

DISCUSSION PAPER

Educational strategies that can reduce child labour in India: A literature review

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Executive summary

India has made significant progress in increasing children's enrolment in school in recent decades. Alongside this, children's engagement in work has also declined steadily. Increased investments in universalizing primary education since the 1990s have resulted in a significant effort by governments and international and civil society partners to strengthen learning outcomes and reduce school dropout. Even so, child labour in the country persists, with children transitioning from primary to secondary school being at higher risk to start working or combine school and work. These findings underscore the importance of investing in more research to understand the role that education and schooling can play in reducing child labour, and in particular to identify and learn from promising and effective strategies that can further strengthen the role of school education in eliminating child labour in India.

The Population Council, with the support of UNICEF Office of Research-Innocenti (UNICEF Innocenti), conducted a two-part study on child work and labour in India. The first part analysed primary and secondary data to generate updated estimates on the nature and scope of children's engagement in work and labour and is published separately as a research report (Santhya et al., forthcoming).

This working paper represents the second part, which is a review of studies on educational and related interventions and their impact on schooling and child labour outcomes. This review focused on programmes that either include an explicit focus on improving school participation, improving learning outcomes, and/or reducing children's work. The report synthesizes the available evidence on the effectiveness of such programmes and highlights potentially promising approaches and evidence gaps.

The review included studies published in English between 2011 and 2021 that met the following criteria:

- measured the effect of policy or legal initiatives and programmes/schemes implemented by the central and state governments and development partners on child schooling and/or labour outcomes
- used rigorous research design such as randomized controlled trials (RCTs) or quasi-experimental designs such as regression discontinuity to identify causal impacts, and
- reported education outcome and/or labour/employment-related outcomes for children aged below 18 years in India.

The review of studies was complemented by an overview of relevant programmes by the government and/or development partners.

Conceptual framework

The review was guided by a conceptual framework outlining the pathways of change from educational policies and programmes to schooling and child labour outcomes. The framework acknowledges that schooling and child labour outcomes are determined by factors operating across different levels, including the level of the child, the family or household, the school, and the community and education system more broadly (Emezue et al., 2023). Therefore, the framework distinguishes four categories of interventions, addressing barriers to schooling at each of these four levels.

The framework postulates that interventions focused on *children*, such as merit-based scholarships, school feeding, or life skill training, can reduce opportunity costs of schooling, improve children's nutrition, improve their agency to influence decisions related to school and work, expand their educational and occupational aspirations, and raise their awareness of their rights, returns to their education and the long-term negative consequences of child labour. These changes in turn can improve their schooling and reduce their engagement in economic activities.

Interventions targeted at *households and families*, such as cash transfer schemes or awareness-building programmes to promote positive attitudes towards children's school enrolment and completion, may make education affordable to families and increase household investment in children's education. Such interventions may also improve parental interaction with their children around schooling and work matters, raise parental awareness of child rights, positive economic and social returns to education, and the negative consequences of child labour. They may also result in reduced household demand for children's work, amongst others.

Interventions and policies targeted at *schools and teachers* may improve physical accessibility of schools, reduce the costs of schooling, reduce discriminatory practices, increase the quantity of teaching staff, improve the quality of teaching and make the curriculum responsive to children's aspirations and skill demands. All of these outcomes can increase school retention and participation and potentially reduce children's availability for work and labour.

Finally, the framework suggests that interventions targeted at *communities and systems* can improve the quality of school administration and leadership, engage community leaders in preventing school dropout and protecting children from child labour and exploitation, and expand citizens' capacity to demand improved education services, leading to greater accountability.

Findings of the review

Several insights are notable from the review, which identified 30 studies that met the inclusion criteria. Of these 30 studies, 17 measured intervention impacts on learning outcomes, 17 on school participation outcomes, and only 4 on child work outcomes.

Interventions focused on children

Ten studies evaluated child-focused interventions, specifically school feeding programmes, skills development and awareness-building interventions as well as the provision of free transportation modalities such as bicycles. While nine studies evaluated the effect on school participation and completion, only two studies assessed the effect on both children's learning and work outcomes.

The evidence reviewed suggests that school feeding programmes improve school enrolment and school attendance, especially at lower grades and among children belonging to socio-economically disadvantaged households. Reviewed studies also found positive impacts on children's learning outcomes. The specific operation modalities of school feeding were found to influence programme effectiveness. The review did not identify any study on the effect of school feeding on child labour outcomes in India.

Though limited, the evidence suggests that exposure to life skills education programmes is a promising approach to reduce school discontinuation, at least among girls. The single study measuring effects of a life skills education programme on children's work, however, found no statistically significant impact. While more research is needed to better understand how such programmes enhance school continuation and completion among girls, potential reasons may be that they help girls overcome social barriers to attending school, enabling them to have a greater say over whether to leave school and enhancing social-emotional support.

The two studies assessing the impact of providing free bicycles to adolescent girls showed positive effects on both education and work outcomes. Again, impacts are likely to be mediated by a change in social norms, especially in relation to girls' mobility.

Interventions focused on families and households

Ten out of the 30 identified studies assessed the effect of household-targeted programmes, which clustered broadly into three types: microfinance programmes, parental awareness-building programmes, and cash transfers. The studies focused on school participation and completion outcomes, rarely assessing learning and child work outcomes.

Of the three studies that assessed impacts of microfinance and livelihood support on school participation, one found positive effects and two found no impact. A few studies have demonstrated positive effects of parental engagement activities on children's learning outcomes, but it is difficult to single out these effects *per se* as parental engagement is often combined with other intervention components. As for cash transfers, only one study was identified, which found positive effects for school completion at Class 8 but not at Class 10 or 12.

