



Human Development is Economic Development

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CENTER FOR THE ECONOMICS
OF HUMAN DEVELOPMENT
THE UNIVERSITY OF CHICAGO

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Thank you. It is an honor to be with you today.

Economists are sometimes known for explaining things in great complexity. For posing problems but not solving them (e.g., Truman's request for a one-handed economist). So let me try to do something different tonight and start with a simple, perhaps overly simple, statement of my argument, which offers solutions instead of a menu.

In 2015, California will spend 61% of its annual budget on education, health and welfare for a total of \$121.1 billion. Like most states, California struggles to meet its budgetary needs year after year.

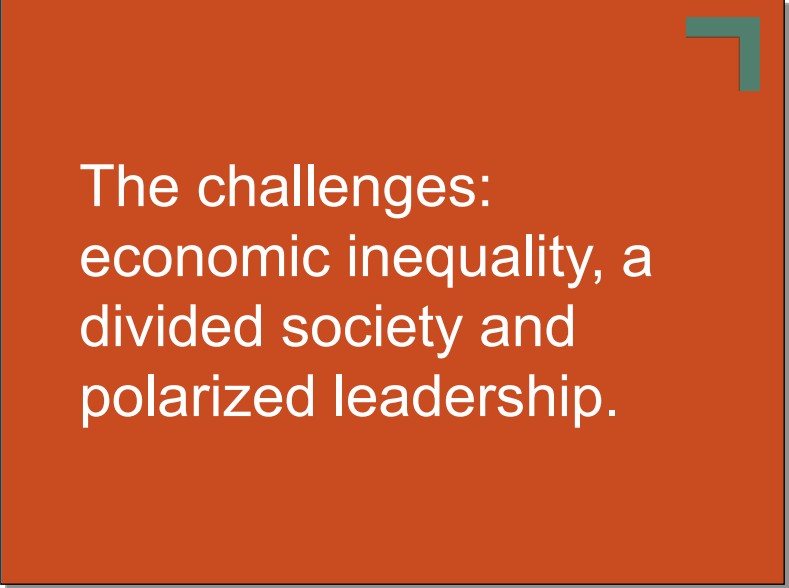
Social costs tend to go up every year. In 2014, California spent \$115.1 billion on education, health and welfare, \$6 billion less than it will spend this year.

Some doubt the value of such investments. But the case is pretty firm for making them. California will not dramatically reduce its social spending anytime soon. And, every state and government is smart to make wise investments in human capital.

But what if we could reduce California's education, health and welfare expenditures by 10% per year? That would save \$6 billion per year.

Today, I would like to show you how that could happen. The solution is not simply cutting social spending by 10% across the board. It is not the costs of government that matter. **It is the costs compared to the benefits, which include substantial reductions of other costs borne by government: crime, special education, health if problems are not prevented early.**

Making wise investments in early childhood development programs for disadvantaged children from birth to age five produces benefits far in excess of costs. Doing so will produce better education, health, social and economic outcomes and reduces the need for expensive social spending on prisons and special education. It is a vision that promotes economic growth and economic opportunity.

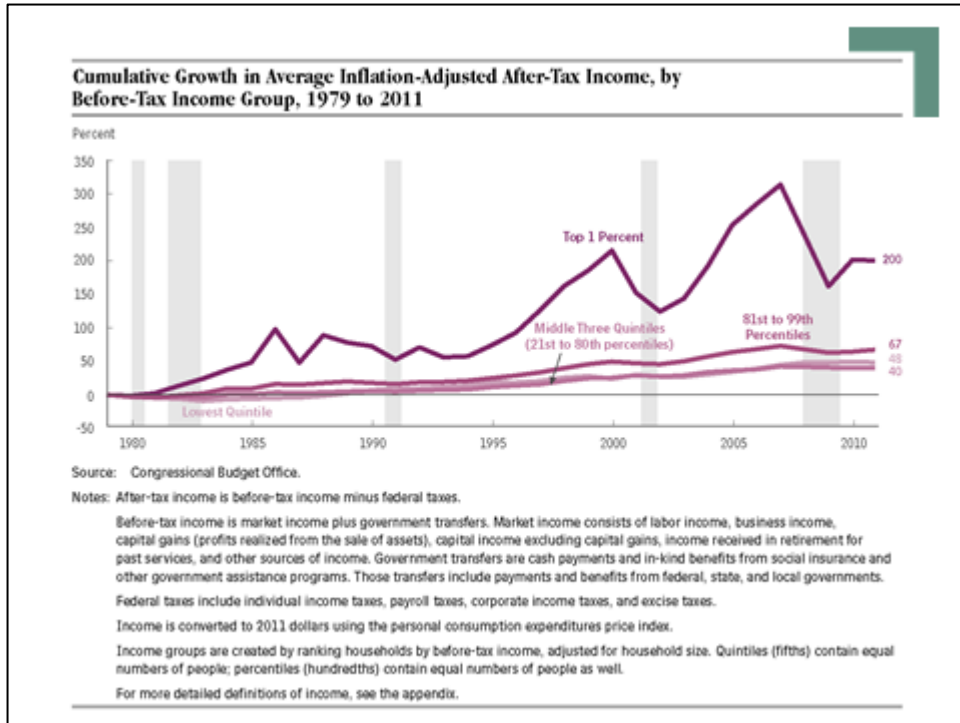


The challenges:
economic inequality, a
divided society and
polarized leadership.

America is coming out of a recession, but many disturbing trends continue and are unlikely to change unless we embrace the facts and think differently about social policy.

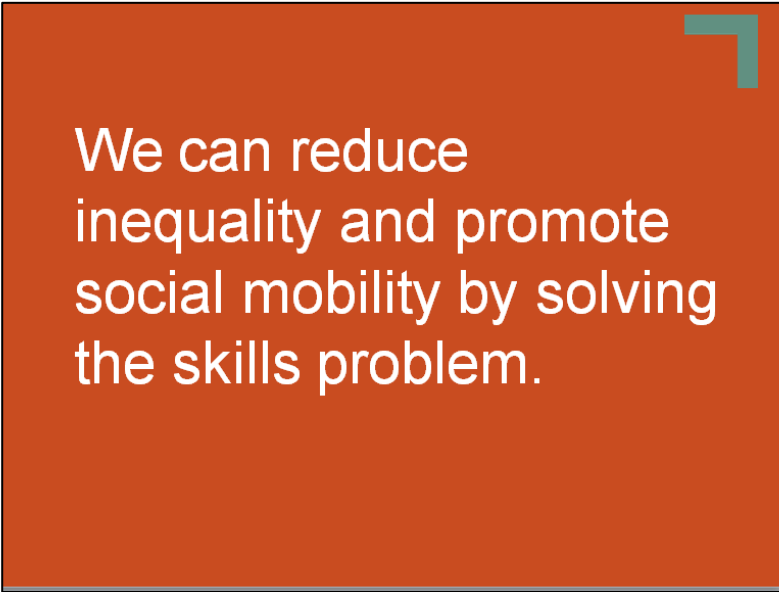
Social and economic inequality is increasing. Ideologues on both sides of the aisle making tired arguments that have proven to be ineffective.

America has a very clear and alarming problem that has nothing to do with ideology and everything to do with development of skills in the population.



- Stagnant growth in wages for most workers except the highly skilled.
- Over long stretches of the past 30 years, a decline in the real wages of the least skilled.
- The disadvantaged are under stress and so is the middle class.
- In addition, there are persistent problems of crime, rising costs of health care, and the like.
- Efforts to reduce inequality, increase productivity and lower deficits have been mired in politics and polarization instead of practicality.

- Considerable evidence suggests that we can promote skills and reduce inequality by strengthening the parenting resources of American families. We need to help disadvantaged families build better skills in their children through effective early childhood development programs.
- Inequality in skills leads to economic inequality. By addressing the skills problem, we can create social equity without any tradeoff in economic efficiency.

