

## **Helpdesk Report: Time taken for inputs into education or policy reform to affect learning outcomes**

**Date:** 4<sup>th</sup> April 2013

**Query:** What does the evidence suggest on the time it takes for inputs into education and/or education policy reform to affect learning outcomes?

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### **1. Overview**

It is difficult to assess the time it takes for inputs into education or education policy reforms to affect learning outcomes. Attributing changes in results to system-wide reforms can be complex when there are many different programmes and elements affecting outcomes. Data are not always available on learning outcomes over time and may be complicated by changes in testing. Learning outcomes also vary between regions within countries.

Gillies (2010) attempts to record timelines for a sample of countries with governance changes, inputs and outcomes in the report: 'The Power of Persistence. Education System Reform and Aid Effectiveness. Case Studies in Long-Term Education Reform'. Also in the report:

- Various government strategies for Namibia are outlined including the introduction of 'School Improvement Plans' in 2000. Improved learning outcomes are recorded between 2001 and 2007. However, improvements were not found in all regions.
- Test results in El Salvador don't appear to have changed following a series of policy and system changes since 1992. However, tests have been revised making it difficult to compare results over time.
- In Zambia, the National Education Policy was introduced in 1996. Improvements in the system and in enrolments are clear but the drivers were not oriented towards increasing learning outcomes. Improvements in inputs have not been proven to produce better learning outcomes.

Large-scale reform in Argentina occurred between 1992 and 1994 when dependent secondary schools were transferred from national to provincial governments. Test outcomes were recorded between 1994 and 1998 and showed improvements on average 1.2 standard deviations higher (Galiani & Schargrodk, 2002). This shows that results were achieved when measured four years after reform. Whether results were achieved sooner is not reported.

Beatty & Pritchett (2012) investigate improvement in learning outcomes for a selection of countries. Corresponding analysis of policy and input changes are not included. Assessment scores are scaled so that 100 points is an international standard deviation. Some results include:

- For maths, students in Colombia gained 4 points per year between 1995 and 2007. Students in Turkey gained 0.35 point per year between 1999 and 2007. Indonesia, Iran, Jordan, Malaysia, Thailand, Tunisia all fell behind in maths scores over the time period studied.
- Results from the Programme for International Student Assessment (PISA) in reading from 2000 to 2009 for the ten countries with comparable reading scores show median estimate of 2.6 point gain per year.
- Southern and Eastern African Consortium for Measuring Education Quality (SACMEQ) test results show a median gain of 1.15 for reading and 1.46 for maths for the 15 African countries studied.

Evaluations of smaller-scale education projects have recorded changes in learning outcomes. Results vary between no change in learning outcomes, improved learning over a few months and improved outcomes over a number of years. There were no studies that documented a point in time from the initiation of a programme that changes in outcome were achieved. Evaluations tend to occur either a year or a number of years after a specific input or change. Some examples include:

- Between 1976 and 1982, 2000 primary schools in rural Colombia set up multigrade classrooms. In 1987, 5 years later, research found students in these schools had significantly improved outcomes compared to a control group.
- The Ghana Quality Improvement in Primary Schools project found students in project schools out-performed students in comparison schools by 2 to 4 percent in both maths and English. Over two years the gain grew to 38 percent for maths and 15% for English.
- In India, programs that trained school teachers and local volunteers to work with low performing students in reading camps held after school and over the summer significantly improved reading skills and test scores over 1-3 months
- The New Horizons for Primary Schools (NHP) project in Jamaica started in 1997. Baseline test scores were recorded in 1998 and reported again four years later. NHP students did improve but this improvement is only slightly higher than that of similar schools without the NHP program over the same time period.
- Evaluation of the Namibian Basic Education Support project found that improved teaching methods produced higher student attainment in maths and environmental studies within one year.
- A multi-sectoral programme in Zambia improved health and nutrition of school children. After one year students in the intervention group performed better than the control group despite starting out with comparatively lower scores. Tests after the second and third years also showed excellent results.
- Colombia rewarded students who made satisfactory academic progress with vouchers to partially cover private secondary school costs. After three years, winners were 10 percentage points more likely to finish 8<sup>th</sup> grade and scored 0.2 standard deviations higher on tests.

The aim of Education for All has sometimes adversely affected student outcomes (Section 4). A significant amount of education reforms have tended to focus on improving access and availability rather than quality.