Studies included in the synthesis did not shed any light on family- and household-oriented strategies that can potentially reduce child labour, although two studies showed that microfinance programmes had no impact.

Interventions focused on schools and teachers

The body of evidence on the effectiveness of interventions that targeted teachers and schools was larger (13 out of 30 studies included in this review) than the evidence on the other categories of interventions.

Unlike studies on interventions focusing on children and families and households, a larger number of school- and teacher-focused intervention studies examined the effect on learning outcomes than school participation and completion. However, none of the included evaluations of school- and teacher-focused interventions examined effects on child work participation.

Insights that can be drawn on promising school- and teacher-focused intervention strategies for improving school participation and completion are limited given that just two studies included in this synthesis assessed it. Available studies suggest that providing in-kind resources for school improvement, though important and necessary, may not be sufficient to improve school participation and completion on its own.

There is, however, a significant body of evidence on the strategies targeted at teachers and schools that can work to improve learning outcomes. For instance, several studies highlighted the effectiveness of remedial education and improvements in pedagogy and lessons delivery on improving learning outcomes among children. Performance-based payments and incentives to teachers and hiring additional teachers were also found to have a positive impact. However, if spending on school inputs is provided unconditionally, these inputs may have limited or no effect on learning outcomes. Similarly, continuous and comprehensive evaluation of students by teachers may not necessarily improve learning outcomes unless teaching practices are changed.

None of these studies explored the effect on children's work participation.

Interventions focused on communities and systems

Only 5 of the 30 studies included in the evidence review assessed measures targeted at communities or systems. These include studies of the effects of the enactment of the Right to Education Act, and school- and community-based monitoring of educational systems. Four of these studies – all of which assessed community- and/or school-based monitoring – found positive or mixed effects on school participation and completion or learning outcomes. However, an assessment of the enactment of the Right to Education Act reported negative effects on learning outcomes. These findings need to be interpreted with caution because there are many omitted variables, such as the quality of teaching, the pedagogical methods used, the curriculum, children's readiness for school and household income, which the study could not control for and may have biased the study results.

None of these studies explored the effect on children's work participation.

Conclusions and recommendations

Overall, evidence on the effectiveness of educational strategies in reducing child work remains extremely limited, despite school participation and completion being strongly associated with protection of children from child work and labour.

Even so, strategies that seem to be promising for improving school participation include:

- school feeding programmes
- life skills and awareness-building programmes targeted at children
- provision of bicycles to girls.

Strategies that seem to be promising for improving learning outcomes include:

- awareness-building programmes for parents
- increasing numbers of teachers, and making improvements to pedagogy and instruction
- remedial education
- incentives to teachers
- community- or school-based monitoring.

While there is far too little evidence to draw any lessons from the effects of educational and related strategies on reductions in children's work, strategies that could be explored further in terms of potential for reducing child work include the provision of bicycles to girls. Far more research is needed to explore how education and schooling improvements can impact children's work in India.

While the findings of our review uncover significant gaps in assessing whether educational interventions can directly or indirectly contribute to reducing child labour, some programme and research recommendations can be extracted. Programmatically, there are a number of strategies that are already implemented at scale or are ready for scaling up, including school feeding programmes, and different models of remedial education. More research is needed to understand the reach of these programmes to the most vulnerable children and the conditions in which such programmes are most likely to improve outcomes for children who are not impacted by the current programme design.

Implementation research is also needed to document challenges during up-scaling and to assess the effect of scaled-up models, not only on children's school attendance and completion but also on academic performance and engagement in economic activities. There are several educational strategies for which some evidence of effectiveness is available from small pilot interventions or from one or two studies – for example, around the use of conditional cash transfers to improve school participation, use of audio-visual learning materials, incentives to teachers and community- and/or school-based monitoring to improve learning outcomes. These interventions need further evaluation and assessment of adaptability at scale.

Findings on the effectiveness of some of the strategies, such as microfinance programmes and parental engagement programmes, are too mixed to draw conclusions. These mixed findings call for additional research, including research that better establishes pathways through which these strategies may improve education and work outcomes for children.

These findings underscore the need for broadening the scope of evaluations of educational strategies. More systematic and specialized research is needed that explores the effect of a variety of educational strategies on work outcomes for children. What is needed are not only more studies, but also studies that explore effects in different socio-economic and cultural settings and geographies. Outcomes measured in the reviewed studies varied by intervention approach and the stakeholders that the interventions targeted.

Several studies included in the review did not contain data on effects disaggregated for boys and girls, younger and older children, and children belonging to different socio-economic strata. More studies are needed that incorporate an age, sex and social affiliation-segmented approach. Barring a few evaluations, current evidence is based on isolated studies.

Evaluations that take advantage of national- or sub-national-level programmes and shed light on the effect of at-scale programmes are needed. More research is also needed that explores the feasibility of folding some of the promising models into available government programmes.

Only a few studies included in our review were multicomponent interventions that compared the effectiveness of different strategies, and far more such studies are needed to gather insights on what strategy works for which outcome for which children in what context.

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I. Introduction

India has articulated its commitment to promoting children's education and preventing child labour through numerous policies, laws and programmes, particularly over the last two decades. Notable examples include:

- the Right of Children to Free and Compulsory Education Act 2009, which has made it mandatory for the state to ensure that all children aged 6–14 years are in school and receive free education (Ministry of Law and Justice, 2009)
- the National Policy for Children 2013, which has advocated for universal and equitable access to quality early childhood care and education for all children below 6 years of age, school participation for all children aged 6–14 years, affordable and accessible quality education up to the secondary level for all children, vocational training options, and child-friendly teaching and learning processes (Ministry of Women and Child Development, 2013)
- the Child Labour (Prohibition & Regulation) Amendment Act 2016, which has completely prohibited the employment of children below 14 years except in entertainment industry and non-hazardous family enterprises, and the employment of adolescents aged 14–17 in hazardous occupations and processes, and regulated their working conditions where they are not prohibited (Ministry of Labour and Employment, 2016)
- the National Education Policy 2020, which has advocated for universal access to quality early childhood care and education, universal foundational literacy and numeracy in primary schools, universal enrolment in preschool to secondary level and participation in schools, and equitable and inclusive education for all (Ministry of Human Resource Development, 2020).