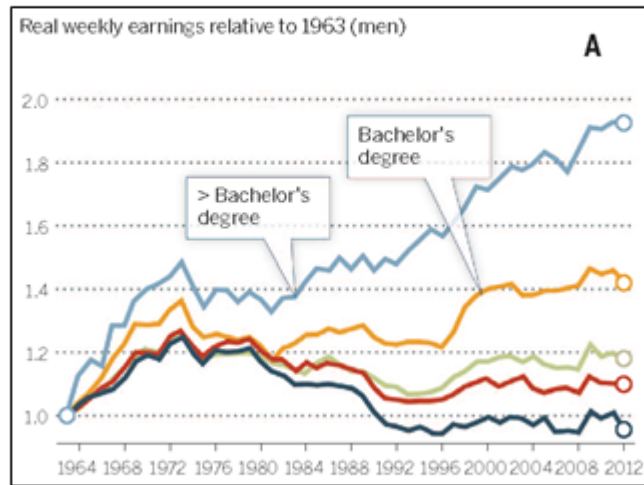


We can reduce inequality and promote social mobility by solving the skills problem.

Rising inequality in skills is a major contributor to rising economic and social inequality.

- It is a truism that the skills of a nation are a major source of productivity for its economy. The livelihoods of most people depend on the compensation they receive for their skills.
- Skills are the major determinants of social advantage and disadvantage.
- The importance of skills has become more pronounced in our age of globalization and skill-biased technical change, which has shifted demand towards the more skilled. The wages of high-skilled labor have increased much faster than those of less skilled labor.
 - Our problems cannot be solved by simply redistributing the wealth, despite the calls of redistributionist politicians.
 - Autor, David H. 2014. "Skills, education, and the rise of earnings inequality among the "other 99 percent." *Science* 344(6186): 843—851.
 - In an extreme calculation, he shows that redistributing the wealth of the top 1% is much less effective than raising the skills of the work force – e.g., getting more high school graduates.

Changes in real wage levels of full-time U.S. workers by sex and education, 1963-2012



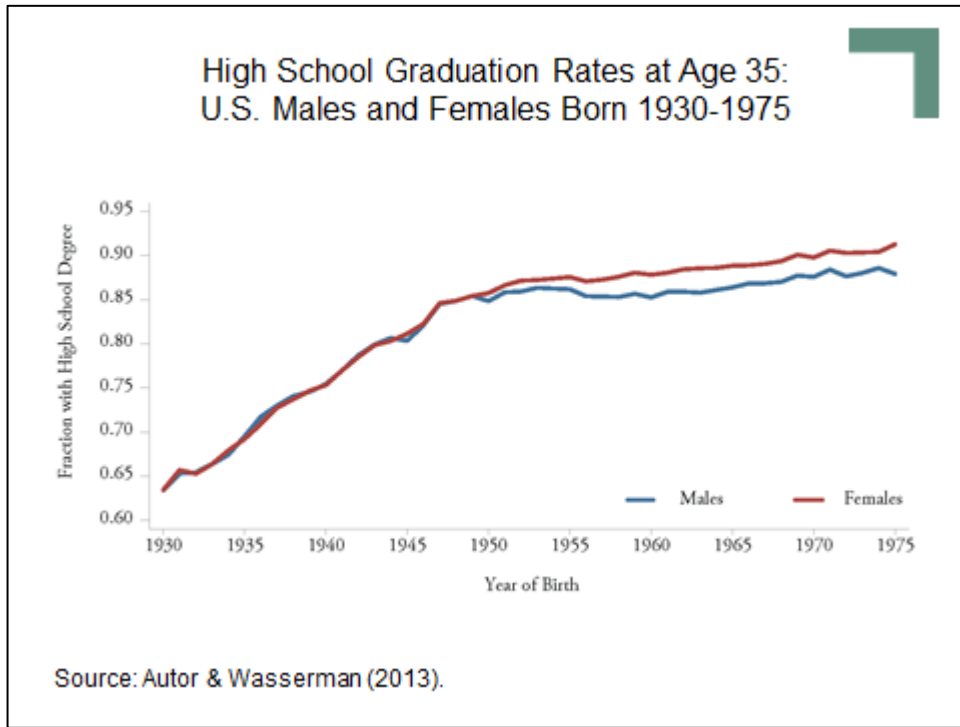
Source: Autor (2014).

- At the same time the demand for skilled workers has accelerated, America's overall rate of growth in producing skilled workers has been sluggish.

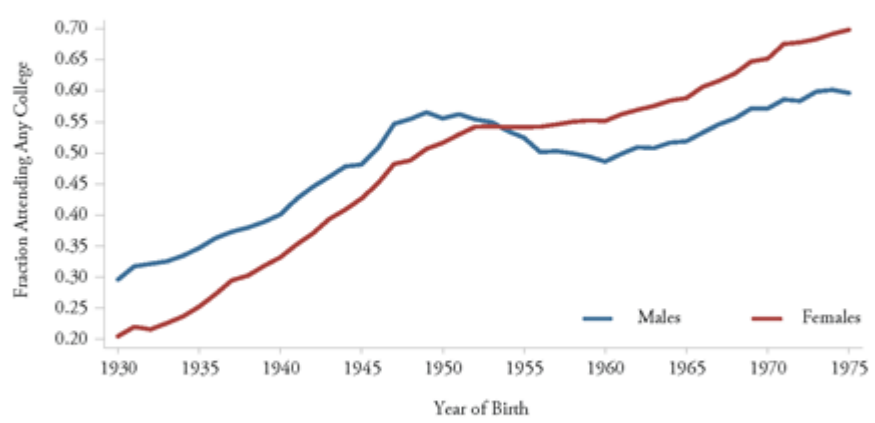
This is puzzling. Why has the market response to rising returns to education been so weak? Why not greater responsiveness?

- This overall slowdown in the rate of growth of skills masks different trends for different groups.

Among men, the college graduation rate has been flat for 40 years; the high school graduation rate, properly counted, has only recently begun to increase for cohorts born after 1950, after a long period of stagnation and even decline.

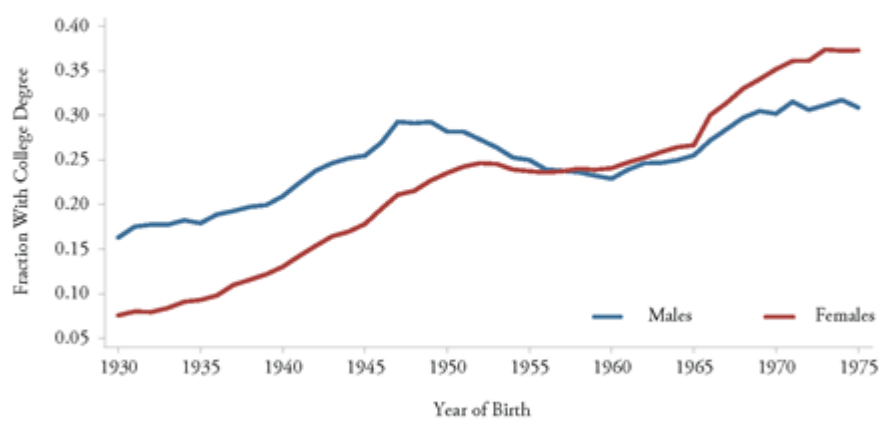


Percent of Adults with Some College Education by Age 35




Source: Autor & Wasserman (2013).

