Evidence and Gap Map Research Brief

UNICEF STRATEGIC PLAN 2018–2021
GOAL AREA 2: EVERY CHILD LEARNS

What this research brief is about

This research brief is one of a series of five briefs, which provide an overview of available evidence shown in the Campbell-UNICEF Mega-Map of the effectiveness of interventions to improve child welfare in low- and middle-income countries (LMICs). These briefs summarize evidence as mapped against the five goal areas of UNICEF’s 2018–2021 Strategic Plan, although it is anticipated that they will also be useful for others working in the child well-being space.

This brief provides an overview of the available evidence related to education.

The purpose of the research brief is to:

- Make potential users aware of the map and its contents
- Identify areas in which there is ample evidence to guide policy and practice, and so encourage policymakers and practitioners to use the map as a way to access rigorous studies of effectiveness
- Identify gaps in the evidence base, and so encourage research commissioners to commission studies to fill these evidence gaps.

This brief is an update of the original 2018 version. Thanks to additional funding support from the Bill and Melinda Gates Foundation, this forms part of our commitment to make the Mega-Map and associated briefs a ‘living product’, updated annually and made openly available as relevant evidence evolves over the lifetime of UNICEF’s Strategic Plan 2018-2021.
Box 1: What is the Campbell-UNICEF Child Welfare Mega-Map?

The Campbell-UNICEF Child Welfare Mega-Map maps evidence synthesis studies – evidence and gap maps and systematic reviews – which report studies of the effectiveness of interventions to improve child welfare. The evidence is structured by intervention categories, such as education, nutrition and rights, and outcome domains, such as school attendance and learning outcomes.

Systematic reviews help establish which programmes are effective, for who, and in what circumstances. Evidence maps guide users to the evidence from systematic reviews and impact evaluations. The Mega-Map is an evidence and gap map (EGM) of 333 systematic reviews and 23 EGMs organized into six intervention categories and six outcome domains.

The map shows only evidence syntheses that summarize evidence from around the world. It does not show the individual studies. The map shows what evidence syntheses are available, not what the evidence says.


What interventions are included for child education?

In the UNICEF 2018–2021 Strategic Plan, the strategic goal that every child learns is touched on in two Sustainable Development Goals (SDGs):

- SDG 4: Ensure inclusive and quality education for all and promote lifelong learning
- SDG 5: Achieve gender equality and empower all women and girls

Interventions to ensure that every child learns are mainly in the education intervention category of the evidence and gap map, which has the following subcategories, divided here into three groups with an example of reviews for each subcategory.

SCHOOL SYSTEMS AND MANAGEMENT

- Decentralization and local community (26 systematic reviews and nine EGMs); e.g. Best (2013) The impact of national and international assessment programmes on education policy, particularly policies regarding resource allocation and teaching and learning practices
- Systemic renewal (six systematic reviews and five EGMs); e.g. Conn (2017) Identifying Effective Education Interventions in sub-Saharan Africa
- Alternative schooling/non-formal education (27 systematic reviews and six EGMs); e.g. Randolph (2014) Montessori Education for Improving Academic and Behavioral Outcomes Among Elementary Students

Figure 1: Number of studies for school systems and management by study quality

SCHOOL-BASED PROGRAMMES

- School voucher/reduced fees (11 systematic reviews and three EGMs); e.g. Baird (2013) Relative effectiveness of conditional and unconditional cash transfers for schooling outcomes in developing countries
- Scholarships (13 systematic reviews and three EGMs); e.g. Paruzzolo (2009) The impact of programs relating to child labor prevention and children’s protection
- School feeding programme and midday meal (13 systematic reviews and four EGMs); e.g. Kristjansson (2007) School feeding for improving the physical and psychosocial health of disadvantaged students
School-based health interventions (38 systematic reviews and nine EGMs): e.g. Welch (2016)
Deworming and Adjuvant Interventions for Improving the Developmental Health and Well-being of Children in Low- and Middle-income Countries

School sanitation and WASH (13 systematic reviews and six EGMs): e.g. Birdthistle (2011) What impact does the provision of separate toilets for girls at schools have on their primary and secondary school enrolment, attendance and completion

Figure 2: Number of studies for school-based programmes by study quality

Teacher Incentives (19 systematic reviews and six EGMs): e.g. Guerrero (2012) What works to improve teacher attendance in developing countries?