Correspondingly, several programmes to improve school participation and completion and learning outcomes and to reduce children's engagement in work have been initiated by central and state governments. Programmes such as *Sarva Shiksha Abhiyan* (SSA) to universalize elementary education, the *Rashtriya Madhyamik Shiksha Abhiyan* (RMSA) to universalize secondary education in Classes 9–12 (<https://www.education.gov.in/en/rmsa>), the *Samagra Shiksha*, which subsumed SSA, RMSA and Teacher Education (<https://samagra.education.gov.in/>), and the National Child Labour Project (<https://labour.gov.in/childlabour/nclp>) are notable examples of such initiatives. Several multi-lateral and bilateral agencies and development partners have also been supporting initiatives to promote children's education and reduce child labour.

In India, sector-wide programmes such as SSA, RMSA and *Samagra Shiksha* have focused on supply-side reforms. These initiatives have invested in opening new schools and strengthening existing school infrastructure through the provision of additional classrooms, toilets, drinking water, maintenance grants and school improvement grants. In-kind transfers such as uniforms and textbooks are almost universally provided to children in government-aided primary schools in India. Some 94 per cent of students in Classes 1–5 in government schools had received free textbooks in 2017 (National Sample Survey Office, 2019). There have also been efforts to improve quality of education by supporting *Rashtriya Avishkar Abhiyan* to promote science and mathematics learning in schools and the *Padhe*

Bharat Badhe Bharat Programme to develop foundational skills at primary level, and providing library grants for every school. The Government of India had introduced the ICT@ Schools scheme in 2004 to promote the use of ICT in school education. The National Child Labour Project, initiated in 1988, has made special efforts to provide working children from districts where child labour is endemic with education, vocational training, midday meals, health check-ups and a monthly stipend.¹

Apart from central and state governments, several NGOs have worked with communities and local educators to implement awareness-building interventions targeting parents and other community members about the value of educating children, and have worked intensively at community level and with schools to improve pedagogy and lesson delivery, provide remedial and special education opportunities, enhance teacher training and hiring, and provide incentives to teachers (see Annex 2 for a brief description of these programmes).

Consistently with these efforts, there has been a significant increase in the enrolment of children in school since the early 2000s. The proportion of children aged 5–17 years who were enrolled in school increased from 77 per cent in 2004/05, to 87 per cent in 2011/12, and to 92 per cent in 2018/19 (National Sample Survey Office, 2006, 2014; National Statistical Office, 2020).² Pupil–teacher ratio has declined from 46 per cent in 2004/05, to 41 per cent in 2011/12, and to 28 per cent in 2018/19 (Ministry of Human Resource Development, 2008, 2014; Ministry of Education, 2021).

Likewise, children’s engagement in economic activities has declined steadily in India. Even so, child labour in the country persists, with children transitioning from primary to secondary school being at higher risk to start working or combine school and work. (see, for instance, Khan and Lyon, 2015; Kim et al., 2020; Santhya et al., forthcoming).³ To reduce child labour, a multi-sectoral approach is needed that addresses its multiple determinants, including poverty, insufficient access to quality education, and lack of awareness on child rights, among others (Subrahmanian et al., 2022; Thévenon and Edmonds, 2019). The education sector plays a central role. For example, adequate schooling infrastructure and appropriate teaching modalities are key to ensure that both children and their parents see schooling as a viable alternative to child labour. Similarly, children can attend school instead of working only if schooling is affordable to their families. These examples underscore the need for identifying promising and effective strategies that can strengthen the role of education in eliminating child labour and using the synthesized evidence to further dialogue and action on child labour in India.

About this paper

To begin to address this need, Population Council, with the support of UNICEF Innocenti, conducted a review of strategies targeted at improving school participation and reducing dropout that may have the potential to reduce child labour in India. This working paper synthesizes the available evidence on their effectiveness. While a range of educational strategies have been implemented, the strength of evidence on their effectiveness in improving children’s school participation and learning outcomes and reducing children’s work is varied. This review highlights potentially promising approaches and programme areas that have not thus far been adequately addressed or evaluated. Recommendations on areas of future research are also included.

1 The scheme was discontinued effective from 31 March 2022.

2 Calculated using unit-level data from the National Sample Survey Office 61st round “Employment-unemployment survey, 2004-05”; 68th round “Employment-unemployment survey, 2011-12” and National Statistical Office “Periodic Labour Force Survey (PLFS), 2018-19”.

3 For further detail on definitions and measurement of child work and child labour (including hazardous and worst forms), please see Santhya et al. (forthcoming).

II. Conceptual framework

The review was guided by the conceptual framework developed by UNICEF Innocenti for a rapid evidence assessment of the impact of educational policies and programmes on child work and child labour (Emezue et al., 2023). The framework follows Snilstveit et al. (2016) and acknowledges that education and child labour outcomes are determined by factors operating across four main levels:

- child level, such as opportunity costs of schooling and awareness of child rights
- household level, such as poverty or caregivers' awareness of the relevance of education and the hazards related to child labour
- at the level of schools and teachers, including quality of schooling infrastructure and instruction
- communities and systems level, such as accountability, national education policies and budget.