Percent of Adults with Four-Year College Degree by Age 35



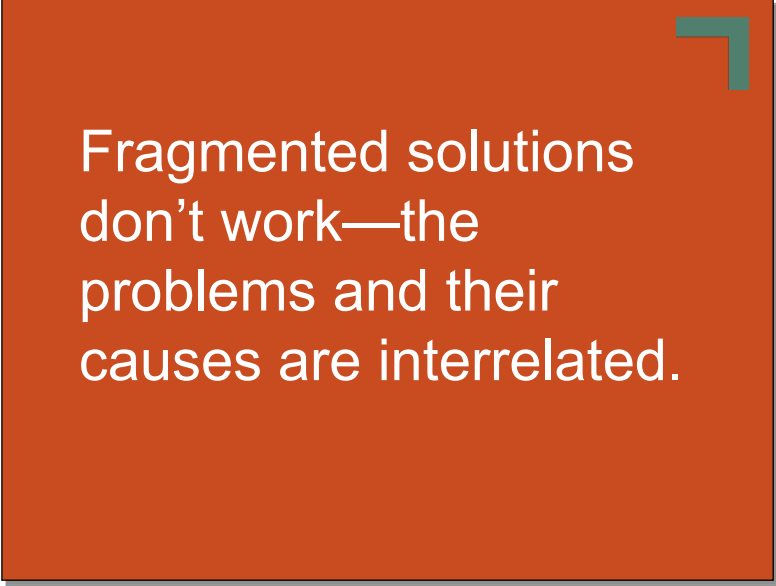
Source: Autor & Wasserman (2013).

- Among women, the college graduation rate has steadily increased.
- The high school dropout rate has been stagnant (across both groups).
- Two Americas have emerged, and society is increasingly polarized. Decline of the blue collar working class. Income inequality and social class inequality have increased.
- Inequality also has serious inter-generational consequences.
- Murray's "Coming Apart: The State of White America, 1960-2010."
- Shortages in high school skills and especially non-cognitive skills.
(Surveys by regional Feds)
- Getting enough workers to show up on time
- Basic skills



A comprehensive approach to skills development makes dollars and sense.

- To address the skills problem, we should take a more comprehensive approach to understanding the economics and psychology of skill development.
- Need to formulate policies that clearly recognize what skills matter, how they are produced and how we should prioritize public policy toward producing skills.
- Doing so avoids a fragmented and often ineffective approach to public policy that misses the pervasive importance of skills.
- The skills problem is at the core of many social and economic problems that plague American society.



Fragmented solutions
don't work—the
problems and their
causes are interrelated.

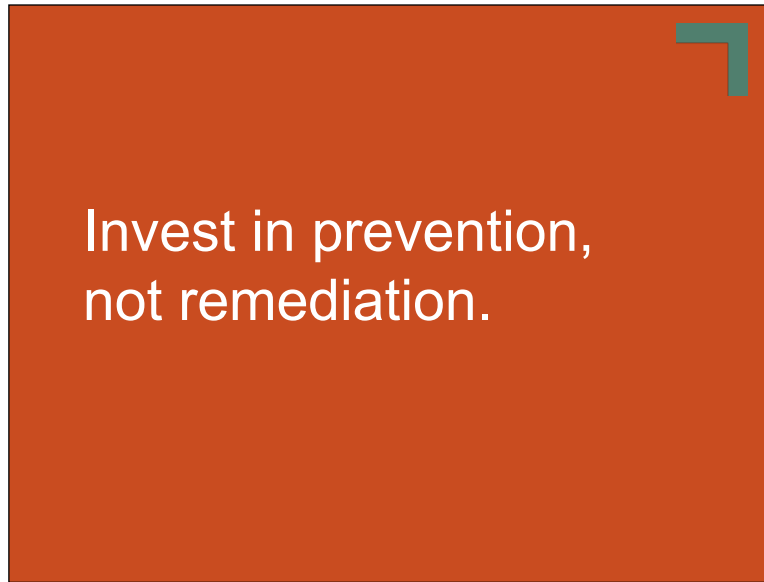
Fragmented Solutions

- Current policy discussions around the world have a fragmented quality.
- They focus on one problem at a time with policies that are designed to address that one problem, often (but not always) by some remediation strategy.

Examples of Fragmented Solutions

- For crime, have more police.
- To promote skills, build more schools, hire better teachers and raise test scores.
- For health, have more doctors and medical facilities.
- For teenage pregnancy, conduct pregnancy prevention programs.

- To reduce inequality, give cash transfers and promote housing programs for the poor.



- Today I sketch a unified policy approach that addresses these problems and others using a strategy of human development to promote social mobility, productivity and reduce inequality.
- It is a policy that promotes skills at the stages of the life cycle where they are most effectively produced.
- It's a policy of **prevention, not remediation.**



- Remediation is sometimes a more effective strategy than prevention if prevention programs are not effective.
- But it can often be very costly to wait if early treatment is highly effective.
- Crime is an example –we can reduce crime by targeting at risk kids 3—4.
- Terry Moffitt crime study: Ages 3—4 are onset of criminality for serious offenders.
- Perry Program targeted exactly that age and group at risk to great effect.



Success depends on
having the right skills
and abilities.

The Argument

1. Modern society is based on skills.
2. Low levels of these skills cause major social problems (dropping out of school, crime, teenage pregnancy, obesity, and poor health).
3. Skills are multiple in nature.
 - i. Current public policy discussions focus on measuring, enhancing, and rewarding cognitive ability using achievement tests. For example, NCLB scores are used to judge the performance of schools and students in those schools. OECD countries compete on PISA test scores.
 - ii. Even OECD is backing off this position.



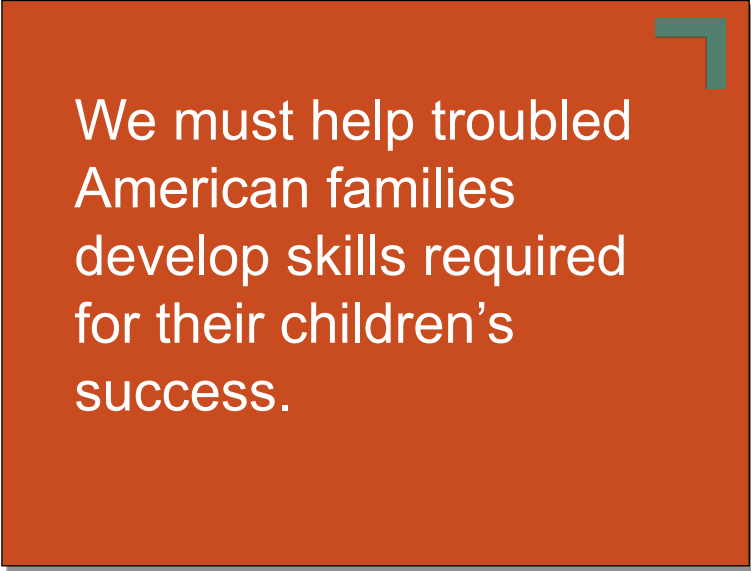
Fostering and Measuring Skills:
Improving Cognitive and Non-Cognitive Skills to Promote Lifetime Success

Tim Kautz, James J. Heckman, Ron Denis,
Bao Lin Wang, Lee Borghans

Link to Report
<http://tinyurl.com/OECD-Report-2014>

OECD
BETTER POLICIES FOR BETTER LIVES

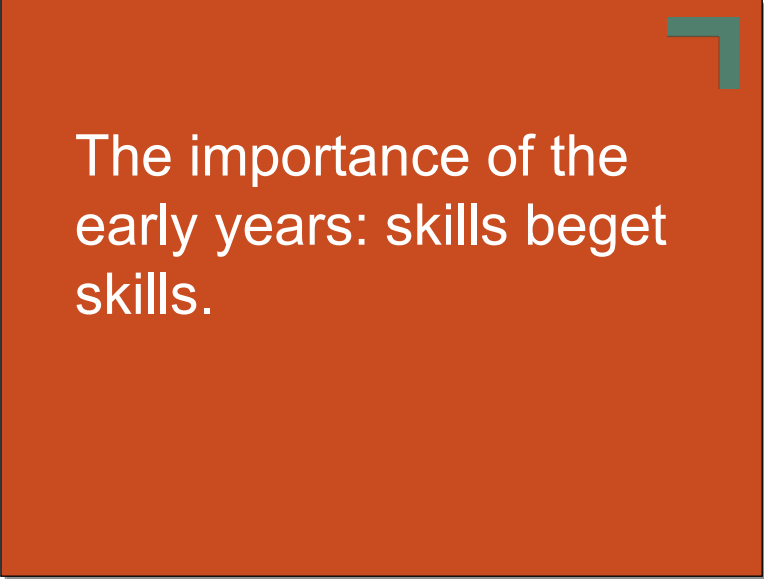
- iii. An important lesson from the recent research on the economics of skills is that cognitive skills are only part of what is required for success in life.
 - iv. Personality skills, “soft skills,” physical and mental health, perseverance, attention, motivation, and self-confidence are also important and are often neglected.
4. Gaps in all types of skills between the advantaged and disadvantaged open up early in the lives of children. Schools contribute surprisingly little to widening or narrowing these gaps.
5. The family lives of young children are the major producers of cognitive and socio-emotional skills. These, in turn, predict crime, health, and obesity.
- i. Family influence extends well beyond the transmission of genes.
 - ii. Cognitive and social skills are not fixed at birth, they are not solely genetically determined, and they can be enhanced.



