Importance of Human Capital Policy

Focus

- Traditional emphasis on school attainment
- Development of access programs
  - Centerpiece of Millennium Development Goals
  - Education for All initiative
- Some clear successes and some continuing challenges

- New evidence that **QUALITY** is the primary issue
## Latin America Then

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<th>Region</th>
<th>GDP/pop 1960</th>
<th>Years schooling</th>
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Cognitive Skills and Economic Growth

![Graph showing the relationship between conditional test scores and conditional growth. The graph includes regions labeled SSAFR, LATAM, MENA COMM, EURO, and ASIA.]
Overview of Discussion

- Importance of quality (cognitive skills)
  - Economic growth
  - Individual earnings
  - Distributional outcomes

- Policy actions and reform
  - Resource policies
  - Supply side incentives
  - Demand side incentives

- Importance of information
Cognitive Skills: International Student Achievement Tests

- Measuring knowledge, not sitting in the classroom
- International agencies have conducted many international tests of students’ performance in cognitive skills since mid-1960s
  - 12 testing occasions
  - 36 separate test observations (age levels, subjects)
- Require rescaling to obtain combined measure
  - Adjust mean and variance of separate
Education Quality and Economic Growth

cof = 1.9804387, se = .21707105, t = 9.12
Quantity of Schooling

Without quality control

With quality control

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(coef = 0.58144999, se = 0.09536607, t = 6.1)

(coef = 0.0264058, se = 0.07839797, t = 3.4)
Education Quality and Openness

Effect of test score on growth

Openness
Implications of Reform – Simulation of Economic Outcomes

- Speed of reform
  - 20 or 30 years

- Magnitude of reform
  - Moderately strong (½ standard deviation)
    - Half distance of Mexico, Indonesia, Chile to OECD
    - U.S., Germany to East Asian

- Full impact felt 35 years after completion of reform
Improvements in GDP with Enhanced Cognitive Skills

The chart illustrates the percent additions to GDP over a 25-year period, comparing 20-year and 30-year reform scenarios with typical education spending.

Key points:
- **20-year reform** shows a steady increase in percent additions to GDP, reaching nearly 40% by 2080.
- **30-year reform** begins with a slight increase and gradually increases to around 30% by 2080.
- **Typical education spending** remains relatively low and shows a modest increase, staying below 10%.

The chart highlights the significant impact of enhanced cognitive skills on GDP growth over the long term.
Other Benefits of Improved Cognitive Skills

- Improvement in individual earnings
  - True for developed countries
  - True for developing countries
- Improvement in income distribution
Inequality of Educational Quality and of Earnings
Conclusions on Economic Impacts

- Powerful effects of cognitive skills on individual earnings, on the distribution of income, and on economic growth
  - Support for causal interpretation

- The current situation in developing countries is much worse than generally pictured on the basis just of school enrollment and attainment
Basic Skills

Ghana

- never enroll
- dropout gr 1-5
- dropout gr 5-9
- finish gr 9 w/o basic skill
- finish gr 9 w/ basic skill

Grade 9: 37%

Fully literate: 5%
Basic Skills

Brazil

- never enroll
- dropout gr 1-5
- dropout gr 5-9
- finish gr 9 w/o basic skill
- finish gr 9 w/ basic skill

Grade 9: 22%

Fully literate: 8%
Basic Skills

Morroco

- never enroll
- dropout gr 1-5
- dropout gr 5-9
- finish gr 9 w/o basic skill
- finish gr 9 w/ basic skill

Grade 9

28%

Fully literate

13%
Cognitive Skill Production

- Families
- Peers
- Community and neighborhood
- Schools

- Policy largely around schools
  - but other interventions such as health programs
Resource Policies

- Little evidence of success
- Cross country evidence
Resources and Performance across Countries

Math performance in PISA 2003 vs. Cumulative educational expenditure per student

- $R^2 = 0.01$
- $R^2 = 0.15$
Resource Policies

- Little evidence of success
- Cross country evidence
- Within country – developed
- Within country – developing
Resource Policies

- Little evidence of success
- Cross country evidence
- Within country – developed
- Within country – developing

- Does not say “resources never have effect”
- Does not say “resources cannot have effect”

*No expectation within current incentive structure*
Teacher Quality

- Strongest evidence on systematic effects
- Not related to common measures
- Observable through both student performance and supervisor ratings
Institutional Reforms Supported by Evidence

- Centralized exams
- Accountability
- Autonomy/decentralization
- Choice
- Direct performance incentives
Complementarity of External Exams and School Autonomy

Math performance in TIMSS/TIMSS-R test scores (relative to lowest category)
Demand Side Incentives

- Application mainly in developing countries
  - Motivated by access/attainment issues

- Work through changing student and family behavior

- Programs carefully evaluated
Range of Demand Side Programs

- Aimed generally at encouraging attendance/completion
- Conditional cash transfers
  - Mexico, Brazil, Columbia, Nicaragua
- Fee reduction
  - Indonesia, Cambodia, Taiwan, Kenya*
- Food and nutrition supplements
  - Bangladesh, India, Kenya
Results of Demand Side Incentives

- Each has positive (and significant) impact on attendance and attainment

- But, with exception of Kenyan merit scholarship, little or no apparent impact on achievement
Conclusions on Demand Side Incentives

- Incentives have impact on behavior
- Requires care in structuring incentives
  - Ensure that goals are correct
  - Do not assume other outcomes
- May be perverse effects
  - Access and quality trade-offs
- Access viewed as “equity”
  - Equity not supported by low quality
Information and Feedback

- Assessments have been very bad
  - Limited national assessments
  - International assessments problematic

- No regular evaluation function
  - Local variation in effectiveness
  - No simple solutions
Conclusions

- School quality is not easily changed

- Focus on *Incentives* but be careful

- Information shortage critical
  - Student performance
  - Program feedback