Teacher training (28 systematic reviews and seven EGMs): e.g. Aslam (2016) Reforms to Increase Teacher Effectiveness in Developing Countries: Systematic Review

Remedial education (16 systematic reviews and five EGMs): e.g. Maynard (2012) Indicated Truancy Interventions: Effects on School Attendance Among Chronic Truant Students

Pedagogical approach (39 systematic reviews and six EGMs): e.g. Orr (2013) What are the impacts and cost-effectiveness of strategies to improve performance of untrained and under-trained teachers in the classroom in developing countries?

Figure 3: Number of studies for teachers and teaching by study quality

Also relevant to every child learns is the intervention subcategory early childhood education and parenting in the early childhood intervention category (68 systematic reviews and seven EGMs); e.g. Spier (2016) Parental, Familial, and Community Support Interventions to Improve Children’s Literacy in Developing Countries (see Figure 4).

Figure 4: Number of studies for early childhood education and parenting by study quality

Most intervention categories are covered by a moderate number of reviews. There are more reviews for health – over 100 for the main intervention subcategories – and for early child development, with 50–100 reviews per intervention subcategory. However, the number of reviews for every child learns is higher than for most interventions in the other categories of environmental health and governance, including child rights.

Studies for every child learns are concentrated on the education interventions / learning and development outcomes section of the Mega-Map. There are 12 intervention subcategories and five outcome subdomains, so there are 60 cells. All but three of these cells contain...
studies. These three empty cells are all in the school water and sanitation intervention subcategory row. Study quality is assessed using the widely used AMSTAR quality assessment tool (see Endnote). There is a higher percentage of high-quality education reviews (54 per cent) than overall (40 per cent), but also a higher share of low quality ones (24 versus 20 per cent).

The evidence and gap map shows what evidence is there but not what it says. So, to give a taste of the evidence contained in the studies, Box 2 summarizes the evidence of selected studies, with a partial focus on cash transfers.

**Box 2: What works in primary and secondary education? Findings from selected reviews**

The sector-wide review published by the International Initiative for Impact Evaluation (3ie) reviewed evidence from about 216 education programmes and their effectiveness in improving school attendance and learning outcomes (Snistveit et al., 2016). The main findings are shown in the table below, identifying five classes of intervention as effective in improving attendance and four that improve learning outcomes.

<table>
<thead>
<tr>
<th>Children and households</th>
<th>Schools and teachers</th>
<th>Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Attendance</strong></td>
<td><strong>Learning outcomes</strong></td>
<td><strong>Attendance</strong></td>
</tr>
<tr>
<td><strong>Positive impact</strong></td>
<td>Cash transfers, school feeding</td>
<td>Merit-based scholarships, school feeding</td>
</tr>
<tr>
<td><strong>Promising</strong></td>
<td>Remedial education, building classrooms, additional instruction time</td>
<td></td>
</tr>
<tr>
<td><strong>Unclear impact</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Little or no impact</strong></td>
<td>Providing information on benefits of education, reducing user fees, school-based health programmes</td>
<td>Teacher incentives</td>
</tr>
</tbody>
</table>

Cash transfers are a programme with a considerable body of evidence. The 3ie review reports findings from 50 impact evaluations. A body of evidence of this size allows examination of heterogeneity to explore effective programme design features. Such an examination shows that (Saavedra, 2012):

- Cash transfers have a bigger effect for secondary enrolment than primary
- The size of the transfer matters
- There is a larger impact if conditions refer to performance and not just attendance
- The timing of the transfer matters, with less frequent payments having a larger impact, especially if made when education-related expenses need to be made

Moreover, another review shows that conditions matter. Conditional transfers have more effect on attendance than unconditional transfers, especially if the conditions are properly monitored and enforced (implementation matters) (Baird, 2013).
What outcomes are reported?

The evidence and gap map also shows studies according to the outcomes they report, which fall under the two outcome domains, namely healthy development, and learning and development.

Table 1 shows the number of studies for each outcome subdomain, classified by the relevant SDG. The largest numbers of studies relate to cognitive development (50) and learning and achievement (58). There are no outcomes for which there is a notably small number of studies.

<table>
<thead>
<tr>
<th>Outcome Domain</th>
<th>SDG 4: Ensure inclusive and quality education for all and promote lifelong learning</th>
<th>SDG 5: Achieve gender equality and empower all women and girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthy development</td>
<td>Cognitive development (50)</td>
<td>Gender disaggregated data</td>
</tr>
<tr>
<td>Learning and development</td>
<td>Enrolment (44) Attendance (43) Dropout and Truancy (31) Learning and achievement (58) Social skills development (31) Quality of education (21)</td>
<td></td>
</tr>
</tbody>
</table>

Where is the evidence from?

