The History of Educational Attainment in the United States

*The Race Between Education and Technology (Goldin and Katz, 2008)*

- Every cohort of children born between the 1870s and the 1950s had about 0.8 additional years of education than the cohort a decade before.

- Since around 1980, growth in educational attainment has slowed. Children born in 1945 had over two years more education on average than their parents, but by 1975 had only 0.50 more years of education.
Educational Attainment of the Population 25 Years and Over by Age: 1971 to 2007

High school graduate or more, 25 to 29 years

High school graduate or more, 25 years or over

Bachelor's degree or more, 25 to 29 years

Bachelor's degree or more, 25 years or over

Percentage of the Population Completing High School, 2007

Percentage of Adults with a Post-secondary Degree

Why Have We Fallen Behind?

A key factor is that many students arrive at college unprepared.

• 44% of college faculty members report students are not well prepared for college-level writing, 6% view students as very well prepared (Maguire Associates 2008).

• 42% of prospective college students were deemed college ready in math, 28% in science, and less than a quarter were prepared in overall readiness across the four core subject areas of English, math, science, and reading (ACT 2009).
Cross-Country Comparisons of Math, Science and Reading Achievement

<table>
<thead>
<tr>
<th></th>
<th>U.S. score</th>
<th>International average</th>
<th>International best</th>
<th>U.S. rank</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TIMSS math and science</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>8th grade math</td>
<td>508</td>
<td>500</td>
<td>Taiwan (598)</td>
<td>9 of 48</td>
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<tr>
<td><strong>8th grade science</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>520</td>
<td>500</td>
<td>Singapore (567)</td>
<td>11 of 48</td>
</tr>
<tr>
<td><strong>PISA science literacy</strong></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>OECD countries</td>
<td>489</td>
<td>500</td>
<td>Finland (563)</td>
<td>21 of 30</td>
</tr>
<tr>
<td><strong>US and non-OECD countries</strong></td>
<td>489</td>
<td>NA</td>
<td>Hong Kong (542)</td>
<td>9 of 28</td>
</tr>
<tr>
<td><strong>PIRLS reading literacy</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th grade males</td>
<td>535</td>
<td>492</td>
<td>Hong Kong (559)</td>
<td>12 of 38</td>
</tr>
<tr>
<td>4th grade females</td>
<td>545</td>
<td>509</td>
<td>Russia (572)</td>
<td>15 of 38</td>
</tr>
</tbody>
</table>

## Level of Achievement of U.S. students, NAEP results 2009

<table>
<thead>
<tr>
<th></th>
<th>All students</th>
<th>Students eligible for federal lunch programs</th>
<th>Hispanic students</th>
<th>Black students</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>4th grade reading</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent of students scoring basic or above</td>
<td>67%</td>
<td>51%</td>
<td>49%</td>
<td>48%</td>
</tr>
<tr>
<td>Percent of students scoring proficient or above</td>
<td>33%</td>
<td>17%</td>
<td>17%</td>
<td>16%</td>
</tr>
<tr>
<td><strong>8th grade math</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent of students scoring basic or above</td>
<td>73%</td>
<td>57%</td>
<td>57%</td>
<td>50%</td>
</tr>
<tr>
<td>Percent of students scoring proficient or above</td>
<td>34%</td>
<td>17%</td>
<td>17%</td>
<td>12%</td>
</tr>
</tbody>
</table>

Percentage of 8th Grade Students who Scored at or above Proficient on the Mathematics Portion of the National Assessment of Educational Progress

Note: Accommodations were permitted for students with disabilities and English language learners starting in 2000. Source: U.S. Department of Education, National Assessment of Educational Progress, 1992-2009 Assessment.
Outcomes by Age 20 for Child-Parent Center Preschool Intervention Participants and Comparison Group Members

Perry Preschool Program Participants and Non-Participants at Age 40

<table>
<thead>
<tr>
<th>Category</th>
<th>No-program Group</th>
<th>Program Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arrested 5 or More Times</td>
<td>30%</td>
<td>10%</td>
</tr>
<tr>
<td>Earned $20,000 or More</td>
<td>40%</td>
<td>60%</td>
</tr>
<tr>
<td>Graduated Regular High School</td>
<td>50%</td>
<td>70%</td>
</tr>
<tr>
<td>IQ 90 or Greater at 5</td>
<td>60%</td>
<td>80%</td>
</tr>
</tbody>
</table>

Lifetime Benefit to Cost Ratios Across Interventions

Notes: All data in 2004 dollars; all ratios used 3% discount rate except for the Job Corps evaluation which used a rate of 4%.
Source: Author’s calculations.
Present Value of Per Child Program Costs and Estimated Lifetime Compensation Across Interventions

