown, albeit modestly. Wages, however, have remained stagnant or declined for a very large share of American workers and have increased significantly only for the sliver of better-educated workers and those in the most technologically skilled occupations (Bivens et al. 2014).

This stagnation has led to ever-widening wage inequality and earning differentials by education, which rewards a small number of "winners" and punishes a larger set of "losers (Goldin and Katz 2008 & Ellwood 2000)." The most positive countervailing force to these labor market dynamics was the sharp increase in women's labor force

¹ Piketty and Saez indicate that income inequality by 2010 in the United States had reached its highest levels in history, and wealth inequality was at its highest levels since 1930.



participation between 1970 and 2000, without which the economic slowdown in the period would have been much worse. However, even this boon has since plateaued and even retreated some.ⁱⁱ

The current economy is rapidly transforming the future of work in ways that require a highly skilled labor force that can adapt, integrate, and innovate in a context of rapid technological advancements. Yet the United States is not as well-positioned to succeed in this economically transformative era as it was at this same point in the last century. Then, in the midst of the transition to an economy built on large-scale mass production, the U.S. led the race to build the world's strongest economy with its human capital advantages (Goldin and Katz 2008). Now, nearly one-sixth of the way into the 21st century, many of our long-term labor market challenges do not appear to be improving. Where the United States once led and had the most educated workforce and among the highest rates of female labor force participation globally, it now trails many other countries with developed economies.

However, in many respects the past can be the prologue to the future. The U.S. economy outperformed all others in the 20th century by developing the most extensive and open system of public education very early on to achieve greater aggregate levels of education. This sizeable comparative advantage positioned the United States to harness the capacities of emergent technologies, improve labor productivity, and fuel economic growth for several decades. Investments in education and human capital development are once more necessary to win the future, and the wisest investment is to support stronger starts at the beginning of the educational pipeline that will lead to better outcomes downstream.

The 21st Century Economy Requires a Human Capital Revolution Starting with Our Very Youngest Learners

Though the United States has fallen far behind other nations in supporting its youngest learners, as noted, it was a leader in universal elementary and secondary education in the 19th and 20th centuries. Claudia Goldin and Larry Katz (2008) have done a comprehensive analysis of how the United States modeled and invented what we know of as “public education.” They show how the remarkably early and rapid expansions in primary and secondary schooling enabled the U.S. to take advantage of technological advances in industry to fuel the nation's rapid economic growth across the first three quarters of the 20th century. By 1900, free public elementary education was instituted widely across the U.S., well ahead of other nations, and by 1910 the high school movement was taking hold. Secondary school enrollment levels increased from 19 percent of 15-to-18-year-olds in 1910 (a majority of whom were in private schools) to an astonishing 73 percent of 15-to-18-year-olds by 1940 (90 percent of them in public high schools). This was more than twice the enrollment levels of any other nation and set the stage for the U.S. to move ahead to the next leg of the educational race—namely, higher education—and expand its lead in the 1950s and '60s (Goldin and Katz 2008).

In most of the rest of the world before 1950, including relatively high-income nations like the United Kingdom, Germany, and France, only those whose families could afford to pay received anything more than the most elementary schooling, and education remained a private affair. In the U.S., by contrast, there was a widely shared view that capitalizing on rapidly evolving technologies, which was essential to generate continuing efficiencies in productivity, support entrepreneurship, and improve the standard of living broadly, would require educated and highly skilled workers. Once the U.S. demonstrated the value of universal education in supporting modern-day

ⁱⁱ Bureau of Labor Statistics indicated women's labor force participation increased steadily over the last quarter of the twentieth century from 46 percent of those 16 and over in the labor force in 1975 to 60 percent in 2000 before declining to 57 percent in 2015.



economies, countries all over the world raced to increase educational access throughout the second half of the 20th century, and many European and Asian nations now exceed the United States in educational attainment among their youngest cohorts.

In addition to progress on elementary, secondary, and even post-secondary education, most countries with advanced economies also raced far ahead of the U.S. in establishing universal early education. The United States now lags far behind what other countries with well-developed economies invest in early childhood, and also invests far less in children from birth to age five than it does in older children (OECD 2014). In fact, the United States ranks 34th out of 40 among OECD countries in enrollment of three- and four-year-olds in early childhood education: In more than a dozen OECD countries over 90 percent of three- and four-year-olds have been in preschool programs for at least 15 years, while in the United States, most recent data indicates that only 55 percent of three- and four-year-olds were enrolled in preschool in 2014.