## 2. Outcomes for system-wide change

## **The Power of Persistence. Education System Reform and Aid Effectiveness. Case Studies in Long-Term Education Reform**

Gilies, J., 2010. USAID Equip2

[http://www.equip123.net/docs/E2-Power\\_of\\_Persistence.pdf](http://www.equip123.net/docs/E2-Power_of_Persistence.pdf)

**Namibia** has successfully developed a functioning education system out of the racially discriminatory system inherited at independence from its apartheid history. Namibian education reform has benefited from consistent national leadership, while being strongly influenced by the experience of school, district, and regional initiatives, capacity, and leadership. Many innovations are being institutionalised on a national scale, such as participatory school improvement planning, school self-assessment, adaptive circuit support services, on-site teacher professional development, and achievement testing linked to professional development. These reforms were initiated in the historically disadvantaged Northern regions where the majority of the population lives, and have resulted in the best improvements in learning outcomes in the country.

The national average test scores reflected slight improvements in student learning between 2001 and 2007, but the differences between the regions were dramatic. The Northern regions have experienced consistent improvement, moving from being well below the national average to reaching the national average. By contrast, the coloured/white areas have dramatically decreased in student learning, while the other areas have held more or less steady.

See page 97 of the full report for a time line of policy change, government inputs, donor dimensions, programme inputs and outcomes.

**El Salvador** recovered from the devastation of the civil war to establish democratic government and processes that include a remarkably stable national consensus on education, strong country leadership, and coherent, comprehensive long-term strategies and plans. Since 1992 El Salvador has built a policy and system infrastructure and institutional capacity, has implemented internationally recognised models for community-based management, and has slowly improved student learning outcomes. The country's consensus model of development will be tested by the opposition political party — based on the country's former revolutionary front — gaining power in 2009 for the first time.

Impact on learning outcomes as measured in the national tests (PAES Grade 12 leaving exam and SINEA Grade 3, 6, and 9 assessments) and the regional comparison (SERCE) indicates that little has changed over time. However, these learning outcome measures need to be interpreted cautiously. A comparison of the PAES scores from 1997 and 2008 showed virtually no change overall, and only a slight increase in language scores. However, the PAES test was revised and rescored twice in this period, making comparability over the long term unclear. The trends since the last revision (2006–2008) show increases of 10–12 percent in each field of study.

See page 84 of the full report for a time line of policy change, government inputs, donor dimensions, programme inputs and outcomes.

By 1990 the **Zambian** education system was in a state of near-collapse after 15 years of economic stagnation and political crisis — infrastructure was in disrepair, students lacked textbooks, and leaving examination results plummeted. Enactment of the National Education Policy in 1996 ushered in fundamental shifts in Ministry of Education (MOE) policy. Changes in the legal framework allowed District Education Boards (DEBs) to be established, and the new law permitted communities to operate schools. Donors supported Zambia's transition to a Sector Wide Approach (SWAp) that fostered the development of increasingly systemic management, planning, and monitoring activities. Over the subsequent 15 years, a reformed education system has supported the enrolment of an additional one million primary school

children; initiated a new regular standards testing regime; effected greater inclusion of decentralized actors into education planning and service delivery; and fostered a culture of planning and coordination between the MOE and the donor community.

Despite these changes, several of the incentives and drivers in the education system are not oriented toward increasing students' learning outcomes. Factors that did make a difference at the school level: school grants, increase in teacher supply, schools built, decentralisation of payroll and establishment of DEBs have not been proven to improve learning outcomes.

See page 129 of the full report for a time line of policy change, government inputs, donor dimensions, programme inputs and outcomes.

### **Evaluating the Impact of School Decentralization on Educational Quality**

Galiani, S. & Schargrods, E. 2002. *Economía* 2 (2): 275–314

<http://www.jstor.org/stable/20065426>

Between 1992 and 1994 the national government in Argentina transferred all its dependent secondary schools to the provincial governments. The authors found that decentralisation improves the performance of public school. Between 1994 and 1998 test outcomes of public schools improved, on average, by 1.2 standard deviations of its distribution as a result of the decentralisation process. However, the effect varies according to fiscal management capacity. In severely mismanaged districts, decentralisation leads to negative outcomes.

### **From Schooling Goals to Learning Goals. How Fast Can Student Learning Improve?**

Beatty, A. & Pritchett, L. (2012) CGD Policy Paper 12

[http://international.cgdev.org/sites/default/files/1426531\\_file\\_Beatty\\_Pritchett\\_Time\\_to\\_MLG\\_FINAL\\_0.pdf](http://international.cgdev.org/sites/default/files/1426531_file_Beatty_Pritchett_Time_to_MLG_FINAL_0.pdf)

The authors use three tests administered around the world, across multiple years, in a handful of developing countries, to look at the underlying pace of progress. They use the Third International Math and Science Study (TIMSS), Programme for International Student Assessment (PISA), and the Southern and Eastern African Consortium for Measuring Education Quality (SACMEQ). Assessments are scaled so that 100 points is an international student standard deviation. This allows a reasonably common interpretation of assessment results between countries.

