THE ECONOMIC IMPACT OF EDUCATION THROUGH THE LENS OF PISA

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PISA Day
Alliance for Excellent Education
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Commitment to Achievement Growth

- Nation at Risk (1983)
  - Stem a rising tide of mediocrity.
- George H. W. Bush and all Governors (1989)
  - Bring U. S. achievement up to top of world by 2000.
- Clinton: Goals 2000:
  - “All Americans can reach international competitive standards.”
- Bush: No Child Left Behind
  - “All students proficient by 2013”
- Obama: State of the Union 2011
  - “We know what it takes to compete for the jobs and industries of our time. We need to out-innovate, out-educate, and out-build the rest of the world.”
Importance to the United States

“Human capital will determine power in the current century, and the failure to produce that capital will undermine America’s security.”

— Independent Task Force Report, Condoleezza Rice, co-chair, Council on Foreign Relations
Cognitive Skills and Economic Growth

- Conditional growth vs. Conditional test score
- Coefficient: 1.980, se = 0.217, t = 9.12
Years of Schooling and Economic Growth

Without quality control

With quality control
“First in the World by 2000”

The graph illustrates the percentage additions to GDP for various time periods, with the goal of achieving "First in the World by 2000". The x-axis represents the years from 1989 to 2064, and the y-axis shows the percent additions to GDP. The graph includes a line for 10-year reform, another for 20-year reform, and a line for Total U.S. K-12 spending.
PISA 2015 -- Math + Science
Importance to United States

• Value of higher skills

  • Germany, Canada

  • No Child Left Behind
## Economic Value of Improvement

<table>
<thead>
<tr>
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<th>Being Germany</th>
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<td>Present value ($ trillion)</td>
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# Economic Value of Improvement

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U.S. States
GDP per Capita of U.S. States, 1970-2007

Notes: GDP per capita is denoted in 2005 U.S. dollars. AK, DE, WY are omitted. Source: Authors' calculations based on data from the U.S. Bureau of Economic Analysis. Line in middle of box indicates median; top and bottom of box indicate 75th and 25th percentiles, respectively. Dots indicate large outliers outside of normal data range.
Test Scores and Growth: U.S. States

Growth in GDP/pop over 1970-2010 for states as related to math skills and conditional on income levels in 1970
All Students to Basic Level (NCLB)

Gain as % current GDP
Economic impact if student performance improves in…

- All to U.S. best: 422
- All to regional best: 198
- Students to Basic level: 179
- All to Canada: 429
Economic impact if student performance improves in…

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<th>Description</th>
<th>% increase in average GDP level</th>
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<td>All states move to top U.S. state</td>
<td>9.0</td>
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<tr>
<td>All states move to top regional state</td>
<td>4.2</td>
</tr>
<tr>
<td>All students achieve BASIC level</td>
<td>3.8</td>
</tr>
<tr>
<td>All states move to Canadian level</td>
<td>9.2</td>
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No Simple Answers
Improvement is possible but not easy

Increments in Expenditures and Gains in Student Achievement 1990-2008


(States and test-score gains data are marked with circles)
What Can Be Done?

1. Improve teacher quality
2. Improve teacher quality
3. Improve teacher quality
Teacher Quality: The Big Picture

• Good teachers are essential to improved schools
  BUT
• Too hard to change so we will stay with current policies
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Very different economic futures based on today’s actions

• Total focus on current problems
• Ignoring long run means constant future problems
Teacher Quality

- No identifiable characteristics
  - Master’s degrees
  - Experience*
  - Certification
  - Preparation
  - Professional development

- Cannot regulate and pay on characteristics

- Observable through both student performance and supervisor ratings
Range of Approaches

• Align pay and performance
  • Evaluation
  • Reward success
  • Zero option

• Accountability

• Local autonomy

• Parental choice of schools

• Preschool education
Key Questions

1. Does achievement matter?

2. Is the U.S. competitive?

3. Does it matter to states?

4. Are there things to be done?
Key Questions

1. Does achievement matter?
   YES

2. Is the U.S. competitive?
   NO

3. Does it matter to states?
   YES

4. Are there things to be done?
   YES
Contact

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