

Post-2015 Development Agenda

Brazil Perspectives



Education

SPEAKER

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Summary: White Paper Report by George Psacharopoulos

There is a real problem with education in Brazil, with standards lagging well behind other Latin American countries, including Argentina, Mexico, Venezuela, Uruguay, Chile and Costa Rica. The UN's Education Development Index ranks Brazil at 79, compared with Chile at 41.

But the solution to this is not to adopt yet more aspirational targets for good education for all, which experience shows are certain to fail. Instead, resources must be focussed on where they can do the most good. The practical, cost-effective options are to expand pre-school coverage, increase the percentage of children who attend school and improve overall school quality.

Comparatively few Brazilian children go to pre-primary school, despite early years' education boosting children's development and having a significant beneficial impact in later life. Children who attend pre-school perform better in later years of schooling, are less likely to drop out, are less likely to be involved in crime and have higher earnings as adults. For each year of pre-school as infants, adults have a 7-12% increase in lifetime income.

Another problem for Brazil is that it is one of the few countries which does not have good basic educational statistics. Nevertheless, it is clear that too few children go to primary school. To make matters worse, more than a third of children repeat a grade at least once in primary or secondary school. This is particularly true for students from disadvantaged backgrounds. This poor performance at school is linked to a high drop-out rate. Only 88.7% complete basic education and there are more than 600,000 primary age children are out of school.

For those who do remain at school, performance is poor, reflecting poor school quality. The OECD's internationally respected PISA survey (Program for International Student Assessment) put Brazil near the bottom of the list of 65 countries taking part, making it comparable to Albania, Jordan and Tunisia.

The overall result is a high level of illiteracy. Over a third of a million Brazilians are classified as illiterate, but the result is even worse if we consider functional literacy (sufficient literacy and numeracy skills to function in the community). On this basis, 90% of the population could be seen as illiterate, either because they never attended school, dropped out early or have poor cognitive skills.

These educational disadvantages are not spread equitably across the population. Students from poor families are, for example, 46% more likely to drop out of school following a drop in family income than children of wealthier parents. And, on average, children in the South and Southeast of the country have several more years' education than their peers in the North and Northeast.

There are effective ways to improve matters. For example, improving student test scores by one standard deviation is linked to a 2.6 percentage point higher economic growth rate. For the current average per capita income in Brazil of \$11,690, this means an annual benefit of \$304 per graduate over their whole lifetime. Delivering this improved benefit for four years of schooling would cost \$100 a year but the benefits would be much greater. Each Real spent would pay back 16 Reals at present value.

Expanding primary school coverage would also be a smart move. It looks likely that completing primary school would boost earnings by 10%. Investing a Real to get more children into school would pay back 11 Reals in benefits.

But even better would be investing in early years' education. Children who attend preschool are likely to earn 15% more as adults. Three years' preschool would cost \$500 per child, but each Real spent would pay back 51 Real in extra earnings.

Achieving these targets would benefit in particular those who are now excluded from good quality education and help to address social inequities in the country. But the should also be supplemented by collecting basic education statistics: "If you cannot measure it, you cannot manage it."

White Paper Report by George Psacharopoulos

In spite of some progress over the last decade, Brazil's level of educational development is below that expected for its per capita income. Millions of children do not have a head start in preschool, thousands of children are out of school, one in three of those in primary school repeat a grade, only one half of the students survive to the last grade of primary education, school quality is below average for the country's level of per capita income, nearly one in ten adults are illiterate and there exist huge disparities in educational development between regions.

There are two choices facing Brazil now to fix its broken educational system: (a) riding the Post-2015 MDG wagon and setting targets for 2030 that we know from history they will never be fulfilled, or (b) focus on a few areas that would bring the most benefits to the country.

This paper argues that the first choice would be futile and goes on to identify the few areas that should be prioritized. Based on cost-benefit analysis, expanding preschool coverage, bringing to school many children who are still out, and improving school quality are the smartest investment choices. For every real invested in these areas the country will get back 11 to 75 reais.

