

Evidence Matters

What works, what doesn't work, and why: A briefing for decision-makers.

Quality education for all children?

Despite significant progress over the last few decades, 61 million children remain out of school, around half of whom live in Sub-Saharan Africa. Quality of education in schools is often abysmal. In response, governments and donors, as part of their commitment to achieve Education for All by 2015, pledged that the priority is not only to get children into school but also provide them with quality education and respond to their learning needs.

What is most effective in getting children into school, keeping them there and ensuring that they learn? There is huge diversity in the 75 studies analysed in a recent 3ie review, including the ways in which each intervention tries to influence behaviour and improve schooling. Interventions tackle both the supply and demand side, for example some are aimed at teachers or schools to improve the delivery of education, while others are targeted at children, providing scholarships, uniforms, deworming pills or food (Figure 1). The message is encouraging: overall programmes get children in school and improve learning. But of course, some work better than others.

Key findings

Overall interventions to get children into school, stay there, and learn whilst there have worked.

But some things work better than others, and different interventions work for different outcomes. What helps children learn is different to what gets them into school. For example:

- Conditional cash transfers increase school enrolment and attendance, but have no overall impact on children's test scores.
- School fees subsidies improve enrolment and progress in school, while merit-based scholarships increase learning.
- Distributing teaching and learning aids in school has no impact on school attendance and language test scores of children. However, computer-based learning offered in addition to the regular school curriculum has positive impacts on mathematics test scores.
- Doing a cost-benefit analysis of programmes would allow policymakers to compare programmes more easily, and also make informed choices about which interventions to launch.

At a glance

This issue of *Evidence Matters* is based on 3ie working paper 20, *Quality education for all children? What works in education in developing countries* by Shari Krishnaratne, Howard White and Ella Carpenter. The authors conducted further analysis of data and findings from a systematic review that looked at schooling outcomes, *Interventions in developing nations for improving primary and secondary enrolment of children* by Anthony Petrosino, Emily Tanner-Smith, Claire Morgan, Trevor Fronius and Robert F. Boruch, as well as additional studies of education interventions addressing learning outcomes.

On page 4, Howard White provides his views on the value of drilling down in the data from systematic reviews. Their approach allowed them to draw out policy recommendations and provide useful direction and advice for programme design and implementation.

Systematic reviews provide an unbiased assessment of what works and why by identifying relevant studies and synthesising quantitative and qualitative evidence. Using rigorous and transparent methods, they include published and unpublished research relevant to the research questions and synthesise the findings in a way that is easily accessible to decision-makers and practitioners.

Conditional cash transfers encourage attendance and progress. But what about learning?

Handing out cash on the condition that children enrol and attend school has been found to be particularly effective, especially for children coming from the poorest families.

Over 30 countries around the world are implementing conditional cash transfers (CCTs). Evidence from programmes in Argentina, Ecuador, Honduras, and Mexico show CCTs to have positive effects on enrolment of children in schools. However, it is important to understand the conditions in which CCTs work.

Evidence from 23 evaluations show that CCTs have significant effects in increasing school enrolments and attendance amongst the poorest children, but no overall impact on learning. Argentina is one of the few exceptions. Children there spent an extra year in school, had higher scores and were less likely to repeat grades.

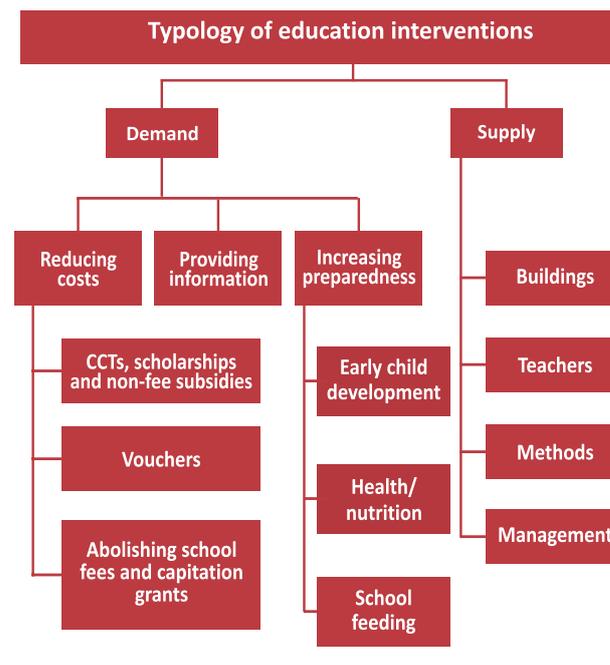
School fee subsidies improve enrolment, attendance and progress in school, while merit-based scholarships increase learning

Subsidising or eliminating school fees has a similar impact to that of CCTs. Following the abolition of school fees, enrolment in Uganda rose by 73 per cent in one year, and enrolments in Malawi doubled. Free education in Uganda reduced late enrolment in primary school and children were more likely to complete their schooling. In South Africa, a similar intervention had no impact on enrolment in primary school. It increased enrolments in secondary schools for children belonging



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Figure 1: Supply- and demand-side approaches to education



to poorest households because the fee was low and enrolment was already high in primary schools.

On the other hand, scholarship programmes, such as the Achievement Awards in Israel, the Ningshan tuition relief programme in China or the merit-based scholarship in Kenya, increased children's test scores. Voucher schemes are another means of reducing the cost of education, but the limited evidence shows no effect on enrolment or learning.