TIMSS results:

- For maths, students in Colombia gained 4 points per year between 1995 and 2007. Students in Turkey gained 0.35 point per year between 1999 and 2007.
- Indonesia, Iran, Jordan, Malaysia, Thailand, Tunisia all fell behind in maths scores over the time period studied.
- Performance in science was slightly better, with only four of the eight countries studied with negative trends. Median gain was 0.79.

PISA results:

- Results from the PISA in reading from 2000 to 2009 for the ten countries with comparable reading scores are modestly more optimistic—the median estimate is 2.6 point gain per year.

SACMEQ results:

- Fifteen countries or regions in eastern and southern Africa have been participating in the SACMEQ since 1995 or 2000.
- The median points per year gain for reading was a 1.15 gain. Six countries had negative trends.

- The median points per year gain for maths is 1.46. Four countries had negative trends.

### 3. Case studies of national programmes

#### **An Analysis of USAID Assistance to Basic Education in the Developing World, 1990-2005**

Chapman, D. & Quijada, J. J., 2008. Equip2

<http://www.epdc.org/sites/default/files/documents/An%20Analysis%20of%20USAID%20Assistance%20to%20Basic%20Education.pdf>

Ghana Quality Improvement in Primary School (QUIPS) USAID project provides an excellent example of a well-designed study of achievement gains using a pre-post comparison group design that supports claims that the gain was due to the project intervention. In the first year of the project, in both English and maths, students in project schools out-performed students in comparison schools by about 2 to 4 percent. Over two years that achievement gain for projects students grew to 38 percent in maths and 15 percent in English. Moreover, the rate of learning was faster in project schools than in non-project schools. In most situations, students in project schools maintained or even improved on achievement gains made as a result of project interventions even after leaving the program. Magnitude of project learning gains compared to comparison group over two years were 38% for maths and 15% for English.

In Swaziland, the Education Policy, Management and Technology (EPMT) ran from 1989 to 1996 with \$7,102,000 from USAID. Learning gains include:

- Grade 1 maths, increase of 3% in mean score over 2 years, with number of students achieving 80% mastery increasing from 36% (1992) to 40% (1993) to 51% (1994).
- Grade 1 English, mean scores rise from 19 (1992) to 24 (1994) while the percent of students scoring in the two highest categories increases from 12% (1992) to 29% (1993) to 34% (1994).
- Grade 2 maths and English show similar increases in mean scores and in proportions of student scores at the high-end of the score distribution.

#### **Books, Buildings and Learning Outcomes: an impact evaluation of World Bank assistance to basic education in Ghana**

World Bank, 2004, World Bank Operations Evaluation Department

<http://128.118.178.162/eps/dev/papers/0504/0504013.pdf>

Bank support to basic education has increased greatly over the last two decades. The Ghanaian experience provides a useful test case of the effectiveness of this support. Since 1986 there have been ten Bank education sector projects in Ghana, of which five have directed support to basic education: the Health and Education Rehabilitation Project, which supplied school learning materials; two education sector adjustment credits in support of the reform program; the Primary School Development Project; and the Basic Education Sector Investment Credit. The study analyses school level changes over the 15 year period, 1988-2003.

A major finding of the study is that both the quantity and quality of schooling have improved over the last fifteen years. Enrolments in basic education have increased by over 10 percent compared to 15 years ago. Moreover, 15 years ago nearly two-thirds of primary school graduates were illiterate, as shown by the fact that they scored two or less on a simple eight question multiple choice English test – the same as guessing.

In 1988, Ghana Statistical Service (GSS) visited 1,524 households in 85 different areas of the country. Each person aged between 9 and 55 years and with at least three years of schooling was asked to take a short English reading test of eight multiple choice questions and a math test of eight sums (two addition, two subtraction, two multiplication, and two division). Those scoring five or more on either test took a longer, more advanced test. The results revealed the poor quality of education being received by Ghanaian children. Children who had completed three years of primary education scored an average of 0.8 on the short English test — worse than if they had simply guessed all the answers. Children who had completed all six years of primary did not do much better, with an average mark of only 3.1. In the simple math test the average score for primary graduates was 4.9.