The futility of MDG targets

There has been a long history of grandiose international proclamations on education targets to be achieved by 1980, 2000, 2010 and 2015. All of them have been missed, and Brazil is no exception.

- In 1961 Unesco set the target of 100% primary school enrollment in Africa by 1980. Yet by the target date enrollment stood at 56% (Unesco, 1961a, 1961b, 1993).
- In 1990 Unesco, Unicef, and the World Bank launched the "Education for All" (EFA) campaign (WCEFA, 1990) setting the goal of universal primary education by the year 2000. Yet by 1999 the net enrolment ratio is Africa was 57% (Unesco, 2002).
- In 2000 the target year for EFA was shifted to 2015. Yet, according to the latest figures, today there are 58 million children out of school and over 100 million youth aged 15-24 lack basic reading and writing skills (UNDP, 2013; Unesco, 2015a).
- In 2011 the World Bank issued its education strategy for 2020 pledging learning for all, meaning that "all students ...acquire the knowledge and skills they need to live happy, productive lives" (World Bank, 2011). Although the target year of this noble goal is five years away, one wonders how it would be achieved given the huge gaps in educational achievement documented in the recent OECD (2013b) PISA report.

The reason for MDG failures is that education targets are formulated in such a vague way that defy measurement and evaluation, or they are unrealistic, e.g., "establish sufficient education system accessible to all at all levels". Many of the goals or targets are expressed in very general terms that defy rigorous economic analysis, e.g., calls for a "strong" or "sufficient" educational system. The keywords "all" and "every child" are used repeatedly, meaning elimination of the related problem by 2030.

The world press has been critical of the MDG process, e.g., The Economist (2015), The Guardian (2015). Unesco's (2015a) own and latest Education for All Monitoring Report admits many of the targets set for 2015 or 2030 are not likely to be reached by the end of the century.

So why play this charade again?

Key education issues in Brazil

In setting targets for the future, and not necessarily for 2030, the starting point should be the current state of education in a country. And given that targets should be concrete and limited, rather than a long UN-type wish list, focus is needed on the most pressing problems.

Unfortunately, Brazil is one of the few countries in the world for which basic education statistics are missing. In Unesco's (2015a) Education for All Monitoring Report, Brazil is classified among the countries for which progress on the 2015 MDG goals cannot be established because of insufficient data.

Piecing together the latest statistics reported by the OECD (2015a; 2015b), the Unesco (2015b) Institute of Statistics and the World Bank (2015), the following are the salient problems facing Brazilian education.

Overall. Brazil's level of educational development is well below that in other Latin American countries. Brazil ranks 79 in UNDP's (2015) Education Development Index, against Chile's 41 rank, and below Argentina, Mexico, Venezuela, Uruguay and Costa Rica.

Preschool. Preprimary education is still rare in Brazil. Only 36% of 3-year-olds and 57% of 4-year-olds were enrolled in early childhood programs in 2011, compared with an average for OECD countries of 67% and 85% respectively (OECD, 2015b).

This is a serious shortcoming given the importance of preschool education in the recent literature. Preschool gives a head start to the child's cognitive and non-cognitive development. According to longitudinal studies preschool is associated with a long series of benefits that extend over a lifetime such as better performance later in school, lower dropout rate, less crime and higher earnings (Berlinski et al., 2009). For example, it has been found that poor children who attend one year of preschool stay in primary school 0.4 years longer than children who did not attend preschool. For each year of preschool, children have a 7-12% increase in lifetime income, with the larger increases gained by children from families whose parents had the least amount of schooling (Myers, 2004).

An extensive review of the literature on cost-benefit analysis of education by Economics Nobel Laureate James Heckman of the University of Chicago indicates that investment in early childhood programs has the highest social returns (Heckman, 2000; 2008; 2011; 2015).



Source: Heckman (2008)

Low primary school coverage. As it is the case for many other countries, the Education for All 2015 target of the last Millennium Development Goals has been missed. Unesco (2015a) reports a 95% "adjusted" net primary enrolment ratio of the 5-15 years old. This must be a gross overestimate of the true net enrollment ratio because the adjustment includes children of the same age group in secondary education.