Additional learning materials or teaching aids = better test scores in mathematics

Programmes providing additional teaching aids and resources, employing new pedagogies and pacing lessons for children with different learning abilities have shown encouraging results. Provision of basic learning materials such as textbooks, posters, flip charts and chalkboards has helped enhance student performance.

Computer-aided learning was especially useful in engaging children and improving their test scores in mathematics. In China, children's scores improved in just one term from playing mathematics games on a computer for 40 minutes, twice a week, to supplement their regular lessons. In India, two different computer-based education projects also increased test scores in mathematics. But, no effect was seen on school enrolment and attendance.



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Other promising interventions

Employing additional teachers and increasing teaching time has improved children's grades. Drawing new teachers from the local community, who speak the local language, can help facilitate greater interaction with students and promote better learning. In Kenya, pupils taught by locally contracted teachers showed a significant increase in test scores as opposed to children taught by regular teachers, partly due to the increase in attendance of both students and teachers. Further, the presence of female teachers in schools was found to encourage enrolment of girls in Pakistan.

The 3ie working paper (Krishnaratne et al. 2013) also concluded that setting up new schools or upgrading facilities has significantly improved enrolment and attendance. These programmes also succeeded in reaching girls and disadvantaged children living in remote areas. However, there is little evidence on the cost effectiveness of these programmes and what complementary interventions are required for the schools to promote quality education.

Early childhood development programmes have increased school enrolment of children and enhanced cognitive abilities for preschoolers, leading to greater preparedness and improved grades in primary school. In Jamaica, an intervention targeting stunted children improved children's test scores and reduced school dropouts significantly.

School-feeding programmes have shown to increase enrolments and attendance and lower dropouts, but with limited improvement in learning. School meals

provide incentives for parents to send their children to school, acting as a conditional non-cash (in-kind) transfer. However, in many cases, the food rations are not sufficient in terms of nutritional intake or may not be suitable to local taste.

Overall, health interventions have shown mixed results. Malaria treatment programmes reduced student absenteeism in Sri Lanka and Malawi, but not in Kenya. While deworming has been promoted for increasing school enrolments, a recent review (Taylor-Robinson et al. 2008) casts doubt on this relationship.

Community-based management of schools through information on school performance or direct monitoring of teacher performance has improved test scores in India, Kenya and Madagascar. It is, however, unclear whether this improvement resulted from the involvement of parents in the management of the school or from additional resources made available during the intervention.

Addressing gaps in evidence

A successful education programme is one that delivers quality education and is cost effective at scale.

However, the challenge is that evidence on both learning outcomes and cost-effectiveness remains limited. Most studies measure enrolment, retention or attendance, and rarely assess the cost-effectiveness of successful interventions. When resources are constrained it is important for policymakers to be able to compare interventions not only in terms of desired outcomes but also how much it costs to implement one.

Viewpoint by Howard White

Howard White is Executive Director, 3ie and Adjunct Professor, Alfred Deakin Research Institute, Deakin University

Programmes to get children into school, and stay there, work. This finding is a welcoming reply to the general development pessimism pervading much discussion of aid and development in general. What's more, interventions also work in improving learning outcomes, a finding which confronts the view that we have expanded education, but children do not learn anything in school.

The vast majority of rigorous impact evaluations of education show positive impact on schooling outcomes. This is an important message for policymakers and education practitioners as 2015 is fast approaching, and the goal of achieving universal primary education could be in our grasp. But what policymakers and aid agencies urgently need to know is which programmes are effective at raising schooling outcomes. Which ones are most cost effective? Where should efforts be channelled over the next few years? To answer these questions, we need to drill down into the data to see which types of programme make the most difference.

In our review of existing evidence, we identified seven different types of demand-side programmes which encourage parents to send their children to school by reducing education costs, providing information on returns to schooling and increasing children's school preparedness and four different types of interventions to improve supply through new and better schools, more and better trained teachers, teaching resources and improved school management.

From analysing the data, we can say the following about learning outcomes:

- Conditional cash transfers, such as the well-known *Oportunidades* programme in Mexico, work at getting children into school. They also help to reduce dropout and improve students' progression. But there are too few studies measuring direct learning outcomes to conclude an effect on learning.

- Health interventions, such as the deworming programme in Kenya, do increase attendance. But evidence of their impact on student performance is not promising. There are too few studies to be conclusive, but when there is evidence, the results do not look good.
- Providing additional materials, including computer-assisted learning, does not affect school attendance. However, it does improve learning outcomes for mathematics, but not for other subjects.

Controversial programmes, such as vouchers to enable poor parents to send their children to private schools, have been rarely evaluated in developing countries. There is a need for policymakers to commission more evaluations in this area.

An important lesson emerging from our review is that evidence-informed policymakers do not want to know what works. They want to know the most cost-effective means to achieving the desired outcome. Too few impact evaluations contain data on costs. A new school in Afghanistan's remote rural areas boosted girls' enrolment and improved their mathematics scores, but the cost of this programme is likely to be significant. Only with cost data and cost-benefit analysis will we be able to compare programmes more easily and make informed choices about which intervention to launch.

Our review - the first one to carry out a systematic investigation into schooling outcomes - is a welcome kick start to the debate on what really works in the education sector in developing countries. But learning about the general effectiveness of education interventions is not enough. Policymakers and researchers need to work together to collect more data and further analyse and consolidate what we have learned.

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