Therefore, the framework distinguishes four categories of interventions, addressing barriers at the four levels above (Annex 1 provides a representation of the conceptual framework and considered intervention categories).

Interventions addressing *child-level* barriers include, among others, merit-based scholarships, school feeding, and building children's agency and awareness on child rights. School feeding, for instance, improves children's nutritional status and health, which can translate in better schooling and child labour outcomes. Interventions increasing children's awareness on their rights can improve schooling and labour outcomes by increasing children's agency to influence decisions related to school and work, expanding their educational and occupational aspirations, and raising their perceived returns to education.

Interventions addressing *household-level* barriers to education include, among others, social protection programmes, or awareness-building for caregivers, on the relevance of education and the negative consequences of child labour. Social protection, for instance, may reduce child labour by making education affordable to families, helping families utilize schooling entitlements, and thus increasing household investment in children's education. Interventions improving caregivers' awareness on child rights may improve parental interaction with their children around schooling and work matters, and raise parental perceived returns to education, which, in turn, improves schooling outcomes and reduces child labour.

Interventions addressing *school-level* barriers may include, for instance, the expansion of school infrastructure, provision of schooling material or the introduction of remedial and special educational opportunities (e.g., targeted programmes for out-of-school children). Such interventions may reduce child labour through improved physical access to school, reduced discriminatory practices, improved quality of teaching and by making the curriculum responsive to children's aspirations and skill demands.

Finally, the interventions addressing barriers at the *community and system* level include, among others, policies removing school fees or subsidizing other schooling costs, extending compulsory schooling, improving the quality of school administration and leadership, expanding citizens' capacity to demand improved education services and lead to accountability.

The framework also notes that the effects of educational interventions on children's education and work outcomes are moderated by macro-economic factors, legal, policy and socio-cultural context, and socio-demographic characteristics of children and their families.

III. Methodology

We conducted a review of studies published from 2011 onwards in English language that discuss the effect of education interventions on schooling and/or labour-related outcomes for children in India (see Annex 3 for the exclusion and inclusion criteria used). We included studies that:

- measured the effect of policy or legal initiatives and programmes/schemes implemented by the central and state governments and development partners
- used rigorous research design such as randomized controlled trials (RCTs) or quasi-experimental designs such as regression discontinuity to identify causal impacts, and
- reported education outcomes and/or labour/employment-related outcomes for children aged below 18 years in India (see Annex 1 for a representation of considered interventions and outcomes).

We excluded studies that do not meet any of the above-mentioned inclusion criteria (see Annex 4 for a description of studies retained in the synthesis). We conducted an online search of databases such as JSTOR, GoogleScholar, DeepDyve, ERIC and NBER. In total, 30 studies met the inclusion criteria. From each study, we extracted key information, such as study setting, study design, duration of intervention, type of intervention, components, evaluation design, outcomes measured and the intervention effects.

Table 1 presents a profile of 30 studies included in the evidence synthesis. Ten studies evaluated interventions focused on children, 10 on families and households, 13 on schools and teachers, and 5 on communities and systems. We note that six studies evaluated interventions that targeted more than one stakeholder group. Seventeen of the 30 studies evaluated the effect on learning outcomes, 17 measured the effect on school participation and completion and 4 assessed the effect on children's work.

Table 1: Intervention strategies and outcomes evaluated in the studies included in the evidence synthesis

| Type of intervention strategy | Number of studies | | | |
|---|-------------------|-------------------------------|---------------------------|---------------------|
| | Total | Measured school participation | Measured learning outcome | Measured child work |
| Children | 10 | 9 | 2 | 2 |
| School feeding | 5 | 4 | 1 | 0 |
| Skills- and awareness-building (e.g., life skills training, livelihoods orientation) | 3 | 3 | 1 | 1 |
| Free transportation (e.g., bicycle scheme) | 2 | 2 | 0 | 1 |
| Families and households | 10 | 8 | 3 | 2 |
| Social protection interventions (e.g., cash transfer) | 1 | 1 | 0 | 0 |
| Livelihood and microfinance support programmes | 3 | 3 | 0 | 2 |
| Awareness-building (e.g., on employment opportunities, value of education, child rights) | 6 | 4 | 3 | 0 |
| Schools and teachers | 14 | 2 | 14 | 0 |
| Free school and instructional materials (e.g., grants for learning materials) | 2 | 1 | 2 | 0 |
| Improvements to pedagogy and lessons delivery (e.g., text improvements, audio-visual learning materials, computer-assisted learning, games, continuous comprehensive evaluation, phonics) | 6 | 0 | 6 | 0 |
| Remedial and special education | 4 | 0 | 4 | 0 |
| Teacher training, hiring and incentives (e.g., additional teachers, performance-based payments and incentives) | 4 | 1 | 4 | 0 |
| School vouchers | 1 | 0 | 1 | 0 |
| Communities and systems | 5 | 3 | 4 | 0 |
| Compulsory universal education laws (Right to Education Act) | 1 | 0 | 1 | 0 |
| School-based governance/community-based monitoring of educational system | 4 | 3 | 3 | 0 |
| Total | 30 | 17 | 17 | 4 |

Note: A few studies evaluated multi-component interventions, so they are counted under more than one intervention type

We acknowledge the limitations of this working paper. Though educational programmes have a long history in India, our discussion mainly focuses on programmes implemented and evaluated since 2011. Also, evaluations of most of the programmes being carried out by development partners and international organizations were not always available in the public domain and, therefore, we may have missed evidence from those studies.

IV. Findings from the reviewed studies

This section presents findings from studies included in the review on the effect of evaluated programmes on children's schooling and their engagement in work.

