

## Food for thought: Are school feeding programmes effective in improving educational outcomes?



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### Overview

Existing evidence: School feeding leads to better educational outcomes, though results are more positive for school enrolment and attendance than for cognitive performance.

**Key words: Education, School feeding, Enrolment**

### Mind the gap

The Millennium Development Goal of Education for All by 2015 will only be achieved in full if enrolment rates are complemented by primary and secondary school completion rates, particularly in sub-Saharan Africa and South Asia. However, poverty and hunger coupled with socio-cultural norms and supply constraints impede progress.

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Early malnutrition or micronutrient deficiencies can adversely affect physical, mental and social aspects of child health. They have been linked not only to lower enrolment and completion rates but also to poorer cognitive functioning in those children attending school (Harbison & Hanushek, 1992; Glewwe & Jacoby, 1994; Moock & Leslie, 1986). Direct causal impacts of nutrition on educational performance are harder to come by. Glewwe et al. (2001) find that better-nourished children both start school earlier and repeat fewer grades.

In rural Pakistan, Alderman et al. (2001) find that malnutrition decreases the probability of ever attending school, particularly for girls. An improvement in nutrition was found to increase school initiation by 4 per cent for boys but 19 per cent for girls. As the average girl (boy) in the villages studied who begins school competes 6.3 (7.6)

years of schooling, improvements in nutrition would have a significant effect on schooling attainment.

School feeding programmes providing breakfast, lunch, snacks or take-home rations are sometimes combined with micronutrient supplementation and have been implemented in most of the developing world, representing a huge investment of resource.

## Bobonis et al. (2004) establish through randomised trials that a deworming and iron supplementation programme in India reduced pre-school absenteeism by one-fifth

### Lessons learned

Many studies evaluating the educational outcomes of school feeding programmes are limited by post-programme data collection, despite the relative ease of establishing control groups and using enrolment and attendance rates with test scores to determine impacts. However, there are a number of studies that do establish a clear link between school feeding and enrolments, and some showing also an impact on learning outcomes.

The Campbell review on school feeding (Kristjansson et al., 2007) is the most comprehensive and rigorous review of impact evaluations to date. It comprises 18 studies, 9 from lower income countries and 9 from higher income countries. Amongst the 18 studies, 7 used randomised controlled trials (RCTs), 9 controlled before and after studies (CBAs) and 2 interrupted time series (ITS). In low income countries, children who were fed at school attended school more frequently 4 to 6 days a year per child as opposed to the children in control groups. Children who were fed at school also did better than those in control groups on math achievement tests, consistently so in lower income countries, and on some tasks requiring rational psychological processing of information). There is also evidence that school meals may have small physical, psychological and social benefits for disadvantaged children.

Kristjansson et al. (2007) note that other reviews of the educational outcomes of school feeding programmes report mixed results. Overall they indicate school-feeding programmes increase attendance, particularly in rural low-income schools in developing countries, and improve cognitive performance at least in the short term (Grantham-McGregor, 2005; Levinger 1986). But most reviews are limited in scope, often poorly designed and non-systematic (Kristjansson et al., 2007).

An analysis from the World Food Programme's Food for Education programmes, which provided food to 21.7 million children in 74 countries in 2005 (WFP, 2006), finds a 14 per cent yearly increase in school enrolment for both boys and girls in 4,175 WFP-assisted schools in 32 sub-Saharan African countries (Gelli, 2006). The study used a cross-sectional quantitative analysis.

40 per cent of WFP-assisted programmes also provided micronutrient supplementation to children, most commonly to correct Vitamin A, iodine or iron deficiencies known to impair cognitive function and school achievement (WFP, 2006).

Taras (2005) reviews research on micronutrient supplementation, finding iron therapy appears to improve cognitive performance whereas zinc and iodine therapy does not, and there is no evidence population-wide vitamin and mineral supplementation leads to improved academic performance. Ahmed (2004) uses a mixed cross-sectional survey and a retrospective CBA to evaluate Bangladesh's School Feeding Programme, which provides a mid-morning snack of fortified wheat biscuits to one million children. School enrolment was boosted by 14.2 per cent, attendance increased by about 1.3 days a month, and the probability of dropping out was reduced by 7.5 per cent. Academic performance also improved, with test scores boosted by 15.7 per cent points. Participating students do especially well in mathematics, scoring 28.5 per cent more than those in the control group.

Studies (RCTs) in both Kenya and India have found a significant impact from deworming on school attendance, thus contributing to completion. Absenteeism fell by one quarter in the Kenyan study (Miguel and Kremer, 2004) and one fifth in India (Bobonis et al., 2004).

### Closing the evaluation gap

Areas that need further investigation include what kinds of school feeding programmes are most effective, with comprehensive reviews similar in design to Kristjansson et al. (2007). They could also evaluate micronutrient supplementation programmes, expanding to include interventions that could have an impact on educational outcomes, such as those outlined in WFP's Essential Package interventions for school children (WFP, 2006).

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## **Credit**

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