We must help troubled American families develop skills required for their children's success.

1. The powerful role of early family influence is a concern because family environments in many countries around the world have deteriorated over the past 40 years.
2. **Supplementing** the family and its resources, engaging it in enriching the early life of the child, in supporting the child in school, and in giving sound advice to children, are effective policies.
 - i. If society intervenes early enough and in a consistent fashion over the life cycle of a child, it can promote the cognitive and socio-emotional abilities, as well as the health and well-being, of children born into disadvantage.

- ii. Through multiple channels, these effects percolate across the life cycle and across generations.
- iii. For example, early interventions reduce inequality by promoting schooling, reducing crime, and reducing teenage pregnancy.
- iv. They also foster workforce productivity.
- v. These interventions have high benefit-cost ratios and rates of return. They pass efficiency criteria that social programs should be asked to pass.
- vi. Early interventions that build the skill base of children have much higher economic returns than later remediation and prevention programs, such as public job training, convict rehabilitation programs, adult literacy programs, tuition subsidies or expenditure on police to reduce crime.



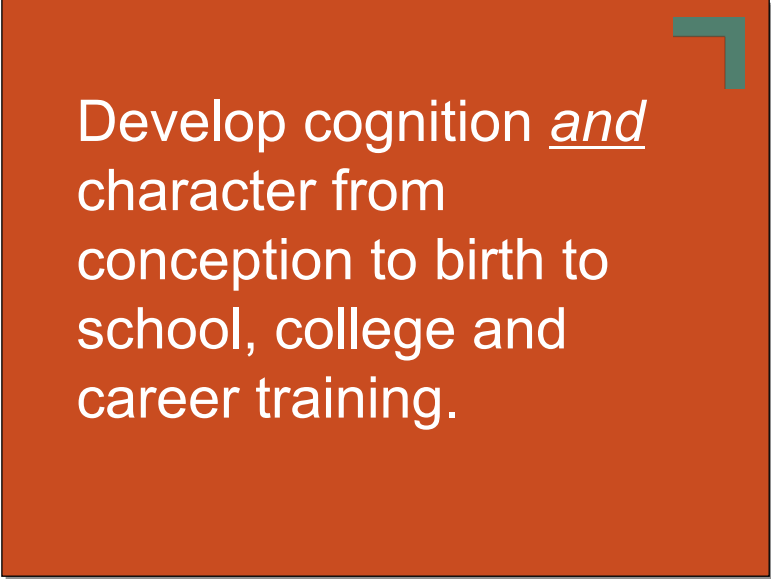
The importance of the early years: skills beget skills.

1. This greater return arises because of the dynamics of skill formation.
 - Life cycle skill formation is dynamic in nature. Skill begets skill; motivation begets motivation. If a child is not motivated and stimulated to learn and engage early enough in life, the more likely it is that when the child becomes an adult, he or she will fail in social and economic life.
 - The longer society waits to intervene in the life cycle of a disadvantaged child, the more costly it is to remediate disadvantage. Similar dynamics are at work in creating child health and mental health.

- We need to implement a more nuanced skill formation policy that recognizes recent knowledge about what interventions at which stages of the life cycle are the most effective for producing skills.

2. A major refocus of public policy is required to incorporate modern understanding of the life cycle dynamics of skill and health formation.

- Although schools and schooling are important, effective social policy targets and strengthens the family.
- Since the Coleman Report, we have known that inequality in families — far more than inequality in the resources applied to schools — produces inequality in schooling outcomes among social and economics classes.

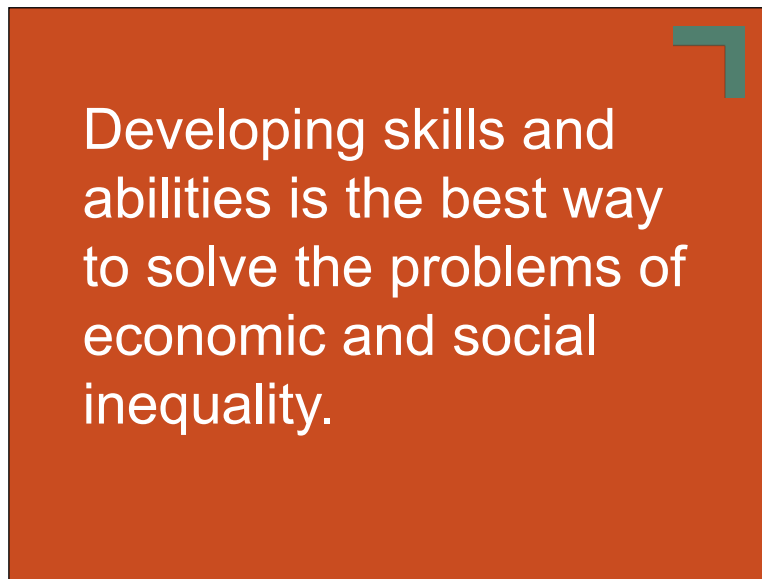


Develop cognition and character from conception to birth to school, college and career training.

The Importance of Cognitive and Character Skills

1. Major advances have occurred in understanding which skills and abilities matter for success in life.
2. Cognitive skills measured by achievement tests are important, but so are the socio-emotional skills—sometimes called character traits or personality traits:
 - Motivation
 - Sociability; ability to work with others
 - Attention
 - Self-regulation
 - Self-esteem
 - Ability to defer gratification

- Health and mental health
3. The evidence on the so-called “soft” skills is hard. They matter and they can be shaped.
 4. Along with cognitive skills, they determine success in school, in the labor force, and in life.



Developing skills and abilities is the best way to solve the problems of economic and social inequality.