High grade repetition. The gross primary school enrolment ratio is 136.3% meaning there are many over-age and grade-repeating students. More than one-in-three students repeat a grade at least once in primary or secondary school. Many primary school students have to repeat a grade more than once. It takes more than 12 years to complete eight grades of primary school. Brazil has one of the highest rates of grade repetition in the world. Grade repetition in Brazil is negatively associated with performance in school and is more prevalent among disadvantaged students. It also contributes to children not finishing school.

High primary school dropouts. The pervasiveness of grade repetition in Brazil has been linked to high dropout rates, only 88.7% completing basic education. As a result of the high dropout rate, there are 601,224 primary school-age children out of school.

Many illiterates in the population. Among the adult population 367,532 are classified as illiterates. Adopting a functional literacy definition, 90 percent of the population in Brazil could be viewed as illiterate, either because they never enrolled in school, dropped out of school, or they are not equipped with a basic level of cognitive skills (Hanushek and Woessmann. 2009).

Low school quality. Out of the 65 countries that took part in the 2012 OECD PISA survey Brazil is at the near bottom in the student achievement country league.

Student scores in PISA achievement tests

Mathematics	Reading	Science
391	410	405
500	500	500
	391	391 410

Source: OECD (2013).

Students in Brazil score well below the 500 OECD average and comparable with Albania, Jordan and Tunisia. Among Latin American countries, Brazil performs below Chile, Mexico, Uruguay and Costa Rica. This is not surprising as, in Pernambuco for example, students are engaged in learning only 126 out of the 200 official school days (Abadzi, 2007).

Poor school quality is a serious deficiency of the Brazilian education system given that cognitive skills are significantly associated with economic growth. A standard deviation advantage in test scores is associated with a 2.6 percentage points higher per capita income growth rate (Hanushek and Woessmann, 2009).

Cognitive skills and economic growth conditional on income



Source: Hanushek and Woessmann (2009)

Inequitable education system. Progression in the school system, from preschool to the university, favors those coming from wealthier families. The chances of students from poor families dropping out of school following a fall in family income is 46% higher than for students from wealthier households (Duryea et al., 2007).

Mean years of schooling of the population by region



Source: Bruns, et al., 2012.

Inequities are exacerbated by the way the higher education system is financed contributing to the maintenance of one of the most unequal societies. State universities are virtually free benefiting those who later in life will have higher incomes. And as reported in a World Bank study there still exist huge educational disparities between the Northeast and the Southeast.

Establishing investment priorities

The main tool adopted by CCC for assessing MDG targets is cost-benefit analysis. Achieving a given target entails use of funds coming mainly from the country's state budget. The question is what value the country is getting back by implementing the target. If the benefits exceed the costs, then the target passes the cost-benefit criterion. If not, there might be better investment opportunities in other sectors. In this context a series of papers have been produced covering each major sector of action from a global perspective, including education (Psacharopoulos, 2014).

Here we focus on the three most problematic areas in Brazilian education - preschool coverage, primary education coverage and education quality. Cost and benefits information on the above topics is scare, contradictory or non-existent. Piecing together information from the World Bank, OECD, the Unesco Institute of Statistics and various publications, we were able to estimate plausible values of benefit-cost ratios on the three key topics.

Improving school quality. Based on Hanushek and Woessman (2009) an improvement of one standard deviation in student test scores is associated with a 2.6 percentage points higher growth rate of the economy. Applying this growth rate to Brazil's \$11,690 per capita income, yields an annual benefit of \$304 per graduate per year lasting a lifetime. We assume that the cost of school quality improvements adds \$100 to the \$800 average cost per student in primary education and that the quality treatment is applied during four years to a particular student cohort. Discounting the above costs and benefits over the lifetime of a given cohort gives benefit-cost ratios of 16 and 23 at 5% and 3% discount rates, respectively.

A World Bank evaluation of education quality in Brazil found that the most cost-effective education inputs for improving primary school quality in the Northeast are textbooks and writing materials (Harbison and Hanushek, 1992).