For each of the four categories, results are described by type of intervention. Within each intervention type, the paper first describes results on schooling (participation, learning) related outcomes, followed by discussion on outcomes related to children's work.

4.1 Interventions focused on children

Child-focused interventions with the potential for reducing child labour may include merit-based scholarships, school feeding and school health programmes, and nudging and behavioural interventions in education (e.g., increasing access to information on the benefits of education, increasing awareness of child rights and challenging social norms, improving soft skills) (Emezue et al., 2023).

We came across 10 studies that evaluated children-focused interventions. These studies evaluated school feeding programmes (Afridi, 2011; Afridi et al., 2016; Bonds, 2012; Chakraborty and Jayaraman, 2019; Jayaraman and Simroth, 2015), skills- and awareness-building interventions (Andrew et al., 2019; Edmonds et al., 2021; Prakash et al., 2019) and the provision of free bicycles to girls (Mitra and Moene, 2017; Muralidharan and Prakash, 2017). Most evaluations focused on assessing the effect on school participation and completion. Nine of the above studies evaluated the effect on school participation and completion outcomes, while two studies assessed the effect on children's learning (Chakraborty and Jayaraman, 2019; Edmonds et al., 2021). Only two studies measured the effects on children's work (Edmonds et al., 2021; Mitra and Moene, 2017).

4.1.1 School feeding

- a) Effects on school participation and learning outcomes

Five studies on school feeding were identified, four of which measured effects on school participation. One study measured effects on learning outcomes. Evidence synthesized from these five studies suggests that school feeding programmes improve school enrolment, especially at lower grades and among children belonging to socio-economically disadvantaged households (Bonds, 2012; Jayaraman and Simroth, 2015) and school attendance, again at lower grades (Afridi, 2011; Afridi et al., 2016). Moreover, the single study that assessed the effect of school feeding on children's learning outcomes found positive impacts (Chakraborty and Jayaraman, 2019).

Available evidence suggests that the content and quality of meals matter. For example, evaluations of change in the midday meal scheme from take-home ration to cooked meals in Madhya Pradesh and from ready-to-eat snacks to cooked meals in Delhi showed that cooked meals improved school

attendance for girls and children in lower grades (Afridi, 2011; Afridi et al., 2016). Authors of these studies argued that grade or age effect on attendance may be because the food transfer was grade- or age-invariant and, as such, it effectively gave a proportionately larger subsidy to lower grades. They also speculated that the opportunity cost of sending children to school may be higher for older children, who are more likely to be engaged in productive labour compared with younger children. They also found that school attendance improved in schools that served diverse menus and in schools that operated in the morning as opposed to afternoon shifts.

b) Effects on children's work

There were no studies assessing the effects of school feeding on child work outcomes in India.

4.1.2 Life skills training

Three studies focused on life skills training programmes targeted at children, and all three measured effects on school participation, one measured effects on learning outcomes, and one measured effects on children's work.

a) Effects on school participation and learning outcomes

Available evidence, though limited, shows that participation in life skills education programmes, broadly defined, can reduce school discontinuation among girls (Andrew et al., 2019; Edmonds et al., 2021; Prakash et al., 2019). Exposure to such programmes may prevent school discontinuation by helping girls overcome social barriers to school attendance, which cumulatively may prevent them from falling behind and losing interest in school (Andrew et al., 2019). Andrew and co-authors also note that such programmes can contribute to girls having a substantially greater say over whether to leave school (Andrew et al., 2019).

Life skills education programmes can enhance peer social-emotional support by promoting social bonding through life skills classes (Edmonds et al., 2021), although Edmonds and co-authors note that strengthening of social ties may also serve as a distraction from academic work and may limit any further academic gains. The evaluation of another life skills education programme for girls imparted as part of a multi-level intervention to address normative and structural factors, however, cautions that programme delivery characteristics can mediate the positive effect of life skills education programmes on school participation and completion (Prakash et al., 2019). While the authors found no effect for the overall sample, they observed a significant increase in the proportion of girls who enrolled into and completed secondary school in one of the two intervention districts in which the intervention was delivered by educationally better qualified outreach workers for longer duration and with greater intensity than the other.

b) Effects on children's work

One study (Edmonds et al., 2021) looked at effects of life skills programmes on children's work as an ancillary outcome (not primary outcome of focus) and found no statistically significant impacts.

4.1.3 Providing free bicycles to girls

a) Effects on school participation and learning outcomes

Available studies highlight the importance of addressing physical distance to schools. Two separate evaluations of the bicycle scheme for girls in the state of Bihar showed that the scheme succeeded in enabling girls to complete secondary and higher secondary education (Mitra and Moene, 2017; Muralidharan and Prakash, 2017). Authors of these studies noted that the scheme contributed to changing both the girls' own aspirations and those of their families, as well as shifting attitudes toward girls' mobility in the community, thereby addressing underlying patriarchal norms that restricted girls' mobility. It also reduced time and improved safety of travel to school. Muralidharan and Prakash (2017) noted that the scheme was more cost-effective at increasing girls' enrolment than comparable conditional cash transfer programmes in South Asia.

b) Effects on children's work

Mitra and Moene (2017) examined impacts of the bicycle scheme on children's work participation and found that those who benefitted from the scheme were less likely to work for pay than girls who did not. Authors of the study noted that this was more likely to be because girls could not get permission to work outside or find suitable work, suggesting that lower work participation was not a direct result of the scheme keeping girls at school, but rather a consequence of social norms and lack of employment opportunities.

4.2 Interventions focused on households and families

Programmes targeted at families and households that can potentially reduce children's work may include cash or in-kind transfers, skills-building (e.g., training on alternative livelihood opportunities), and nudging and behavioural interventions (e.g., increasing access to information on the benefits of education, increasing awareness of child rights and challenging social norms) (Emezue et al., 2023).