While we still invest a lot overall in education, arguably more than any other country, we invest far more in K–12 and higher education than in the years before kindergarten entry. For example, total expenditures for public elementary and secondary schools (kindergarten through 12th grade) in the United States amounted to more than \$620 billion or approximately 3.7 percent of our gross domestic product in the 2011–12 school year (National Center for Education Statistics 2015). This amounts to \$12,500 per year, per child, ranking us near the very top in terms of expenditures per child on elementary and secondary education (OECD 2014 & National Center for Education Statistics 2015). Yet for preschool education of three- and four-year-olds, total public expenditures of 0.2 percent of GDP represent among the lowest shares of national income and lowest investments in preschool-age children among developed economies.

Where the United States has historically led in advancing education, we have invested the least in a critical period of development. There is abundant research evidence indicating that the early years may matter the most and be the most effective time for investment because they comprise the most rapid period of brain development, during which social, emotional, and cognitive skills are developed. These are also the building blocks on which later learning and human capital formation depends. As economist James Heckman (2007) has put it, “skills beget skills,” and deficiencies or lost opportunities to invest in early childhood limit skill development and the outcome of later investments in education. The lack of investment in preschool education given what we know about its importance, and what we know about how to develop high-quality early education, is particularly unwise given that the knowledge-based economy, competitive global markets, and the dexterity essential to apply and advance new technologies all require increasing educational attainment.

Investments in preschool education are not only essential for supporting the labor market and economic needs of the modern-day economy, but can also serve as a primary means to address the growing economic inequality of recent decades. The large and widening gaps by family income in children’s educational achievement as measured across the educational careers of children has been well-documented (Reardon 2011). What has been less understood is that the skill gaps that are measured across children’s school years are mostly present by the time children enter kindergarten at age five (Duncan and Magnuson 2011). The second thing that has not been as widely appreciated is that the growing disparities in young children’s cognitive and social-emotional skills by family income occur over a very wide gradient of socioeconomic status, such that there are widening disparities in skill formation for children from both low- and middle-income families before kindergarten relative to families with higher socioeconomic status (Magnuson, Waldfogel and Washbrook 2012). These disparities in children’s reading and math scores in kindergarten and the early primary grades strongly predict later outcomes such as



educational attainment and earning levels (Duncan et al. 2007).

A Policy Vision for Investments in Universal Early Education to Support the New Economy

In a forthcoming book, Chaudry, Morrissey, Weiland, and Yoshikawa offer a comprehensive vision for how several coordinated investments for children age five and under can be integrated to form a common framework that meets the needs of U.S. children, and can address economic inequality. Among the coordinated investments that we believe can better support the U.S. economy are paid parental leave, expanded access to high-quality childcare for working families, a reinvigorated role for Head Start targeted at the most disadvantaged communities, and universal early education beginning at age three (Chaudry et al. 2016).

For this policy brief, I focus on one investment in particular: beginning children's public education at age three. I examine the role this investment can play in shaping a learning pipeline for future generations that meets the needs of the U.S. in the 21st century economy.

High-quality early care and education has become an essential but unequally available need for children's development. As it stands, disparities in access and quality of early learning opportunities based on family income perpetuate and harden longer-term economic inequalities. In part this is because parents who can afford to enroll their children in center-based early learning programs have been doing so at increasing rates and at earlier ages for more than 25 years.

Despite increases over the last 20 years in state-funded public preschool programs, there remain very large disparities in the enrollment of three- and four-year-olds. Seventy-six percent of children whose families were in the top income-quintile were enrolled, compared to only 49 percent of those in the bottom quintile and 54 percent of those in the middle quintile. In addition, while 75 percent of those enrolled from higher-income families use private early care and education programs, 80 percent of those from lower-income families and 60 percent from middle-income families were in public early care and education programs.

Publicly funded preschool programs, to the degree they exist, do increase access and narrow the income-based gaps in access. But a very large gap persists for children in both low- and middle-income homes, and many of what public programs do exist are lower quality. Contributing to the low quality of many preschool programs is the fact that the majority of states spend a fraction of what is spent on K-12 education for preschool-age education, though one would expect that the cost of early education would generally be higher given lower adult-to-child ratios.

Simply put, the cost of a good early education is out of reach for a substantial share of American families, and what we publicly invest in early education insufficient to offer most children the early learning opportunities they need to succeed. Early childhood is when growing income inequality becomes the source of widening early learning disparities that perpetuate inequality in schooling and later labor market outcomes.