Fifteen years later the GSS/OED survey re-visited the same 85 communities and carried out exactly the same tests in 1,740 households. The results clearly show that children are better educated today than they were 15 years ago. Primary graduates scored an average of 5.6 on the short English test and 5.7 on the math test. These higher scores have been achieved in the context of growing enrolments, so that a greater proportion of those aged 9–55 took the tests in 2003 than in 1988.

Analysis shows:

- Children at all levels of basic education (grades 1–10 in 1988 and 1–9 today) score higher marks today than did their counterparts 15 years ago.
- Junior Secondary School graduates score higher than did Middle School graduates, despite the latter receiving 10 rather than 9 years of education.
- The gain is larger at lower grades and for English is reversed for secondary school graduates who score worse today than did their counterparts 15 years ago.

While children of better-off households on average score higher, scores have improved for children of households across the income distribution. There is greater uniformity in performance across income groups for primary school children today than 15 years ago. Nevertheless for math the improvement has been greatest for the children of the relatively better off.

There is corroborating evidence of improved educational outcomes from the Criterion Reference Test (CRT) carried out since 1992, the mean English score rising from 29.9 to 36.9 between 1992 and 2000 and math by a similar amount (Figure 5.5). While covering a shorter time period than the two GSS surveys, the tests show the same clear improvement in test scores.

### **Project performance assessment report, Honduras**

World Bank, 2004, World Bank Operations Evaluation Department

<http://www.umass.edu/cie/kinsey/Honduras%20Project%20Evaluation.pdf>

This is a Project Performance Assessment Report on two education projects in Honduras. The Rural Primary Education Management project (ADEPRIR). Total project costs were finalised as US\$5.3 million. The loan closed on December 31, 1995, and disbursed almost fully after extensions totalling 18 months. The Basic Education project (PROMEB), was approved for a credit of US\$30 million on July 12, 1994.

While each project had its own specific objectives, the common goals were to increase quality of primary education, train teachers, and make the management of education more efficient. The Rural Primary Education Management Project carried out relatively few activities during most of its implementation period, was reduced in scope, and ultimately did not fulfil its objectives. The Basic Education Project succeeded in carrying out most of its planned activities and substantially achieved its objectives.



Data on changes of important educational indicators during the 1990s is reported. It is difficult to separate the effects of the two projects under review from those financed by other donors and effects of government policies. However, observations about the evolution of the sector suggest some possible outcomes of the Bank's work.

The Unidad de Medición Curricular Externa (UMCE) achievement tests, given to grades 3 and 6 since 1997, show low performance: overall; only 12.6 percent of students achieve sufficient mastery of the curriculum content and only 17.7 percent of 6th graders reached the acceptable 60 percent math score in 1998. According to interviews with UMCE staff, some of this evaluation result can be attributed to teachers' academic weaknesses and to the tests themselves, which focus on nonessential points, such as grammatical nomenclature. There was some improvement in math test scores in grades 3 and 6 from 1997 to 1998 and stagnation thereafter. USAID tests indicate that there has been greater progress in basic skills than UMCE tests suggest. Nevertheless, in an international comparative study, Honduras scored below all other participating Latin American countries. Bank- and donor-financed projects have provided inputs (e.g. textbooks and teacher training) to help students master the required knowledge, but their specific effects are unclear. The UMCE has considerable technical capacity that will be useful in the complex monitoring tasks required for the fast-track initiative.

Research carried out through PROMEB and USAID suggests that the Bank has invested in areas that are necessary but have a limited direct relation to student performance. The physical characteristics and condition of schools were found to have no relationship to achievement, and teachers' educational level has limited effect. More important are school size (that is, multigrade or otherwise), textbook availability, teacher training for textbooks and knowledge of subject, whether teachers and principals live in the community, parental involvement in students' learning, and interventions such as a curricular calendar and charts to keep track of student progress. Bank projects and policy dialogue have not specifically dealt with classroom instruction issues.

### **Vouchers for Private Schooling in Colombia: Evidence from a Randomized Natural Experiment**

Angrist, J., Bettinger, E., Bloom, E., King, E. & Kremer, M. (2002) "Vouchers for Private Schooling in Colombia: Evidence from a Randomized Natural Experiment." *American Economic Review* 92 (5): 1,535–58.