Ten studies included in the evidence synthesis evaluated interventions focused on households and families. Interventions evaluated in these studies mostly fell into the categories of microfinance programmes and parental awareness-building programmes. As with evaluations of child-focused interventions, a larger number of studies assessed the effect on school participation and completion (8 of 10) than learning outcomes (3 of 10) and child work outcomes (2 of 10).

4.2.1 Livelihood and microfinance support programmes

a) Effects on school participation and learning outcomes

Specifically, three studies included in this synthesis examined the effect of livelihoods and microfinance support to poor households. While one reported positive effects on school participation and completion (Baland et al., 2020), the remaining two reported no effect (Banerjee et al., 2015; Banerjee et al., 2011). Baland and co-authors (2020) observed that mothers' participation in self-help groups in Jharkhand increased school enrolment of children aged 6–17 years by 20 percentage points

and reduced school discontinuation after primary grades by 15 percentage points. They attributed the positive effects to strong peer influences, which tend to positively affect the schooling decisions of fellow group members. On the other hand, Banerjee and co-authors (2015), evaluating a microfinance programme in Hyderabad, observed that the probability of children being enrolled in school and levels of household expenditure on children's schooling did not differ between the intervention and control groups. The authors argue that this could be because of the limited effectiveness overall of the microfinance programme on empowerment and other outcomes for women, thereby yielding little further impact on investments in children's schooling.

b) Effects on children's work

Two studies that assessed the effect of microfinance programmes on children's time use observed no impact (Baland et al., 2020; Banerjee et al., 2011). Baland and co-authors (2020) noted both that mothers' participation in self-help groups had no effect on the total number of hours that children worked, and that children of households participating in self-help groups tend to work more often but for a shorter time and at home. Banerjee and co-authors (2011) reporting on a programme that offered assets (livestock and inventory) to extremely poor households in West Bengal found no statistically significant difference in time spent in schooling or work by children in the intervention and control research arms.

4.2.2 Improving parental awareness on education and employment linkages and benefits

a) Effects on school participation and learning outcomes

Evidence was, likewise, inconsistent about the effectiveness of interventions to improve awareness and engagement of parents and other family members on children's school participation and completion. Jensen's study of the downstream effect of informing and mentoring young women about employment opportunities in the business process outsourcing sector found that girls aged 6–17 years in villages that received the intervention were 5 per cent more likely to be enrolled in school after three years. These findings suggest that if parents are informed about potential opportunities for their daughters, they may increase investment in their education (Jensen, 2012). On the other hand, three cluster randomized trials that informed parents and communities about social and economic gains from girls' education and engaged them in their daughters' education reported mixed or no effect on school participation and completion (Andrew et al., 2019; Prakash et al., 2019; Santhya et al., 2016). Andrew and co-authors (2019) reported that parental and community engagement had no impact on schooling above and beyond the effect from girls' exposure to the life skills programme. Santhya and co-authors (2016) reported that while there was some effect on improving girls' attendance at school, there was no effect on transition rates.

The evidence on learning impacts of programmes improving parental awareness on child rights was more consistent and positive than what we described above for impacts on school participation and completion. For example, the cluster randomized trials evaluated by Lakshminarayana and co-authors (2013) and IDinsight (2018) complemented parental engagement activities with remedial education by community volunteers, among other activities. Both studies reported significantly higher test scores for children in intervention than control arms. We note, however, that both these trials combined multiple activities in a single intervention arm and so it is difficult to conclude that parental

engagement *per se* can improve learning outcomes. Findings from a cluster RCT that informed parents on the social and economic gains of girls' secondary education in Gujarat echo this (Santhya et al., 2016). The study found no effect on test scores in two of the three academic subjects tested. Moreover, the study found no effect on teacher absenteeism and classroom dynamics, factors that are more likely to influence girls' transition to secondary education and learning outcomes. This study suggested that helping girls complete secondary education with basic competencies requires an enabling environment at the school level as well. It argued for complementing demand-side models with supply-side interventions that focus more directly on teachers and schools.

b) Effects on children's work

No studies measured the effects of awareness-building activities with parents on child work outcomes.

4.2.3 Cash transfers

a) Effects on school participation and learning outcomes

There is global evidence on the usefulness of cash transfer programmes for improving school participation and completion (Baird et al., 2013; Millan et al., 2019). Several conditional cash transfer (CCT) schemes that focus on improving the status of girls have been implemented in India. However, very few have been evaluated rigorously. One study that assessed the effectiveness of a CCT scheme – *Apni Beti Apni Dhan (ABAD)* – reported that beneficiary girls were 12 per cent more likely to complete Class 8 than those that did not receive the CCT, and 19 per cent more likely to aspire to study beyond Class 12 (Nanda et al., 2016). However, there was no effect found on completion of secondary (Class 10) or higher secondary education (Class 12).

b) Effects on children's work

No studies measured the effects of cash transfers for schooling on child work.

4.3 Interventions focused on schools and teachers

Programmes targeted at schools and teachers that can potentially reduce child work may include investments in school infrastructure and gender-sensitive amenities, early childhood education and care facilities, residential schools for children in remote communities, free transportation, free school and instructional materials, technology and adaptations for distance learning, improvement to pedagogy and lesson delivery, remedial and special education opportunities, and teacher training, hiring and incentives (Emezue et al., 2023).

Thirteen studies included in the evidence synthesis focused on schools and teachers. Unlike studies on interventions focusing on children and families and households, a larger number of school- and teacher-focused intervention studies examined the effect on learning outcomes than school participation (13/13 versus 2/13). As with evaluations of interventions focusing on children and families and households, evaluations of interventions focusing on schools and teachers rarely examined the intervention effect on child work participation (0/13).

