



Improving children's education and maintaining food security are primary goals of governments and donor organizations around the world, especially in the context of developing countries. One type of intervention addresses both challenges at once: school feeding programs. In response to a question from a policymaker in Benin, this document presents evidence on the effects of these interventions. The findings in this document were drawn from a high-quality systematic review which combined the evidence from 16 studies on school feeding programs conducted in Africa, Asia, and Latin America. The interventions provided an in-school meal to students, which was either breakfast, lunch or a snack.

What is the impact of school feeding programs on students' results?

Key Findings

- School feedings programs increased students' attendance rates.
- Language arts and math test scores increased after school feeding programs were implemented.
- Tentative evidence suggests the programs also increased enrollment and reduced dropout rates.
- Effects were larger in contexts of high food insecurity and low school participation.
- Meals varied widely in size and quality between programs. The smallest, a single egg, was ineffective.

Key Recommendations

- School feeding programs should be implemented to encourage attendance and improve student performance.
- Implementing school feeding programs yields the greatest impact when implemented in contexts of high food insecurity and the food supplies adequate nutritional content.

What is the impact of school feeding programs on students' results?

Background

West African nations face substantial challenges in ensuring quality education and food security for their residents. In Sub-Saharan Africa, nearly 1 in 5 school-aged children is not in school, according to UNESCO data. Also, in West Africa, nearly 40 million people will face food shortages in the summer of 2020, according to the World Food Program.

School feeding programs are a type of intervention which aims to address both challenges. They are implemented around the world with several goals: improving child health, providing a safety net for vulnerable families, and helping students learn.

Details of interventions

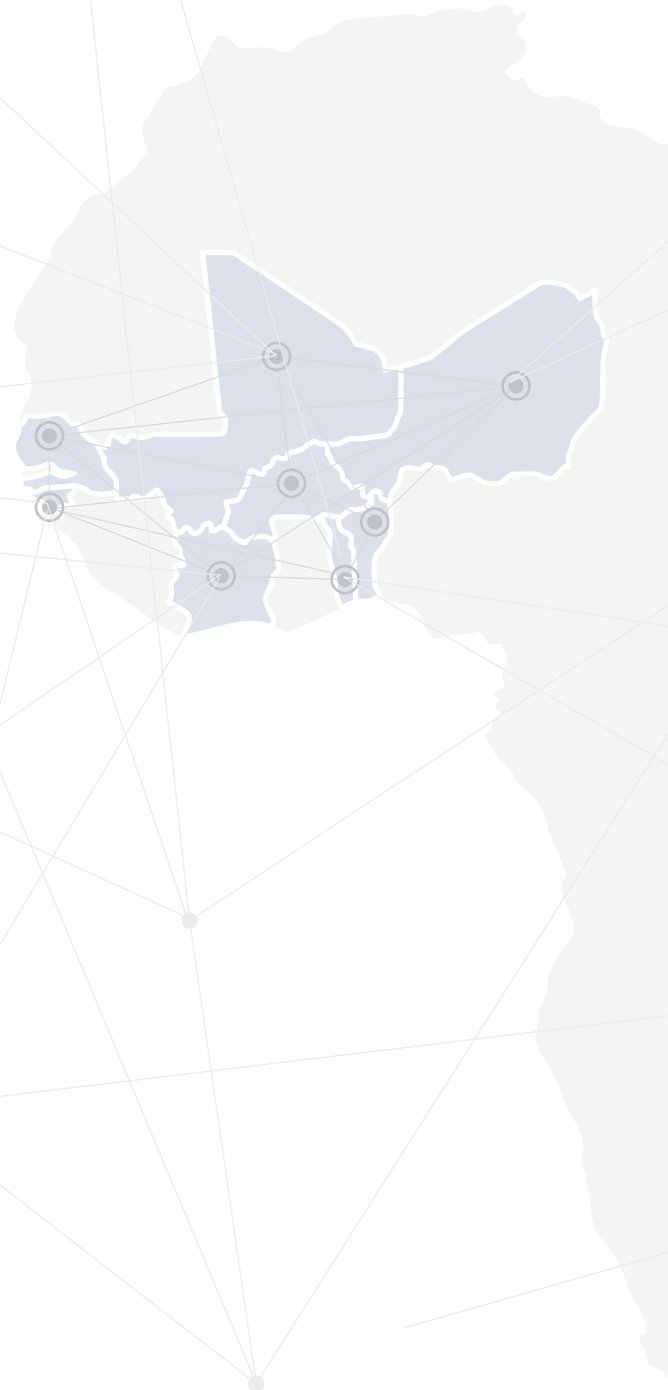
All the 16 interventions discussed in this brief provided a meal or a snack to primary school students. Two of the programs also provided meals to students in early secondary school. Some of the interventions provided breakfast, some provided lunch, some provided a mid-morning snack, and some provided a meal and a snack. In addition to the in-school meals, some interventions also provided take-home rations on a monthly basis to contribute to household food supplies.