It need not be this way. Given the critical importance of the early years to lifelong learning and development, it is essential to the United States' economic hopes in the 21st century that we make the most of every child's potential



and provide children from the earliest common starting point the same opportunities to get on a secure educational pathway. As it stands, we exclude broad swaths of the young from opportunities that would not only help them but help all of us.

Given what we know and sufficient political will, we can prepare all our children to succeed by establishing a widely shared and consistent starting point and similar levels of exposure to high-quality early learning environments. This requires both making access to early learning opportunities universal and raising the quality of preschool, particularly for children from low-income families, who stand to gain the most from higher-quality programs.

What is the quality of current preschool programs?

Currently, most preschool education in the United States is of moderate quality across most criteria measured, with instructional quality generally found to be very low (National Center for Early Development & Learning 1997; Weiland et al. 2013; Chaudry et al. 2016 & Mashburn et al. 2008). Children from low- and middle-income families experience lower-quality care across multiple dimensions, including the qualifications and training of teachers and lesser levels of teacher–child interactions that support learning (Chaudry et al. 2016.)

While there is much room for improvement in the quality of preschool and a need to decrease the disparities in quality that children experience, overall outcomes for children of participation in preschool programs are found to be positive across a wide range of studies that have been conducted over the last 40 years (Yoshikawa et al. 2013). A meta-analysis study that analyzes the results of published findings from 84 well-designed evaluations of preschool programs found that one year of preschool on average improved children’s cognitive skills by between 0.2 to 0.3 standard deviations (Duncan and Magnuson 2013). This is considered a small but significant effect, and represents about one-fourth of the income-based educational skills gap found at kindergarten entry. In addition, participation in preschool across these evaluations reduced the need for special education placements by approximately 12 percentage points and lowered grade retention by 10 percentage points (McCoy et al. 2015). While these are good outcomes, they are not sufficient to close the school readiness gap enough to give all children a fair shot to succeed academically, or to support the human capital outcomes the U.S. labor market needs.

High-quality preschool programs provide more positive and lasting benefits, especially for children from economically disadvantaged families.

Recent evidence from two preschool programs implemented at a significant scale provide robust evidence for what are significantly greater and potentially more lasting effects. These two higher-quality programs are located in Boston, Massachusetts, and Tulsa, Oklahoma. The Boston and Tulsa preschool studies have shown that high-quality preschool leads to substantial gains for a range of school readiness outcomes for children in families of all incomes, with the greatest benefits accruing to children from more disadvantaged economic backgrounds (Weiland and Yoshikawa 2013 & Gormley et al. 2005). This is consistent with other research showing higher-quality preschool programs provide higher initial benefits, prove more lasting, and lead to better long-term outcomes into adulthood (Heckman et al. 2010 & McCoy et al. 2015).

In a forthcoming article, Christina Weiland discusses what she calls “Preschool 2.0” programs such as Boston’s and Tulsa’s, which are higher-quality public programs developed at a larger scale (Weiland forthcoming). Tulsa’s pre-kindergarten program, which employed teachers with a B.A. and specialization in early childhood and paid



them on par with elementary school teachers, showed significantly greater than average gains in measured cognitive skills for children in the one-year program, and the math gains were found to persist until third grade (Gormley 2005 & Hill et al. 2015). The Boston pre-kindergarten program found significantly large positive effects on reading, math, and social-emotional skills, with greater benefits found for children from low-income families (Weiland and Yoshikawa 2013 & Weiland 2015). The extra learning children experienced from these recently evaluated programs suggests gains of 38–77 percent of the measured educational gaps in reading and math between children from families in the top versus the bottom income quintiles (Weiland and Yoshikawa 2013 & Gormley et al. 2005.). This is roughly twice to three times the measured gains in the average preschool program evaluated over forty years in the meta-analysis (Duncan and Magnuson 2013).

What Universal High-Quality Preschool Programs Require

High-quality preschool programs strongly support the learning needs of young children and what we know about how children learn, i.e., through intentional, play-based learning opportunities with a significant amount of teacher–child interactions that build on individual children’s interests. A significant amount of recent research indicates that among the key elements for high-quality preschool systems are a well-trained and stable workforce, use of evidence-based curricula, and regular, ongoing coaching using expert mentors (Chaudry et al. 2016 & Weiland forthcoming.). Research indicates that the combination of evidence-based, outcome-focused curricula directly supported by coaching can have very positive effects on children’s school readiness and achieve positive outcomes at scale (Yoshikawa et al. 2013). Attracting and retaining the most essential element of high-quality care, well-qualified early childhood professionals, will require eliminating disparities in status and compensation between preschool and K–12 teachers.