4.3.1 Providing schools with in-kind resources

a) Effects on school participation and learning outcomes

Available studies suggest that the provision of in-kind resources to schools, though valuable, may not be sufficient to improve school participation and completion on its own. For example, an evaluation of a library programme for government primary schools in which all government primary schools in Bangalore were upgraded by hiring trained librarians observed no effect on school attendance, nor on students' scores on a language skills test (Borkum et al., 2013).

An evaluation of an intervention that provided a grant of Rs. 125 (around USD 1.50) per student per year for two years to obtain instructional materials reported that students in intervention schools scored higher in mathematics and Telugu (one of India's national languages) than students in comparison schools at the end of the first year in which the grant was unanticipated (Das et al., 2013). However, the effect was weakened in the second year when the grant was anticipated. Authors of this study noted that the impact of a school grant programme was highly attenuated because households realigned their own spending patterns in response to the grant.

b) Effects on children's work

No studies measured the effectiveness of enhancing school in-kind resources on children's work.

4.3.2 Remedial education and pedagogy improvements

a) Effects on school participation and learning outcomes

There is a significant body of evidence on what strategies targeted at teachers and schools work to improve learning outcomes. Several studies highlighted the effectiveness of remedial education and improvements in pedagogy and lessons delivery in improving learning outcomes (Banerjee et al., 2016; Dixon et al., 2011; Duflo et al., 2015; IDinsight, 2018; Joddar and Cooper, 2017; Lakshminarayana et al., 2013; Wennersten et al., 2015). For example, evaluations of Pratham's teaching students according to their ability level have shown improvements in learning outcomes in several settings in India (Duflo et al., 2015; Banerjee et al., 2016). Likewise, evaluation of Educate Girls' intervention in which trained volunteers delivered a child-centric curriculum to students in Classes 3–5 found positive effect on learning outcomes (IDinsight, 2018). Similarly, Room to Read's literacy programme that comprised reading and writing instruction for children in Classes 1 and 2 and access to reading materials through the establishment of school libraries showed positive effects on learning outcomes (Joddar and Cooper, 2017). An experiment that included the use of synthetic phonics, with a lesson plan and a sequential lesson pattern and worksheets to practise writing letters, flash cards, blending cards and story books observed significant improvements in the test scores of students experiencing the phonics method (Dixon et al., 2011). Another intervention in which teachers in Classes 5 and 6 were given a pacing chart matching their particular school's scope and sequence of learning and were trained to use these in the classroom observed a positive effect on learning in English and science when combined with other targeted student preparatory programmes (Wennersten et al., 2015).

- b) Effects on children's work

No studies measured effects of remedial education and pedagogical improvements on children's work.

4.3.3 Teacher recruitment and incentives

- a) Effects on school participation and learning outcomes

Measures such as performance-based payments and incentives to teachers and hiring additional teachers were also found to be effective in improving learning outcomes (Duflo et al., 2012; Muralidharan and Sundararaman, 2011, 2013a). Duflo and co-authors (2012) present results from a randomized control experiment that shows that monitoring teachers combined with simple and credible financial incentives to them can lead to large increases in attendance among teachers, and students can gain from increased instruction time. Muralidharan and Sundararaman (2011) argue that the marginal returns to spending additional resources on performance-linked incentives for teachers may be higher than additional spending on school inputs that are provided unconditionally. This would be consistent with findings from studies that evaluated provision of school inputs, as described above. Findings, although drawn from a single study, also suggest that continuous and comprehensive evaluation of students by teachers may not necessarily improve learning outcomes unless teaching practices are changed in response (Duflo et al., 2015).

- b) Effects on children's work

No studies measured the effects of teacher recruitment and incentives on children's work.

4.4 Interventions focused on communities and systems

- a) Effects on school participation and learning outcomes

Community- and system-level educational interventions with the potential to affect children's work may include, for example, compulsory universal education laws, removal of school fees, school-based governance for efficient management of schools, and community-based monitoring, among others (Emezue et al., 2023). Five studies in the evidence synthesis assessed community- and system-level measures. These studies assessed the effect of the enactment of the Right to Education Act (Bhat, 2017), and school- and community-based monitoring of educational systems, including strengthening school management committees (Duflo et al., 2012; IDinsight, 2018; Prakash et al., 2019; Santhya et al., 2016). Three of these studies explored the effects on school participation and completion and while one found no effect (Duflo et al., 2012), the remaining two reported mixed effects (Prakash et al., 2019; Santhya et al., 2016). Four studies measured the effect on learning outcomes and, of these, two reported positive effect (Duflo et al., 2012; IDinsight, 2018), one reported mixed effect (Santhya et al., 2016) and one reported negative effect (Bhat, 2017).

Evidence from the limited number of available studies suggests that engaging community members, including school management committees and school-based monitoring, can possibly improve children's school participation and completion as well as learning outcomes. For example, an evaluation of Educate Girls' Development Impact Bond, which worked with school management committees to improve school infrastructure, among others, found that learning gains for students in intervention schools were 28 per cent higher than gains for students in control schools (IDinsight, 2018). Two other studies – a cluster randomized trial in Gujarat that worked with school management committees and parents (Santhya et al., 2016) and another trial in Karnataka that sensitized community members about girls' issues and developed local champions to promote girls' retention in school (Prakash et al., 2019) – found mixed effect. Although observed in just one study, school-based governance in the form of monitoring teachers' attendance using cameras and payment of attendance-based salaries was found to increase instruction time (30 per cent more) and to improve students' test scores (Duflo et al., 2012).