The nutritional content of the meals or snacks varied. The caloric content of the food ranged from a 240 kcal snack provided in a trial in Kenya to a 1000 kcal meal in a program in Chile. The food is sometimes fortified with essential minerals or vitamins, as is recommended by the World Food Program.

School teachers or local community members were responsible for implementation of the program in most cases. In some places, the World Food Program supplied food and parents were required to form a committee, pick up the food, store it, and prepare it. In other places, funding was provided and parents purchased the food before preparing it themselves. In a smaller number of cases, food preparation was outsourced to external providers or private companies.

Five studies were conducted in Latin America and the Caribbean; four were conducted in South Asia; four were conducted in East Asia, and three were conducted in Sub-Saharan Africa. These contexts differ in their levels of food insecurity. Some of the studies were also conducted during spikes in food prices, a time of raised food insecurity for many families.

Some of the studies focused on attendance or enrollment outcomes, while others focused on achievement outcomes like test scores. Not all studies measured all types of outcomes.



What is the impact of school feeding programs on students' results?

Findings

Programs providing food in schools yielded positive effects on student attendance, language arts test scores, and math test scores. For these three outcomes, statistical meta-analyses showed significant positive effects. The studies also suggest that the programs raised enrollment and reduced dropout rates, although this evidence is more tentative. The effects were larger in contexts where food insecurity was higher.

Six studies investigated how school feeding programs affected attendance. Five of the six studies found higher attendance after school feeding programs were implemented. These studies took place in Burkina Faso, Cambodia, Guyana, Jamaica, and Kenya. The only country in which attendance did not rise was Chile, a context in which food insecurity is relatively low. In Burkina Faso, two versions of the program were implemented, one with additional take-home rations and one without. The version with take-home rations raised student attendance more than the version without.

Eight studies investigated how school feeding programs affected language arts test scores. Six of the eight found higher scores after the programs were implemented. Scores improved in Argentina, Guyana, Kenya, the Philippines, Peru, and Senegal. Only programs in Chile and Jamaica did not yield positive effects.

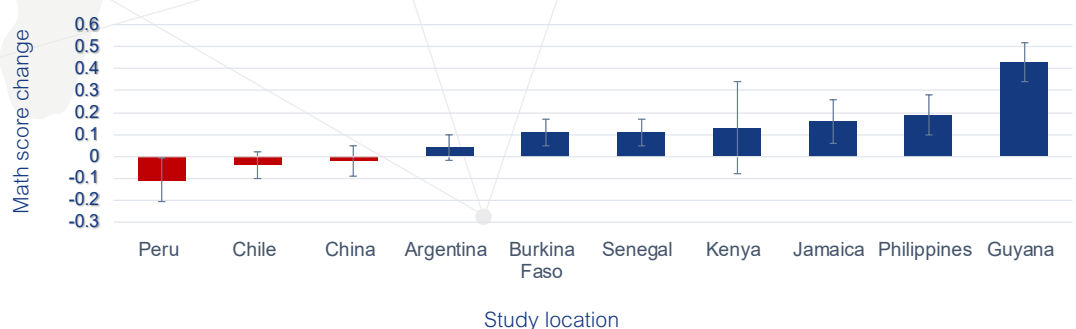
Ten studies investigated how school feeding programs affected math test scores. Seven of the ten studies found higher scores after the programs were implemented. These studies took place in Argentina, Burkina Faso, Guyana, Jamaica, Kenya, the Philippines, and Senegal. Only programs in Chile, China, and Peru did not yield positive effects.