Expanding primary education coverage. Expanding primary school coverage would cost \$800 per student year for 6 years. Based on Montenegro and Patrinos (2012) it is reasonable to assume that primary school completion in Brazil is associated with a 10% increment in earnings. Applying this premium to double the per capita income to approximate mean earnings, yields a \$2,338 annual benefit. Discounting the above costs and benefits over the lifetime of a given cohort gives benefit-cost ratios of 11 and 15 at discount rates 5% and 3%, respectively.

Increasing preschool coverage. Expanding preschool coverage would cost \$500 per student for 3 years. Applying a 15% earnings increment to double the per capita income yields an annual benefit of \$3,707. Discounting the above costs and benefits over the lifetime of a given cohort gives benefit-cost ratios of 51 and 75 at discount rates 5% and 3%, respectively.

	Benefit-cost ratio	
Policy	At 3% discount	At 5% discount
Expand preprimary school coverage to 60% of eligible children	75	51
Improve school quality (raise test scores by 1 standard deviation)	23	16
Expand primary school coverage to ~100%	15	11

Benefit-cost ratios of three education policies in Brazil

Equity

Beyond efficiency, the three priority education policies identified above have implications for reducing inequities in Brazilian society. The student's socioeconomic background is a very important determinant of scholastic achievement. Regretfully, educational attainment transmits from generation to generation. Providing preschool to students from poor families compensates for their adverse socioeconomic background, breaks the intergenerational path and promises a better future for the student.

Those who benefit most from increased access and better quality education are those who are now excluded. Since these vulnerable groups are concentrated in the country's Northeast, this is an area where education investment should focus.

Data needed

The fact that the country is big and diverse, is no excuse for not reporting basic education statistics. In international data bases indicators such as the net primary school enrollment ratio appear with three dots "…" or "m", meaning the data are missing. In the World Bank data base the last reported net primary enrolment ratio refers to 1970. Perhaps there is something to hide because of possible embarrassment?

Remembering that "if you cannot measure it, you cannot manage it", a complementary policy to the above is the introduction of an education management information system.

Conclusion

Based on the above, what should Brazil do in order to get the maximum benefit for every real spent on education?

- Forget about the multiple and vague Post-2015 MDG targets for 2030 and focus on today's most critical problems.
- Offer more preschool places so that children get a head start, especially in the Northeast.
- Bring to primary school the remaining 5% of the age group that are now out of school, especially in the Northeast.
- Improve school quality by training teachers and ensuring all students have writing materials and textbooks, especially in the Northeast.

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Post-2015 education in Brazil: What are the priorities?

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Global education problems

- All countries in the World face education problems
- No matter how poor or rich a country, educational systems around the World are in a continuous crisis
- But some countries are doing worse than others, and Brazil is one of them

The Post-2015 MDGs hope

 Can Brazil hope to solve its education problems by riding the Post-2015 MDGs wagon?

• The answer is NO!

Economics of education 101

Stream of theoretical and empirical research in the last 60 years

... instigated by.....









...established beyond reasonable doubt

... that education is important for economic and social development

Hence education is dominant...

... in the very-long short-list of the

Post-2015 United Nations Development Goals



What "education"?

and

• For whom?

"Education" can be

• ... at the primary, secondary or higher level

• It can be general or technical/vocational

• Obtained by training on the job

• Of poor or good quality

... and offered perversely

...subsidized by the state

to the rich and the poor alike

The UN answer

Education of all levels and kinds

• For All

UN targets are not feasible

Limited state funds

Limited international aid

Previous targets have failed

Grandiose education declarations known as

- Addis Ababa, 1960
- Jom Tien, 1990
- Dakar, 2000

Priorities must be established

• By treating education as investment

applying cost-benefit analysis

We have accumulated cost-benefit evidence

• For over 100 countries

and

for different levels and types of education

Returns to Education by Level



Heckman's grand summary



Cognitive skills and economic growth conditional on income



The importance of school quality

• A one standard deviation advantage in test scores,

 is associated with a 2.6 percentage points higher per capita income growth rate

Brazil's salient education problems

 Out of the many problems facing an education system, we focus on those that are most critical to the country's socio-economic development

• Selection of the problems is based on the most recent rigorous research on the subject

Lack of data!