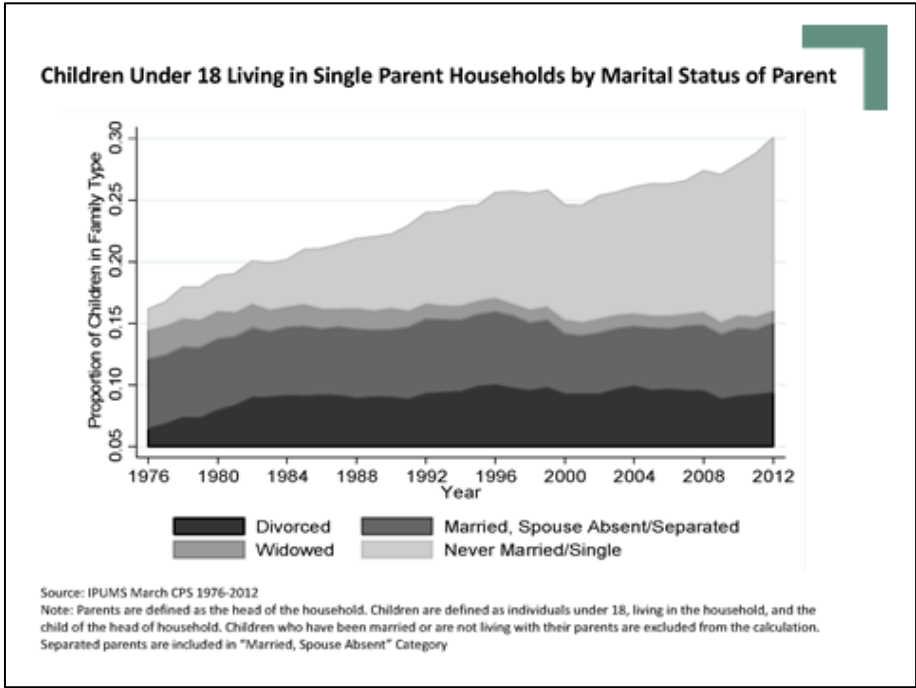
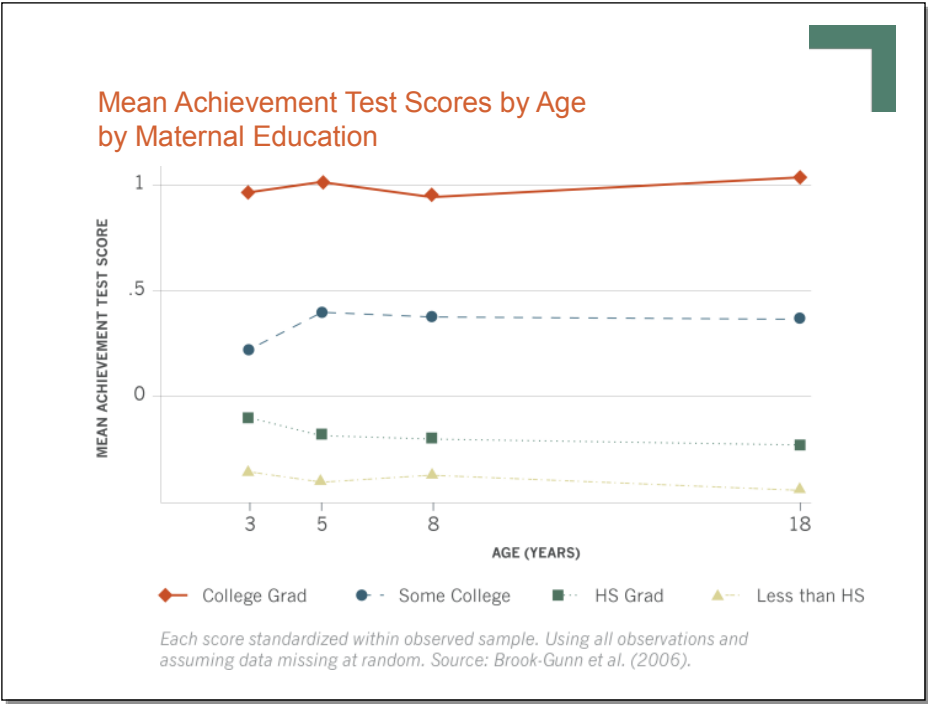
Income Inequality and Intergenerational Mobility

- In the last few years, there has been great emphasis on income inequality as a major determinant of child disadvantage.
- It has been suggested that policies that redistribute income might be highly effective in producing greater opportunity for disadvantaged children.

- But income transfers do not solve the problem of intergenerational mobility.
- We tried that approach 50 years ago in Lyndon Johnson's war on poverty and it failed.
- Fostering abilities and motivations in childhood is the most effective strategy.
- Much of the black-white achievement gap in who enters college is due to gaps in ability at the time children apply to school and not family income.
- Saying this used to be taboo – “blaming the victim.”
- This was at a time when it used to be thought that skills were genetically fixed.
- Nowadays we understand that these abilities are not genetically determined.
- They can be changed.
- They are feasible-cost effective targets for policy.

Gaps Open Up Early

- Gaps in the abilities that play such an important role in determining diverse adult labor market and health outcomes open up early across socioeconomic groups.
- American schools, as unequal as they are, neither exacerbate or attenuate these gaps.
- Evidence on the early emergence of gaps leaves open the question of which aspects of families are responsible for producing these gaps.
- Is it due to genes?
- Family environments?
- Parenting and family investment decisions?
- The evidence from a large body of research demonstrates an important role for investments and family environments in determining adult capacities above and beyond the role of the family in transmitting genes.
- The quality of home environments by family type.
- Such environments are highly predictive of child success.



- Family life has worsened for many children.
- More children are living in single-parent households with fewer economic resources to devote to early development and learning.

- Many of these households are led by less-educated parents.
- The way parents interact with their children, the amount of time they spend with them, and the resources they have to provide intellectual and social stimulation greatly affect their children’s potential for leading flourishing lives.
- Children with less-educated mothers find it very difficult to achieve upward mobility.
- The evidence shows dramatic differences in achievement test scores and in social and character skills across children from different economic and social groups. Children of college-educated mothers achieve at a far higher rate than children whose mothers have a high school degree or less. These gaps emerge long before children enter kindergarten.

Hart & Risley, 1995

Children enter school with “meaningful differences” in vocabulary knowledge.

1. Emergence of the Problem

In a typical hour, the average child hears:

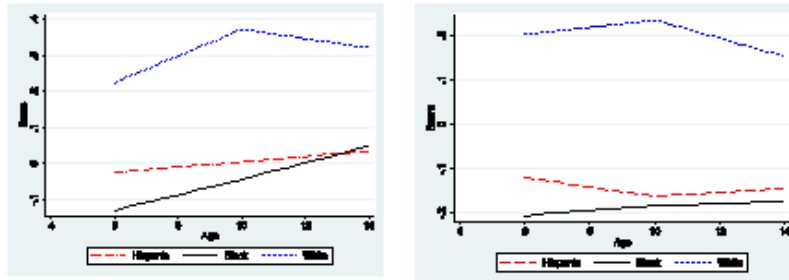
Family Status	Actual Differences in Quantity of Words Heard	Actual Differences in Quality of Words Heard
Welfare	616 Words	5 affirmatives, 11 prohibitions
Working Class	1,251 Words	12 affirmatives, 7 prohibitions
Professional	2,153 Words	32 affirmatives, 5 prohibitions

2. Cumulative Vocabulary at Age 3

Cumulative Vocabulary at Age 3	
Children from welfare families:	500 words
Children from working class families:	700 words
Children from professional families:	1,100 words

