Where Should Brazil Invest to Most Effectively Improve Education?

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• **Primary mission of the Lemann Center at the GSE at Stanford is to help improve Brazilian education.**

• **We pursue this mission by training students & scholars to become educational innovators & educational entrepreneurs; by developing new learning technology; by researching interventions that improve student learning, and by working with state governments to develop effective improvement strategies.**

• **Over the past five years we have learned a lot.**

• **This is the focus of my brief presentation.**

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**Background to the Recommendations**
• Gains on the SAEB test in mathematics & Portuguese in 5th and 9th grades have been positive and significant in 2003-2013—the gains are among lower, not higher SES students.

• Gains on the PISA mathematics test (15 year-olds) have been larger, but mainly because they reflect increases in the average number of years the sampled students have been in school. Gains on PISA also larger in lower SES.

• Students in some states (state and municipal systems) have made much larger gains than in other states.

Overall Picture of Improvement
Some interventions that seem to work

- Early childhood day care and preschool;
- Extra year of primary schooling;
- (Possibly) longer school day;
- Increased OTL in classrooms (time on task; more curriculum coverage);
- Ceará-type literacy program (includes structured materials for teachers & students, teacher training, school incentives)
- Principal training: (a) in lowest performing schools in São Paulo, and (b) training plus more financial resources;
- Teacher pay incentives in Pernambuco but not in São Paulo ([incentives in Pernambuco more directly based on student performance, and in SP on presenting portfolios]
• Little evidence that “silver bullet” approaches will have big effects
• One type of intervention that seems to work involves more time on academic work (more years of schooling, longer school day, more time on task)—all involve considerable investment
• Another type involves targeted training, or a combination of curriculum upgrading + structured materials + training (+ incentives).
• Large city municipalities are major actors and can take independent action, but since most municipalities are smaller and not coordinated actors, state leadership is key to impact schools in state and municipal sectors.
• Should states begin to work with municipalities in state-wide efforts to improve primary, and middle schools? This is the Ceará model (& later, MG), and it seems to work.

General lessons emerging I
• Higher test scores may not reduce dropouts, which are heavily influenced by SES-based aspirations and by repetition policies.

• Brazil has not begun to take on two major barriers to improving education: (1) the dismal quality of teacher pre-service education (even in the “best” universities); and (2) the dismal quality of teacher supervision and improvement in schools—this includes reducing teacher absenteeism.

• Some of the interventions tested are attempts to overcome these barriers, but without a more general attack, gains will necessarily be limited.
• The “quality of quantity” cannot be disregarded; it is historically the most common way that societies have increased student learning.

• Education is a human capital intensive sector. Technology, including good curricula and high quality teaching materials, can help improve education, but needs highly prepared & well incentivized human capital to be effective.

• Attempts to reduce the human capital component in education by substituting technology have not produced increases in learning.

• The most effective innovations are those that improve human capital (pre-service & in service training) and combine it with effective technology, mainly more effective curriculum and teacher-enhancing teaching tools.

Lessons learned: final thoughts