<http://ddp-ext.worldbank.org/EdStats/COLstu02.pdf>

Colombia used lotteries to distribute vouchers which partially covered the cost of private secondary school for students who maintained satisfactory academic progress. Three years after the lotteries, winners were about 10 percentage points more likely to have finished 8th grade, primarily because they were less likely to repeat grades, and scored 0.2 standard deviations higher on achievement tests. There is some evidence that winners worked less than losers and were less likely to marry or cohabit as teenagers. Benefits to participants likely exceeded the \$24 per winner additional cost to the government of supplying vouchers instead of public- school places.

### **Achievement Evaluation of Colombia's Escuela Nueva Is Multigrade the Answer?**

Psacharopoulos, G., Rojas, C, & Velez, E. (1992) World Bank Policy Research Working Papers 896

[http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/1992/04/01/000009265\\_3961002224506/Rendered/PDF/multi\\_page.pdf](http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/1992/04/01/000009265_3961002224506/Rendered/PDF/multi_page.pdf)

*Escuela Nueva* is a rural school in which one or two teachers offer all five years of primary education in one or two multigrade classrooms. It was created in Colombia, in 1976, to improve rural schools. 2000 schools were involved by 1982. In 1987, the authors found that *Escuela Nueva* had significantly improved student outcomes compared to a control group.

### **Mid-Term Assessment Survey: An Appraisal of Students Achievement**

Prakash, V et al. (1998) NCERT, New Delhi, Published by Educational Consultants India Limited

<http://www.educationforallinindia.com/page99.html>

The District Primary Education Programme (DPEP) in India was initiated in 1994 and evaluated after three years. Tests were administered during the initial survey in the year 1994 and then re-administered to the students of five schools that were randomly selected from the sample

Key results:

- Performance in language for class 1 has shown positive trends in 28 out of the 42 districts. Of the 28, 19 were statistically significant.
- For class 1 maths, 33 out of 42 districts displayed positive trends, 30 districts were statistically significant.
- Comparative analysis of achievement for language in class 3 revealed 13 out of 15 states demonstrated positive trends, 12 were statistically significant.
- Class 3 maths performance showed positive trends in 11 out of the 15 districts, 9 were statistically significant.
- Class 4 language performance showed positive trends in 18 out of 27 districts, 15 were statistically significant.
- Class 4 maths results improved in 18 out of 27 districts, 14 were statistically significant.

Decline in test results in some states was partly attributed to differences in syllabi.

### **New Horizons for Primary Schools, Jamaica. Formative Evaluation 2002.**

Chesterfield, R., Enge, K., & Simpson, H., 2002. USAID.

[http://pdf.usaid.gov/pdf\\_docs/PDABY194.pdf](http://pdf.usaid.gov/pdf_docs/PDABY194.pdf)

The New Horizons for Primary Schools (NHP) project in Jamaica ran from 1997-2004 with funding from USAID of \$10,200,000. NHP aimed to improve the Mathematics and Language arts of Jamaican primary school students, who because of poverty or other factors have had little success in school. NHP has been most successful in improving the near mastery levels of Mathematics. NHP students have improved over the baseline in 1998 in both third and sixth grade and the improvement has been greater than that for children in the system as a whole. NHP students also have higher mean scores in Mathematics in 2002 than a matched comparison group of schools. Language Arts mastery appears to be a problem for the Jamaican primary education system as a whole. There is a general decrease in Language Arts performance in 2002 at both third and sixth grade levels. This follows a decline in the percentage of students reaching at least near mastery in 2001. The success of NHP in improving student performance is questionable. Although NHP students have improved in their mastery of Language Arts and Mathematics over the baseline in 1998 to 2002, this improvement is only slightly higher than that of similar schools without the NHP program over the same time period.

### **Summative Evaluation of USAID/Malawi's Girls Attainment in Basic literacy**

Herbert, P., Millsap, W. & El-Sanabury, N., 2002. The Mitchell Group Inc.



[http://pdf.usaid.gov/pdf\\_docs/PDABW640.pdf](http://pdf.usaid.gov/pdf_docs/PDABW640.pdf)

The GABLE (Girls' Attainment in Basic Literacy and Education) II programme was initiated in 1994 and ran until 2002. The programme strategy was to support the development of an environment in which the majority of children were learning. The strategy was to work simultaneously on creating a policy environment to develop sustainable and effective schools and classroom practica, while putting into wider practice innovative and effective interventions at the community level that inform policy analysis and system reform strategies.

Total number of students passing the Primary School Leaving Certificate Exam increased from 98,923 in 1997 to 109,002 in 2000. Pass rates, however, showed no particular trend.

### **Structuring Possibilities in the Classroom: Evaluation of a Prescriptive Instructional Reform Program for an Impoverished Educational Environment**

Snyder, C.W., 2000. Harvard Development Discussion Paper.