Parental Investment Over Childhood Across Ethnic Groups

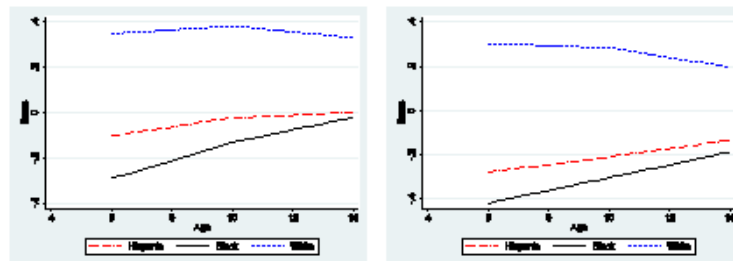
Girls & Boys: Cognitive Stimulation



Source: Moon, 2014

Parental Investment Over Childhood Across Ethnic Groups

Girls & Boys: Material Resource

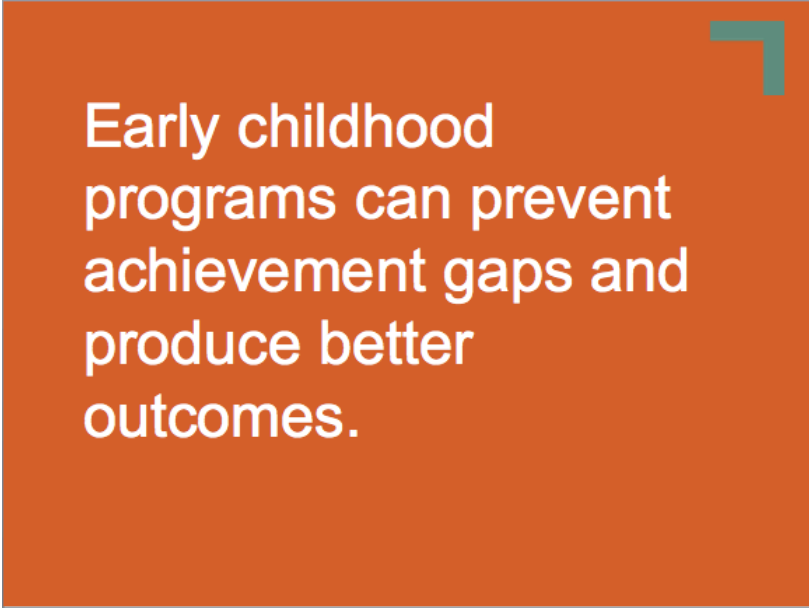


Source: Moon, 2014

- It's not just about education and income, it's about interaction.
- Twenty years ago, the developmental psychologists Hart and Risley showed that the achievement gap opens as early as age three. In a typical hour, a child living in a disadvantaged family hears roughly 600

words. By contrast, in that same hour, a child in a professional family hears over 2,100 words. By age three, the cumulative vocabulary of a child living in a disadvantaged family is 500 words, far below the 1,100-word cumulative vocabulary possessed by a child from a professional family.

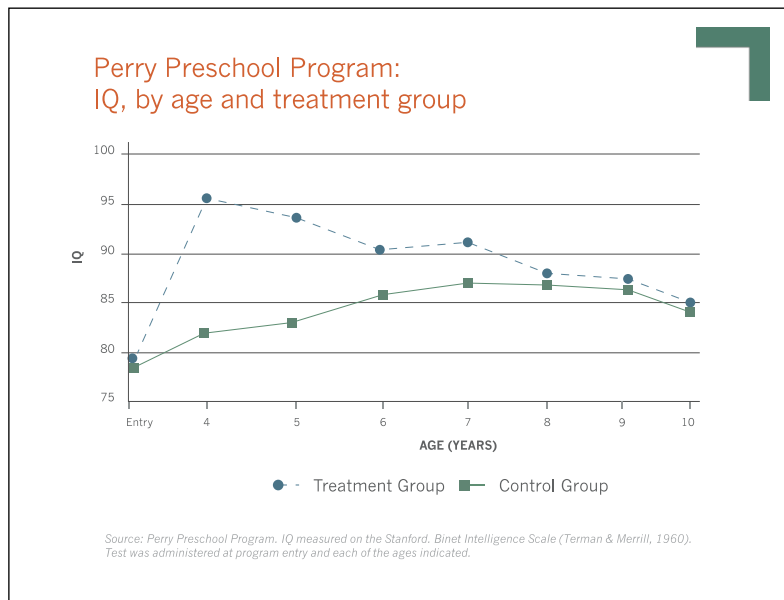
- This early inequality of basic skills tends to persist throughout life and leads to economic and social inequality in the capacities to act that are difficult to close later in life.



Early childhood programs can prevent achievement gaps and produce better outcomes.

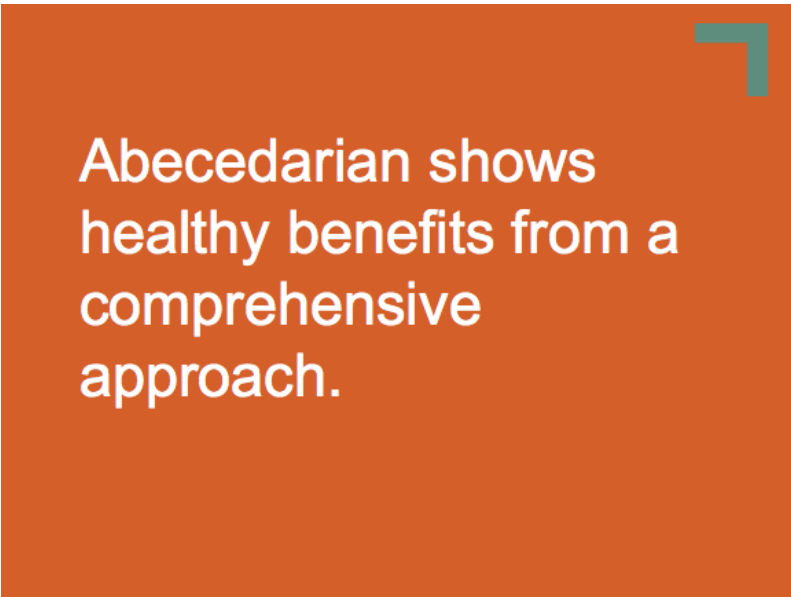
- The Perry Preschool Project is one of the most widely known longitudinal scientific studies in the United States.

- Children from disadvantaged families in Ypsilanti, Michigan, were given two years of very high quality preschool.
- The goal in this program, and many similar programs of the era, was to raise IQ. It was assumed that raising IQ would raise achievement and provide treated children with the skills to lift themselves out of poverty.
- Perry did raise the IQ of those in the treatment group, as you'll see here. But IQ gains faded in later school years to mirror those in the control group.



- Yet, Perry was not a failure by any means. Children in the treatment group had far better life outcomes than those in the control group. They did better in school, had higher levels of employment and wages, and lived healthier and more socially productive lives.

- We analyzed these gains and the savings in the reduced need for social spending.
- We found that each dollar invested in quality early childhood education returns \$7-10 per child, per annum—a rate that exceeds the annual return of the United States stock market in the period following World War II up until the 2008 meltdown.
 - Measures: Education (HS grad and yrs of education), employment, income, teen parent, felonies.
 - Gaps in education narrow the most in all cases and narrow more for women than men.



Abecedarian shows healthy benefits from a comprehensive approach.

- Recent evidence shows that comprehensive, birth-to-age-five quality early childhood programs that incorporate health and nutrition can permanently boost IQ, prevent chronic disease and lower healthcare costs.
- The Abecedarian Project was a randomized trial to determine whether quality early childhood environments could prevent developmental delays among disadvantaged children.
- In addition to early learning, children received two meals and an afternoon snack at the center and were offered periodic medical check-ups, screenings and follow-up care.
- ABC produced lasting gains in IQ and significantly better education, social and economic outcomes for treated children and society.
- It also produced substantial effects on long-term health.
 - This highlights the importance of thinking outside the box that says:
 - i. Boosting cognition is the ultimate goal of education and intervention.
 - ii. Achievement tests are the gold standard of measurement for schools and interventions.