Systematic reviews are often global in scope. We included in the map all reviews for which studies from developing countries were eligible for inclusion, whether or not there were actually any studies from developing countries included. The screening process did not check whether the review actually included studies from developing countries.

However, many education reviews focus on developing countries such as Baird (2013) Relative effectiveness of conditional and unconditional cash transfers for schooling outcomes in developing countries and Baker-Henningham (2013) Early Childhood Stimulation Interventions in Developing Countries: A comprehensive literature review.

Additionally, some reviews are focused on specific developing regions such as Asim (2015) Improving Education Outcomes in South Asia and Conn (2014) Identifying Effective Education Interventions in sub-Saharan Africa.

Figure 5: Number of studies for learning and development outcome categories by study quality

Figure 6: Number of studies by World Bank Region
Where are the evidence gaps?

There are no absolute evidence gaps for every child learns as there are studies in virtually every cell. However, the evidence is not evenly distributed. There are reasonable bodies of evidence synthesis related to teacher training and incentives. There is less evidence around remedial education, non-formal education and scholarships. The most notably weak evidence base is for the intervention subcategory ‘systemic interventions’. It would be useful to undertake more detailed maps of the evidence in developing countries relating to these subcategories.

However, digging deeper shows areas in which evidence is lacking. For example, there is no review of delivering education in humanitarian settings or of inclusive education for people with disabilities. The evidence base should be further assessed against priority areas such as these.

Implications of findings

There is a reasonable body of evidence synthesis to support policies, programmes and practice for ensuring that every child learns.

The largest bodies of evidence are for both learning outcomes and cognitive development. At the same time, there is a widespread learning crisis across the developing world. So, there is an opportunity to sort through that evidence to develop a clear set of minimum child development and education standards.

Since this is a map of evidence synthesis studies, the lack of evidence synthesis does not mean there are not primary studies. In areas in which there is a reasonable amount of evidence synthesis already – which is most areas of the Mega-Map – it is recommended that evidence and gap maps be constructed to gain an idea of the extent of the developing country literature, and also to develop a taxonomy of approaches relevant in these contexts. This could certainly be done for early child cognitive development, teacher incentives, teacher training and pedagogy. Attention should also be paid to policy areas of interest such as supporting the transition to secondary education, obtaining gender equality in education and reaching ‘last mile’ populations.

Where there are fewer studies or where studies are dated, it is recommended that these reviews be updated, applying meta-analysis where appropriate. Reviews of remedial education and different pedagogical approaches (identified when constructing the evidence and gap map) would be useful, as well as reviews of developing country literature on teacher incentives and tackling teacher absenteeism.

How can the map be used by UNICEF?

The map can help UNICEF staff and partners to identify evidence-based programmes and practice to help achieve the agency’s strategic goals.

Whilst the evidence base is comparably thin in this area, there are reviews on interventions of great interest to UNICEF, such as school feeding programmes. The map should help UNICEF staff and partners to identify relevant evidence for their work. There is an opportunity to draw on this evidence base to develop evidence-based guidelines for programmes across UNICEF or indeed for all governments and development agencies.

However, there are important areas where the evidence base is thin – such as remedial and non-formal education – or non-existent, such as education in humanitarian settings. Thus, for UNICEF and other agencies adopting an evidence-based approach, to become truly evidence-based there is a need for substantial, strategic investments to generate evidence of what works.

Endnote: Assessing the quality of systematic reviews

For systematic reviews we score each study using the 16 item checklist called AMSTAR 2 (‘Assessing the Methodological Quality of Systematic Reviews’). The 16 items cover: (1) PICOS in inclusion criteria, (2) ex ante protocol, (3) rationale for included study designs, (4) comprehensive literature search, (5) duplicate screening, (6) duplicate data extraction, (7) list of excluded studies with justification, (8) adequate description of included studies, (9) adequate risk of bias assessment, (10) report sources of funding, (11) appropriate use of meta-analysis, (12) risk of bias assessment for meta-analysis, (13) allowance for risk of bias in discussing findings, (14) analysis of heterogeneity, (15) analysis of publication bias, and (16) report conflicts of interest.

Items 2, 4, 7, 9, 11, 13 and 15 are termed ‘critical’. Study quality is rated high if there is no more than one non-critical weakness, and medium if there is no critical weakness but more than one non-critical weakness. Studies with one or more critical weaknesses are rated low quality.
REFERENCES


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About this UNICEF Research Brief

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