<http://www.cid.harvard.edu/hiid/739.pdf>

The Namibian Basic Education Support (BES) Project undertook the monumental task of creating and implementing a new grade 1-4 instructional program in mathematics, environmental studies, and local languages' literacy in less than five years. Little time, few resources, almost no local technical talent, weak leadership, and general resistance to the idea of Systematically-Designed, Structured Instructional Materials (SIMs) characterised the reform environment. The scripted SIMs were aimed at improving teacher and instructional effectiveness in contexts typified by under-educated and underqualified teachers and resource-poor instructional programs. Evaluation results indicated that SIMs helped teachers in their classroom methods and produced higher student attainment in mathematics and environmental studies in grade 1 and grade 2. Results were achieved within one year.

### **A Healthy Child in a Healthy School Environment. A look at the CHANGES Program in Zambia**

Robison, W., 2004. Creative Associates International.

<http://www.beps.net/publications/ZambiaCHANGES.pdf>

USAID funded the Communities Supporting Health, HIV/AIDS, Nutrition, Gender, and Equity Education in Schools (CHANGES) program—a multi-sectoral education program, initiated in 2000. CHANGES worked with the Zambian Ministries of Education, Health (MOH), and Community Development and Social Services (MCDSS) to develop the School Health and Nutrition (SHN) component, a first step in the development of a national school health and nutrition policy and the integration of health interventions and education in Zambian schools.

When the Zambian Cognitive Assessment Instrument (Z-CAI) was administered in 2001 and 2002, it demonstrated that students in the intervention group performed better than those in the control group. This result occurred even though the intervention group started out with much lower scores than the control group. Over the course of the intervention year, the group's performance improved dramatically. The cognitive testing after the second and third year also showed remarkable results. After treatment for worms and bilharzia, scores improved markedly, showing a clear connection between students' improved health and improved cognitive ability. The results are corroborated by teachers' anecdotal evidence: students in intervention schools attend school more regularly, and when in school are more alert, participate more actively, and perform better on tests.

### **Active Schools. Our Convictions for Improving the Quality of Education**

Mogollon, O. & Solano, M., 2011. FHI 360.

[http://www.epdc.org/sites/default/files/documents/Active\\_Schools.pdf](http://www.epdc.org/sites/default/files/documents/Active_Schools.pdf)

The New Unitary School Program, known as NEU (Nueva Escuela Unitaria) in Spanish, was implemented in 200 schools from 1991 to 1997 as a component of the USAID-funded BEST (Basic Education Strengthening) Project in Guatemala. Half of the schools in the NEU project served Mayan children and half served Ladino children. The Model School Project in Nicaragua began in 1997 as part of the USAID-funded BASE Project. It began with 26 multi-grade schools and had 51 schools in 2002.

In Guatemala, data are from mean scores of the national testing program carried by the Universidad del Valle for the Ministry of Education. Results are reported from 1998 and 2001. NEU students had lower test results than did the comparison group in the first year of testing. However, both NEU boys and girls made greater gains in achievement than did the comparison group in all areas tested. NEU girls had higher mean scores in each area at the end of testing than did girls in comparison groups.

The Aprende Project, in the department of San Martín in Peru, sought to improve the academic performance of students in small rural schools and support the policy of educational decentralisation by encouraging local participation in school decision-making. The USAID-funded project began in 2004 in 70 schools and added an additional 70 sister schools the following year. The project is still in operation.

To have a program-level measure for tracking, all students reaching mastery on the tests in first, third and sixth grade were aggregated and divided by the population of students taking the tests in Aprende schools that began the program in 2004, or Pioneer Schools; in Sister schools that began the program in 2005; and in comparison schools without the Aprende program. Project schools have consistently had higher overall mastery levels than have the comparison schools. Since 2006, the difference in mastery between the two groups was at least five percentage points. The Aprende schools also had at least 10 percent fewer students at the lowest level of mastery throughout the implementation period.

#### 4. Impact of Education for All

##### **Is There A Quantity-Quality Trade-Off As Enrollments Increase? Evidence from Tamil Nadu, India**

Duraisamy, P., James, E., Lane, J.I. & Tan, J. (1997) Policy Research Working Paper 1768, Policy Research Department and Human Development Department, World Bank, Washington, DC.