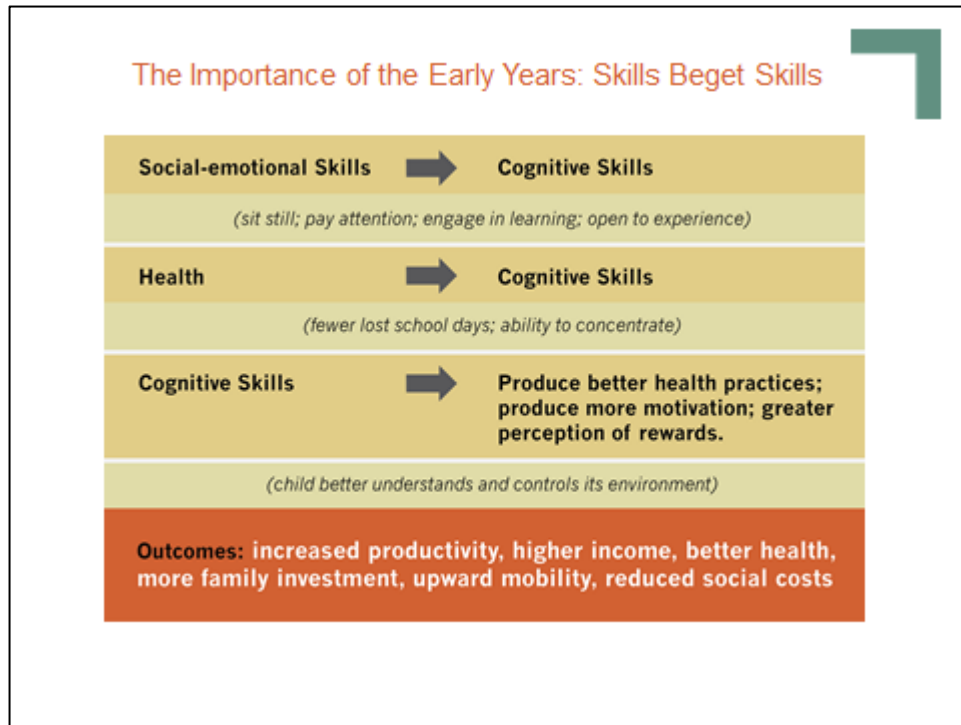
Abecedarian Project, Health Effects at Age 35 (Males)

	Treatment Mean	Control Mean	Treatment p-value
Systolic Blood Pressure	125.79	143.33	0.018
Diastolic Blood Pressure	78.53	92.00	0.024
Pre-Hypertension	0.68	0.78	0.235
Hypertension	0.10	0.44	0.011
HDL Cholesterol	53.21	42.00	0.067
Cholesterol/HDL-C	3.89	4.69	0.057
Abdominal Obesity	0.65	0.87	0.136
Metabolic Syndrome	0.00	0.25	0.009

Source: Campbell, Conti, Heckman, Moon, Pinto, Pungello and Pan (2014).

- Here you see the last medical sweep of adults in their mid-30s.
- Males had lower systolic and diastolic blood pressure.
- They were less likely to fall into stage one hypertension.
- And they had higher levels of “good” cholesterol.
- No males in the treatment group, ZERO, had metabolic syndrome—which dramatically increases one’s risk of heart disease, stroke and diabetes.
- Yet prevalence of metabolic syndrome among men in the control group was 25%.

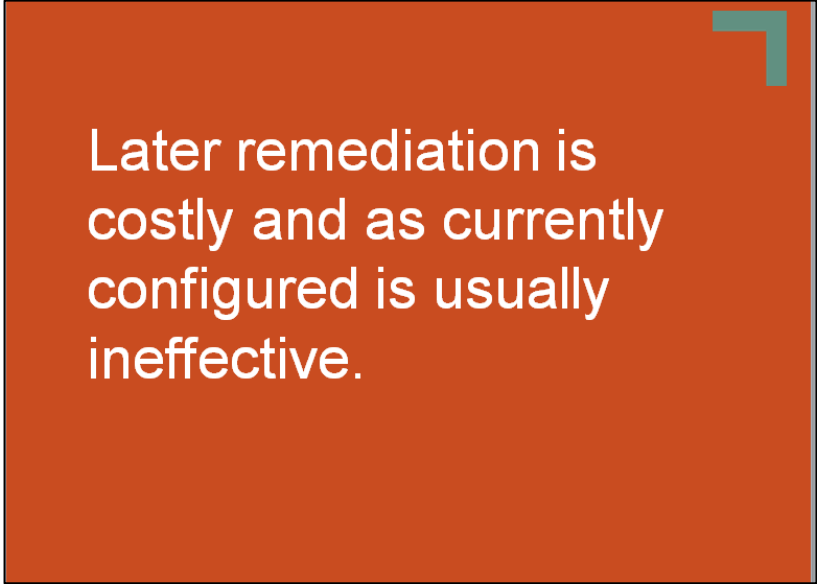
- Treated females were less likely to be affected by abdominal obesity and less likely to fall into the pre-hypertension category.
- Treated women were significantly less likely to start drinking before age 17, more likely to engage in physical activity and more likely to eat nutritious food.
- Both treated males and females were also at significantly lower risk for coronary heart disease.
- All of this suggests that effective early childhood education, health and nutrition programs can and should be combined to boost achievement and prevent costly chronic diseases.
- Today, there is much talk of investing in preschool programs for disadvantaged children. Cities, states and the federal government are investing public and private dollars in building high-quality systems.
- We should encourage investment in high-quality preschool based on the evidence, but we also need to start sooner.
- We should start at birth for some at-risk children because the achievement gap is already evident at age three.



Understanding the Dynamics of Skill Formation: Skills Beget Skills

- a. Based on a modern understanding of the life cycle of skill formation
- b. Skill formation is dynamic in nature—skill begets skill. Creates stocks of capabilities that cross-fertilize other capabilities, what economists call dynamic complementarities.
- c. Health is an important ingredient beyond personality.
- d. More motivated and healthier children are better learners.
- e. The process is synergistic—academic success promotes greater self-confidence and a willingness to explore.

- f. Early advantages and disadvantages lead to substantial differences in adult advantages and disadvantages.



Later remediation is costly and as currently configured is usually ineffective.

Later Remediation Targeted to the Less Able Is Costly and Often Ineffective

- As currently implemented, most adolescent remediation efforts to boost skills, especially those targeted toward promoting the adolescent cognitive abilities of the disadvantaged, have low returns.

For example:

1. Public job training programs
2. Adult literacy programs
3. Tuition reduction programs
4. General pattern: strong returns on later life programs are higher for the more able

5. Lower returns for the less able adolescents (those with lower cognitive/personality/health skills)



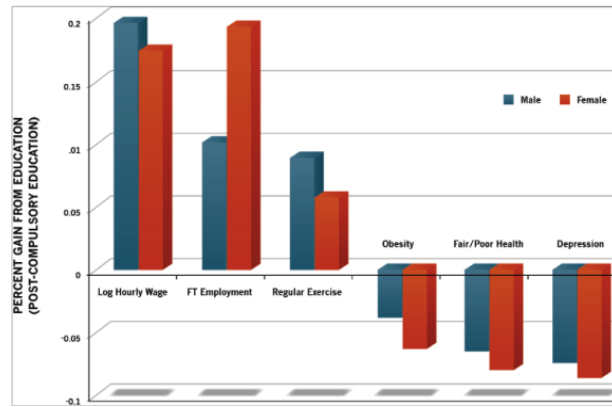
What about promoting education?

- Boosting the capabilities of children entering school will boost the benefits of education to them.
- These capabilities account for a substantial portion of the measured benefits from schooling.

Make no mistake about it, education is important.

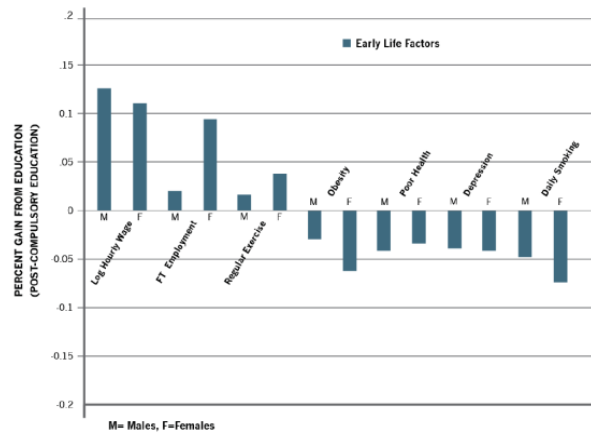
But so, too, is effective early development, which acts as both a foundation and catalyst for success in school, health and life.