The largest positive effects occurred in contexts of high food insecurity. For example, some of the largest effects were observed in a study in Guyana, which conducted during the global food price shocks of 2007-2008. Similarly, the program in Kenya was studied during a drought which caused food shortages. On the other hand, the studies which did not show effects included a study in Chile, where school enrollment is high and food insecurity is low.

The meal also needs to supply adequate nutritional content. A program in a food-insecure context in China which provided only a single additional egg per day to each student did not produce measurable results.

Some evidence from India suggests that low local capacity and infrastructure can lead to implementation problems. On the other hand, local ownership over feeding programs may facilitate implementation. In a study in Sri Lanka, one feeding program which left implementation up to the local community yielded greater benefits than one which was centrally implemented by the World Food Program.

Math score change with school feeding program



Recommendations

School feeding programs should be implemented to encourage student attendance and raise test scores in language arts and math. Resources for school feeding programs should be focused on areas where food insecurity is high and school attendance is low, because the largest positive effects were observed in these contexts. Also, programs should be designed to facilitate local ownership of or participation in implementation, such as by having community members be responsible for meal planning and cooking. Finally, the meal should be adequately nutritious, as recommended by the World Food Program.

Evidence quality, strengths, and limitations

These recommendations are based on a systematic review which synthesizes the results of 16 studies on school feeding which were conducted in low- and middle-income countries. Systematic reviews are more reliable than studies of single interventions, where location-specific issues can shape results. The studies in the review respond directly to the question in this brief, and two of them were conducted in West Africa (Burkina Faso, Senegal). For these reasons, this evidence is relatively strong. One weakness of the evidence is that most studies' follow-up periods were fairly short, between 9 and 24 months.

What is the WACIE helpdesk?

The WACIE helpdesk provides rapid synthesis and evidence translation to help policymakers in West Africa understand what evidence exists for specific policy questions. The helpdesk can also connect interested policymakers with further resources to meet additional needs. It is staffed by the WACIE Secretariat in Cotonou, with engagement from 3ie technical staff and other experts as needed.

To submit a policy question, or for additional information, contact wacie@3ieimpact.org.

What is WACIE?

The West Africa Capacity Building and Impact Evaluation (WACIE) program, a partnership between 3ie and the Government of Benin, was launched to help build evaluation capacity in the eight countries that comprise the West African Economic and Monetary Union (WAEMU): Benin, Burkina Faso, Cote d'Ivoire, Guinea-Bissau, Mali, Niger, Senegal, and Togo. Program goals include increasing evaluation capacity in targeted countries, ensuring that policymakers have access to relevant evidence, and promoting take-up of high-quality evidence by relevant stakeholders.

This Rapid Response brief is based on the following Systematic Review

Snilstveit, B, Stevenson, J, Phillips, D, Vojtkova, M, Gallagher, E, Schmidt, T, Jobse, H, Geelen, M, Pastorello, M, and Eyers, J, 2015. Interventions for improving learning outcomes and access to education in low- and middle- income countries: a systematic review, 3ie Systematic Review 24. London: International Initiative for Impact Evaluation (3ie).

More information, including a brief summary of the systematic review, is available here: <https://www.3ieimpact.org/evidence-hub/publications/systematic-reviews/interventions-improving-learning-outcomes-and-access>




The International Initiative for Impact Evaluation (3ie) promotes evidence-informed, equitable, inclusive and sustainable development. We support the generation and effective use of high-quality evidence to inform decision-making and improve the lives of people living in poverty in low- and middle-income countries. We provide guidance and support to produce, synthesise and quality assure evidence of what works, for whom, how, why and at what cost.

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