Note: All data in 2004 dollars
Source: Author’s calculations.
Average Adult Earnings for Various Levels of Educational Attainment (2009 dollars)

1975
- No HS Diploma, $26,789
- HS Diploma, no college, $33,458
- Bachelor's or higher, $59,890

2005
- No HS Diploma, $22,932
- HS Diploma, no college, $34,137
- Bachelor's or higher, $71,848

Unemployment Rates by Educational Attainment, 1992-2010

Benefits to Education

• Better Labor Market Outcomes (Levin et al., 2007)
• Improved Health Outcomes (Cutler and Lleras-Muney, 2010) (Grossman, 2005)
• Societal Outcomes
  – Crime (Levin et al., 2007)
  – Voting (Dee, 2004)
  – Free Speech (Dee, 2004)
  – Taxes (Levin, 2005)
President Obama’s National Education Goals

• “By 2020, America will once again have the highest proportion of college graduates in the world.”

• “I ask every American to commit to at least one year or more of higher education or career training. This can be community college or a four-year school; vocational training or an apprenticeship.”
Post-Secondary Education in OECD Countries (2007)
Percentage of adults ages 25-34 with a post-secondary degree

The President’s Comprehensive Education Agenda Includes:

• Postsecondary Education
• Primary and Secondary Education
• Early Childhood Education
Improving College Accessibility and Completion

• The Recovery Act increased Pell Grants by $500 to $5,350 and created the $2,500 American Opportunity Tax Credit for four years of college tuition.

• The Administration is helping unemployed workers enroll in community colleges while maintaining unemployment benefits.

• The Higher Education Component of the House Reconciliation Bill includes:
  – Replaced guaranteed loans with direct loans, which are administered by private-sector companies, to save taxpayers billions of dollars;
  – Secured funding for Pell Grants and ensuring that they keep up with inflation;
  – Expanded Income-Based Repayment options;
  – Increased support for Historically Black Colleges and Universities and other Minority Serving Institutions;
  – Increased the federal investment in community colleges as part of the College Access Challenge Grant program.
Primary and Secondary School Reform

- Race to the Top Fund
- Investing in Innovation (i3)
- Supporting Alternative Educational Choices
- Promise Neighborhoods
- School Turnaround Grants
- Teacher Incentive Fund
- Promoting STEM
- Elementary and Secondary Act Reauthorization
Early Childhood Education Reform

Increased investment in our future past 2020:

- $2.1 billion in grants under ARRA for early learning programs;
- An increase of nearly $1 billion for Head Start and Early Head Start in the President’s FY11 budget.
Projections are Inherently Uncertain

• While they rely on the most recent data available, these projections are based on the jobs of today.

• Some of the fastest growing jobs over the next decade have yet to be identified.
  – In 2003 a quarter of the workforce had jobs that were not even listed among the Census Bureau’s Occupation codes in 1967.
  – Environmental-related occupations did not exist in comparable data prior to 2000.
Employment Changes in Industries Adding the Most Jobs, 2008-2018

- Individual and family services: 53,020
- Hospitals: 55,070
- Employment services: 59,970
- Nursing and residential care facilities: 63,680
- General Local government educational services compensation: 65,270
- Retail trade: 65,400
- Computer systems design and related services: 65,640
- Food services and drinking places: 73,880
- Management, scientific, and technical consulting services: 83,520
- Offices of health practitioners: 126,530
- Construction: 133,710

The Skills We Will Need

Task intensity of declining vs. growing occupations, 1992 - 2002

Task intensity scale

Source: CEA calculations using data on task intensity from Autor, Levy, and Murnane (2003) and CPS data
Projected Employment Growth from 2008-2018 by Occupation's Education or Training Requirement

- Medium- or short-term training
- Experience or long-term training
- Associate's degree or postsecondary vocational award
- Bachelor's degree or more

In Sum…

• The economy appears to be shifting toward jobs that require workers with greater analytical and interactive skills.

• We need a comprehensive strategy to ensure that our education and training system is strong and effective. This system should include:
  – solid institutions starting with early childhood;
  – institutions and programs with consistent and coherent goals and curricula;
  – coordination between training programs and employers and other workforce stakeholders;
  – flexible scheduling and adequate financial assistance and student support;
  – positive incentives and strong accountability.

• Projections of future jobs are inherently uncertain — but the evidence strongly suggests that high quality education and training is the best way to prepare the workers of today for the jobs of tomorrow.