Disparities by Education (Post-compulsory Education)



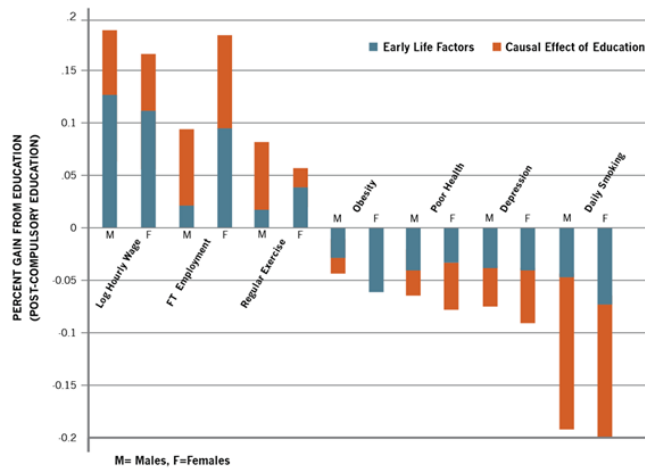
Note: Conti and Heckman (2010). Author's calculations using BCS70.

Disparities by Education (Post-compulsory Education)



Note: Conti and Heckman (2010). Author's calculations using BCS70.

Disparities by Education (Post-compulsory Education)

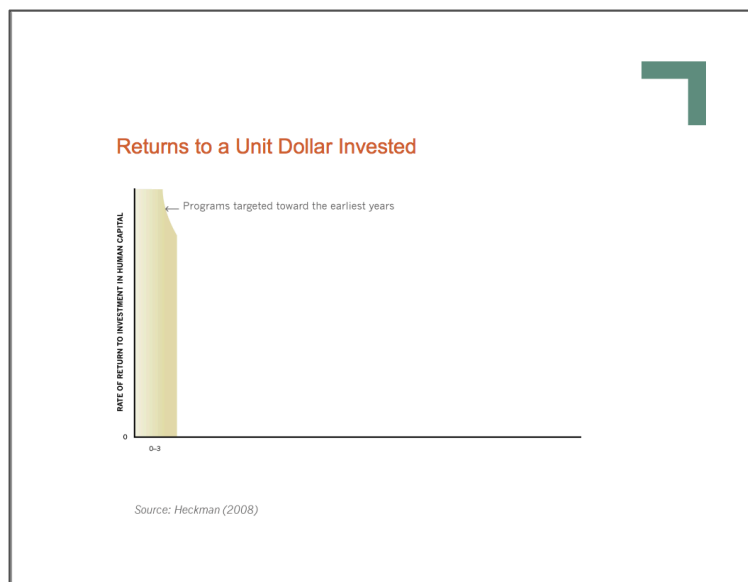
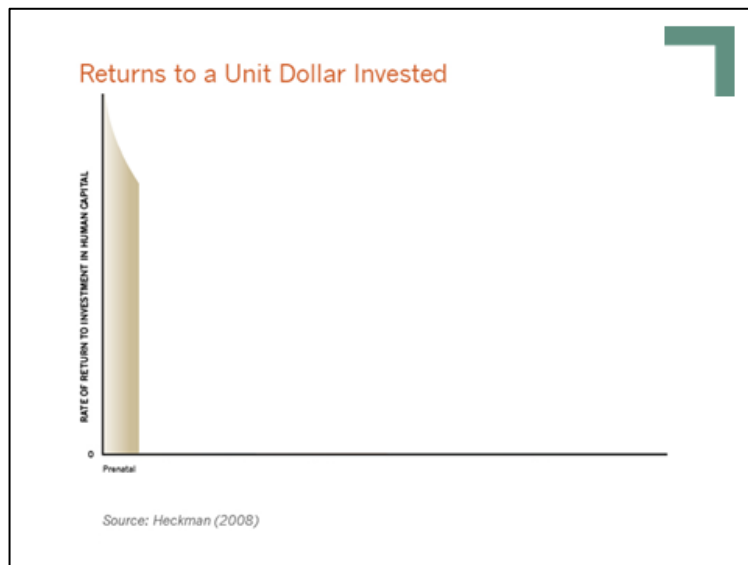


Note: Conti and Heckman (2010). Author's calculations using BCS70.

The solution:
Predistribution, not
just redistribution or
remediation.

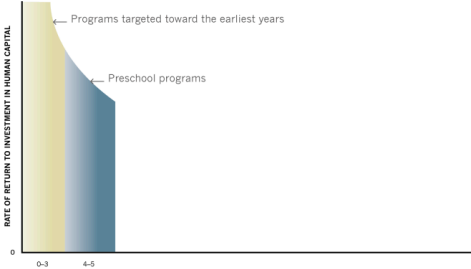
Prevention, not remediation.

- Early investment produces returns that percolate over the life cycle.
- A major refocus of public policy is required to capitalize on our recently acquired knowledge of the importance of the early years in building capabilities and in producing the skills needed to create an effective workforce.





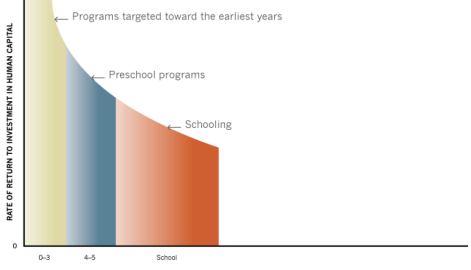
Returns to a Unit Dollar Invested



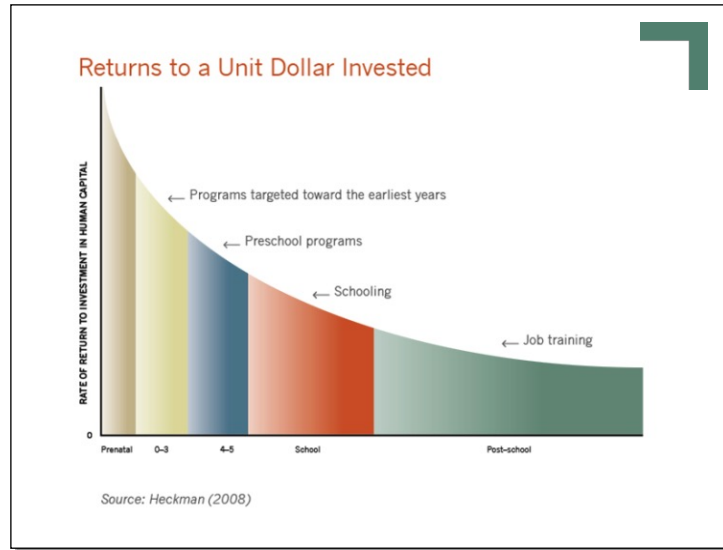
Source: Heckman (2008)



Returns to a Unit Dollar Invested




Source: Heckman (2008)



- This diagram and its policy message have to be carefully digested.
- It presents the rate of return to a unit of investment in parenting at the beginning of the life of the child at conception.
- It gives a measure of how much more productive it is to invest early rather than delay and remediate later in life.
- Returns to education are very high for the most able and motivated students (22% for college education for the most capable).
- These capabilities are not fixed at birth and by no means are all genetically determined. They can be created by wise investments.
- Delay in investment in children to later ages is costly.
- Yet, for disadvantaged children, American public policy (and health policy) focuses on later-life remediation.

- We do not spend our resources wisely.
- We do not make the most productive investments for disadvantaged children.
- Too much spent on remediation of deficits in skills compared to creating skills early on.



Smart investments start
by addressing a major
root cause of
inequality—
*disadvantaged early
childhoods.*

There are two dangers in our current debate over income inequality, social mobility and the protests of pitting the 99% vs. the 1%.

One is going back the failed policies of Lyndon's Johnson's Great Society, where people were given money or better housing or job training—and most of those efforts failed to alleviate the problems of intergenerational income and social mobility.

The other is going back to the failed notion that people are better off when they are left to completely fend for themselves.

All of the evidence points to *early investment* in developing human capital as the most effective anti-poverty policy that promotes social mobility in the long run.

Think predistribution—improving early-life conditions for all children—not transfers to adults, but investments in children.

Thank you.