Consistent with the role of state and local government in having primary responsibility for public education, we envision that cities and states would take the primary responsibility for funding, developing, and implementing universal early education, as many already have. However, in order to ensure this occurs more consistently across the country, and in order to accelerate states’ development of universal and high-quality early education and their integration of those programs with K–12 education, we believe there is a significant role for the federal government to play. The federal government could offer a schedule of matching funds to incentivize and support increasing access and availability, targeting children from lower-income families with initial resources. It could also provide resources to states to support strong quality standards and fund research and development to improve and disseminate the evidence base on effective models. Considering the tradition of decentralized governance for education, support should be offered in a way that is flexible enough to meet local needs, with some localities or states choosing to rely on nonprofit providers or establish public–private partnerships to build and improve the supply of preschool.

In order to design universal early education programs to comport with both the learning needs and capacities of young children and the economic needs of parents who are in the labor force, universal early education should offer a full school day and a longer school year than the contemporary schedule for K–12 education, along with wraparound childcare options to meet family needs. A national framework would support the integration of universal preschool with K–12 education, so that curriculum models would be sequential and children would have more comparable exposure to early learning and a shared start in their education.



We expect that a national movement for universal early education starting at age three would require a national framework, albeit one that remains consistent with local control and leadership, in order to avoid exacerbating existing disparities. In order to build an economy that works for working families and provide the learning opportunities needed to prepare the labor force, we would anticipate a plan with ramp-up to get to universality, along with investments in childcare and other supports. We suggest the federal government provide matching funds over 10 years to support increased operating costs for preschool expansions. Further, we suggest that the matching funds can be structured so that the federal government provides a consistent match rate of 50 percent (or just less than that) for at least the first four years to encourage more rapid expansion. In order to incentivize expansion in a way that is sustainable in the long term and does not leave state budgets (and young children) vulnerable when initial matching funds diminish, the federal government would provide a robust match but would not assume a majority of the new costs. We suggest that the initial match rate should gradually phase down to a residual ongoing match rate after 10 years; this ongoing rate would be at least 20 percent of the cost, which is a greater share than the federal government currently supports for public elementary and secondary education.

Graduated expansion would provide states the flexibility to build higher-quality preschool systems in accordance with their demographic needs and existing educational resources, make new workforce investments, and implement evidence-based program models. With phased growth, we suggest that federal funding support should prioritize children from low-income families and low-income communities in the earliest years of expansion.

The federal government could defray research, evaluation, and technical assistance costs to support states that wish to adopt and test models of effective services.

Conclusion

Where the U.S. is today is very different from where we were a century earlier in terms of our aggregate human capital development and our lead in educational investments. We must and can change course. Strategic investments in young children could increase educational attainment, labor force participation, labor productivity, and educational and economic equality in ways that are consistent with and build on the advantages of having been at the vanguard of free elementary education and public high schools (Goldin and Katz 2008).

Universal early education comports with American principles and values. As a nation, we believe in a fair and open society where each person has the opportunity to succeed in supporting themselves and contribute to society and the economy. A shared, earlier, and common starting point for education is consistent with American ideals of equal opportunity and with the core purposes of public education. And, for the nation that first took hold of the idea that education was ultimately *a public good* and demonstrated that to the world, it is a wise and timely economic investment in the nation's overall interest to foster economic growth.

Given the scale of the changes in the United States economy and the degree of economic inequality, I would not like to suggest that universal early education can address all or even most of what ails us. It is a most necessary element, but alone would be insufficient. Given the size of early skills gaps that begin even before age three, we believe that universal early education must be a key element of a broader set of investments in essential supports for working parents, which include paid leave and universal access to affordable, high-quality childcare. In addition, the most disadvantaged children in the most disadvantaged communities likely need an even broader set of supports, including well-integrated early health, learning, and family supports.



Neither would I say that these investments in children’s development before age five will alone right the ship for American education, the U.S. labor market, or prospects for future economic growth. Other aspects of American education need to be addressed. Much needs to be done to improve and equalize the quality of K–12 education, to make access to higher education more open and affordable to a wider range of students, and to facilitate a stronger connection between school and work that strengthens labor force attachment for young adults and puts them on solid and stable career ladders.

Nevertheless, transforming U.S. education to provide universal education at age three is the first and most important step to a good economy. And it is overdue.



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