<http://elibrary.worldbank.org/docserver/download/1768.pdf?expires=1363949606&id=id&accname=guest&checksum=AE5EFD181E55D6AF1BFD2B89B5B0742E>

Authors document sustained and rapid enrolments in Tamil Nadu since the 1970's, due to state government policies. Between 1977 and 1992 the number of candidates for the tenth grade examinations grew by 73 percent for the state as a whole, from a base of nearly a quarter million candidates (Table 5). During the same period the number of passes rose by 118 percent, lifting the pass rate from 54 percent in 1977 to 69 percent in 1992. Much of the improving trend in pass rates reflects the above average performance of the increasing proportion of female candidates.

Pupil-teacher ratios were found to exert a negative influence on examination passes: holding number of candidates constant, every additional pupil in the class held back the growth in passes by 1.2- 1.5 percentage points, depending on specification. Between 1977 and 1992, the state-wide average middle school pupil-teacher ratio rose by 12 pupils, from 35 to 47. According to regression estimates, the number of passes on the tenth grade examinations in 1992, relative to the number in 1977, would have been 15-18 percentage points higher if the

1977 pupil-teacher ratio had been maintained. That implies the percentage of candidates passing the examination in 1992 would have been 73 percent instead of 68 percent.

On balance, the available evidence implies that enrolment growth has had the primary impact of increasing the number of students who take and pass the exam, but the concomitant decline in school conditions, as reflected in dramatically rising pupil-teacher ratios, has had a partially counteracting negative effect on student performance.

**Passes and pass rates on the 10th grade examination, Tamil Nadu, selected years 1977-92**

	1977	1986	1989	1992
Number of passes	131,677	179,763	207,056	288,203
Pass rate	54%	57%	57%	69%

**Status and Trends 2000. Assessing Learning Achievement.**

Fiske, E. (2000) Report of UNESCO for the International Consultative Forum on Education for All.

<http://unesdoc.unesco.org/images/0011/001198/119823e.pdf>

Very few longitudinal data are available to indicate whether the academic performance of primary-school pupils in developing countries has improved since the Education for All Conference in Jomtien in 1990. Evidence from some countries suggests that it has.

In India, for example, the District Primary Education Programme, launched in 1994 in forty-two districts across seven states, established benchmarks for achievement in language and math at the conclusion and the penultimate year of the primary schooling cycle. An assessment was then carried out (4 years later) using a sample of 66,831 pupils to determine whether their achievement had improved. The results showed that substantial majorities of districts improved performance in both subject areas and at both grade levels.

Some countries have reported no change. As part of its SACMEQ project, Zimbabwe set out to determine whether there had been any recent improvement in the literacy levels of Grade 6 pupils. Researchers identified thirty-six test items that were common to a 1991 IIEP study and the 1995 SACMEQ survey, and used these items to compare the performance of pupils. The results are shown in Figure 7. The researchers reported 'no significant changes in the mean scores of Grade 6 pupils.' Researchers said that, since the base scores were 'already very low', the lack of progress warranted a 'major enquiry' by the Ministry of Education and Culture. Other scholars have suggested, however, that, given structural changes that were affecting the country during that period, the fact that scores did not decline should be viewed as a positive sign.

One important lesson from cross-national studies is that achievement differences between regions within countries tend to surpass those between countries.

## Financing primary education for all: public expenditure and education outcomes in Africa

Al-Samarrai, 2003. IDS.

<http://r4d.dfid.gov.uk/pdf/outputs/forall/paper57.pdf>

In country case studies of Uganda, Botswana and Malawi, primary school expansion has led to a deterioration of learning outcomes at the primary level. This is perhaps unsurprising given that primary school expansion has meant increased access for lower socio-economic groups and learning outcomes are influenced partly by socio-economic status.

## A Millennium Learning Goal: Measuring Real Progress in Education

Flimer, D., Hasan, A. & Pritchett, L. (2006) CGD Working Paper 97

[http://international.cgdev.org/sites/default/files/9815\\_file\\_WP97.pdf](http://international.cgdev.org/sites/default/files/9815_file_WP97.pdf)

The authors demonstrate that even in countries meeting the MDG of primary completion, the majority of youth are not reaching even minimal competency levels, let alone the competencies demanded in a globalised environment. Even though Brazil is on track to meet the MDG, estimates are that 78 percent of Brazilian youth lack even minimally adequate competencies in mathematics and 96 percent do not reach a 'reasonable global standard of adequacy'. Mexico has reached the MDG—but 50 percent of youth are not minimally competent in math and 91 percent do not reach a global standard. While nearly all countries' education systems are expanding quantitatively nearly all are failing in their fundamental purpose. Policymakers, educators and citizens need to focus on the real target of schooling: adequately equipping their nation's youth for full participation as adults in economic, political and social roles.