- In international data bases indicators such as the net primary school enrollment ratio, Brazil appears with three dots "...", meaning the data are missing.
- In the World Bank data base the last reported net primary enrolment ratio for Brazil refers to 1970.
- Unesco is unable to assess Brazil's progress towards the 2015 MDGs because of insufficient data.

Brazil's education problems

Low preschool coverage

• Low primary school coverage

• Low education quality

• Severe inequities
Preschool

 Only 36% of 3-year-olds are enrolled in early childhood programs,

• compared with 67% in OECD countries

The importance of preschool

 This is a serious shortcoming since preschool gives a head start to the child's cognitive and non-cognitive development.

 Preschool is associated with a long series of benefits that extend over a lifetime such as better performance later in school, lower dropout rate, less crime and higher earnings

Low primary school coverage

- Unesco reports a 95% "adjusted" net primary enrolment ratio.
- This is a gross overestimate of the true net enrollment ratio because the adjustment includes children of the same age group in secondary education.
- The Education for All 2015 target of the last Millennium Development Goals has been missed.

High grade repetition

- The gross primary school enrolment ratio is 136% meaning there are many over-age and grade-repeating students.
- Brazil has one of the highest rates of grade repetition in the world.
- More than one-in-three students repeat a grade at least once in primary or secondary school.
- It takes more than 12 years on average to complete eight grades of primary school.
- Grade repetition in Brazil is negatively associated with performance in school and is more prevalent among disadvantaged students. It also contributes to children not finishing school.

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High primary school dropouts

Only 89% of enrolled students complete basic education.

As a result of the high dropout rate, there are over 600,000 primary school-age children out of school.

Many illiterates in the population

- Among the adult population nearly 400,000 are classified as illiterates.
- Adopting a functional literacy definition, 90 percent of the population in Brazil could be viewed as illiterate,

- either because they never enrolled in school or dropped out of school,

- or they are not equipped with a basic level of cognitive skills

Low school quality

- Out of the 65 countries that took part in the 2012 OECD PISA survey,
- Brazil is at the near bottom in the student achievement country league.

Country Test	Mathematics	Reading	Science
Brazil	391	410	405
OECD PISA average	500	500	500

Dismal comparisons

- Students in Brazil score comparable with Albania, Jordan and Tunisia.

- Among Latin American countries, Brazil performs below Chile, Mexico, Uruguay and Costa Rica.

 Not surprising as, in Pernambuco for example, students are engaged in learning only 126 out of the 200 official school days

Inequitable education system

Progression in the school system favors those coming from wealthier families.

The chances of students from poor families dropping out of school following a fall in family income is 46% higher than for students from wealthier households

Regional disparities

Mean years of schooling of the population



Inequitable financing

State universities are virtually free benefiting those who later in life will have higher incomes.



Brazil's level of educational development is well below that in other Latin American countries.

Brazil ranks 79 in UNDP's Education Development Index,

against Chile's 41 rank, and below Argentina, Mexico, Venezuela, Uruguay and Costa Rica.

Establishing investment priorities

- The tool adopted by CCC for assessing MDG targets is cost-benefit analysis.
- Achieving a given target entails use of funds coming mainly from the country's state budget.
- The question is what value the country is getting back by implementing the target.

- If the benefits exceed the costs, then the target passes the cost-benefit criterion.

- If not, there might be better investment opportunities in other sectors.

Benefit-cost ratios of education policies in Brazil

Policy	Benefit-cost ratio	
	At 3% discount	At 5% discount
Expand preprimary school coverage	75	51
Improve school quality	23	16
Expand primary school coverage	15	11



- Those who benefit most from increased access and better quality education are those who are now excluded.
- Since these vulnerable groups are concentrated in the country's Northeast, this is an area where education investment should focus.

Conclusion

Setting MDG targets for 2030 is a pointless exercise

• Investing in the most profitable levels and types of education should be a continuous process

 "Education for All" should be replaced by "Education for Some", i.e. the most needy