## 5. Comments from specialists

### Noor Iqbal, Policy Analyst, Poverty Action Lab

*Short-term programs can improve learning outcomes:* Research by J-PAL affiliates suggests that pedagogical changes, such as a shift in focus towards basic education, can make quick progress in improving learning outcomes, often in just a matter of weeks. A month-long reading marathon—Read-a-Thon—in the Philippines that encouraged the use of age-appropriate reading materials led to an increase in the number of books students read as well as an improvement in reading scores ([Abeberese et al, 2013](#)). These positive effects persisted after the end of the program. Three months later, students in the treatment group still read more books and scored higher on reading tests relative to those in the comparison group. In India, programs that trained school teachers and local volunteers to work with low performing students in reading camps held after school and over the summer significantly improved reading skills and test scores over 1-3 months ([Banerjee et al, 2010](#)).

It is worth noting that the programs described above actually changed the learning environment rather than the types of inputs available to students. There is little evidence that traditional inputs alone, without other changes in the learning environment, have much of an effect on learning. Randomized evaluations of textbooks and flipcharts in Kenya failed to find an effect on learning for most students ([Glewwe et al 2009](#); [Glewwe et al. 2004](#)), with the exception that textbooks increased test scores for already higher-performing students. This suggests that giving students inputs they are not equipped to use—such as books they cannot read—is not an effective way to improve learning outcomes.

Similarly, in India, a program that provided schools with new or updated libraries as well as a trained librarian had no impact on students' reading scores, possibly due to the fact that students visited the library only a few times per month ([Borkum et al 2013](#)). Researchers

hypothesize that providing access to reading materials may be more effective in combination with changes in pedagogical strategies for teaching reading skills.

Program effects can diminish over time: Though some education programs can achieve significant improvements in a short amount of time, test score gains obtained from education interventions can fade out fairly quickly once a program ends. For example, while the effects of the Read-a-Thon program from the Philippines persisted, the impact on reading activity and test scores was cut in half over the three months following the end of the program. In order to sustain the long term gains in reading skills, researchers suggest pairing interventions like the Read-a-Thon with other programs that encourage teachers to maintain a long-term focus on reading.

Similarly, in India, the impacts of a computer-assisted learning program (0.47 standard deviations) and a remedial education program (0.28 standard deviations) remained significant but faded out to about 0.10 standard deviations one year after the programs had ended ([Banerjee et al, 2007](#)). Researchers recommend sustained follow up to better understand the long-term cognitive and labor market effects of these programs.

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### **Luis Crouch, Global Practices Team Coordinator, Global Partnership for Education**

I think the first point I'd make, based on my personal experience as well as review of some key case studies, is that one cannot answer this in general terms. One has to specify what the scope is.

If the scope is to improve all learning outcomes, in all grades, say, at national scale, it can easily be a 5-10 year time lag between changes in inputs and policies and visible, measurable results. That's one extreme. And, caution would suggest closer to 10 years if one is really talking about most subjects and most grades.

Now let's take another extreme. To see learning outcomes impacts in a large pilot, but nonetheless a pilot, in one or two subjects, in one or two grades (say, early grades literacy and mathematics, defining early grades as, say, 1-3), one should see pretty significant impact of changes in inputs and teaching practices (including lesson plans, time on task, usage of good learning materials) in at most 2 years, and, really, there should be some visible and certain results within 6 months to 1 year of the start of classroom-level implementation. (Not 6 months of overall activity start-up, which may include preliminary activity such as design of improved lesson plans, but 6 months after actual initiation of classroom-level implementation.)

Then one can reason between those extremes. Something with a scope closer to the first extreme will take closer to 10 years. Something closer to the other extreme should show really significant results in at most 2 years, and some visible results in 6 months to 1 year. If there are not visible results within 1 year, this should NOT be considered normal. If there are no visible results within 1 year, one needs to re-think what one is going, because a good program (of a pilot scope and in just a few grades and limited subjects) should at least some results within 1 year.

### **Paul Glewwe, Professor, University of Minnesota**

There is no simple answer to that question. It depends on the education input and the education policy. Regarding inputs, some work quite quickly (within a few months), such as conditional cash transfers, providing deworming medicine and probably providing eyeglasses to children (but more evidence is needed on the eyeglasses). Others never work at all, and others can take time to have an effect (e.g. changing how teachers are trained). Almost by definition, education policy changes would take much longer to implement (often years).

## **8. Additional information**

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