Evidence on the effectiveness of compulsory universal education laws remains patchy. One of the studies included in the synthesis found that enactment of the Right to Education Act was associated with consistently negative results for children's reading and numeracy skills in all grades other than Class 1 in public schools, and an 8 percentage point increase in the likelihood that a student cannot read (Bhat, 2017); however, the author cautioned that findings are not definitive.

b) Effects on children's work

No studies measured or reported effects of community and systems-level interventions on children's work.

4.5 Effects of educational and related strategies on school and work outcomes: A summary

Overall, the studies included in this review adopt different strategies and approaches, measure different outcomes and in different ways, and in general are not comparable. Figure 1 summarizes the effect of educational interventions discussed above. Findings highlight that evidence on the effectiveness of educational strategies in reducing child labour remains sparse because most studies had limited the scope of evaluation to education outcomes. Moreover, the few that examined the effect on children's work mostly found no effect. Findings also show that evaluations of interventions targeted at children and families and households assessed the effect on school participation and completion for the most part, while evaluations of interventions targeted at schools and teachers measured the effect on learning outcomes.

Strategies that seem to be promising to improve school participation and learning outcomes include:

- school feeding, life skills and awareness-building programmes targeted at children, and provision of bicycles for improving school participation and completion
- awareness-building programmes for parents
- improvements to pedagogy and lessons delivery, remedial education, teacher recruitment and incentives, and
- community- or school-based monitoring for improving learning outcomes.

The provision of bicycles to girls emerged as a strategy with positive effects on children’s work, out of only three different intervention types that measured any intervention effects on child work outcomes.

Figure 1: A summary of effect of educational and related strategies on children’s education and work

| Type of intervention strategy | Number of studies (Measured) | | |
|--|-------------------------------------|---------------------------------|-------------------------|
| | Improvement in school participation | Improvement in learning outcome | Reduction in child work |
| Children | | | |
| School feeding | 👍👍👍👍 | 👍 | |
| Skill- and awareness-building | 👍👍👍 | 👎 | 👎 |
| Providing bicycles to girls | 👍👍 | | 👍 |
| Families and households | | | |
| Social protection interventions | 👍 | | |
| Livelihood and microfinance support | 👍👎👎 | | 👎👎 |
| Awareness-building | 👍👍👍👎 | 👍👍👍 | |
| Schools and teachers | | | |
| Free school and instructional materials | 👎 | 👍👍 | |
| Improvements to pedagogy and lessons delivery | | 👍👍👍👍👍👍 | |
| Remedial and special education | | 👍👍👍👍 | |
| Teacher training, hiring and incentives | | 👍👍👍👍 | |
| School vouchers | | 👍 | |
| Communities and systems | | | |
| Compulsory universal education laws | | 👎 | |
| School-based governance/community-based monitoring of educational system | 👍👍👎 | 👍👍👍 | |
| Note: Positive 👍 Mixed effect 🟡 No effect 👎 Negative 🟠 | | | |

V. Conclusions and recommendations

Despite a rich landscape of educational policies and programmes across sectors aimed at supporting the universalization of education and improved school participation and learning outcomes, there is limited rigorous evidence on the effectiveness of most of these strategies and programmes. In particular, there is extremely limited consideration of the ways in which improving school-related outcomes can impact child work and labour. This is a considerable missed opportunity for strengthening the pathways between children's rights to education and the elimination of child labour, minimizing harm and promoting child protection and rights.

In India, sector-wide programmes such as SSA, RMSA and *Samagra Shiksha* have focused on supply-side reforms. These initiatives have invested in opening new schools and strengthening existing school infrastructure through the provision of additional classrooms, toilets, drinking water, maintenance grants and school improvement grants. In-kind transfers, such as uniforms and textbooks, are almost universally provided to children in government-aided primary schools in India. There have also been efforts to improve quality of education by supporting *Rashtriya Avishkar Abhiyan* to promote science and mathematics learning in schools and the *Padhe Bharat Badhe Bharat Programme* to develop foundational skills at primary level and provide library grants for every school. The Government of India had introduced the ICT@ Schools scheme in 2004 to promote the use of ICT in school education. The National Child Labour Project, initiated in 1988, has made special efforts to provide working children from districts where child labour is endemic with education, vocational training, midday meals, health check-ups and a monthly stipend.⁴ NGOs have also played a key role in promoting children's rights to education, reducing child labour and generating lessons for larger-scale programmes and systems reform.

As mentioned above, the strength of evidence on the effectiveness of educational strategies in improving children's school participation and learning outcomes and reducing children's work is varied. While some interventions need to be better informed by rigorous evidence, some offer opportunity for replication or scale-up and some are already implemented at scale but require further research to enhance their effectiveness.

The school feeding programme has proven to be effective in improving school enrolment and school attendance, especially at lower grades and among children belonging to socio-economically disadvantaged households. The Government of India has approved the continuation of the scheme to children studying in Classes 1–8 in government and government-aided schools from 2021/22 to 2025/26 (<https://pmposhan.education.gov.in/>). Evidence synthesized in this paper shows that although the scheme has positive effect for children at lower grades and for girls, it has no effect for children at higher grades. More research is needed to understand the conditions in which such programmes are most likely to improve outcomes for children at higher grades or boys and to measure their effect on learning outcomes and children's work participation.

⁴ The scheme was discontinued effective from 31 March 2022.

The bicycle scheme has proven successful in improving school participation and completion and reducing engagement in paid work for girls in Bihar. Several states have implemented similar schemes. The *Samagra Shiksha* programme has made provision for free transport and a secure escort to school for children in Classes 1–8 and for children with special needs. What is needed now is large-scale evaluations, with a scope that not only traces school attendance and completion, but also academic performance and engagement in economic activities and household chores. These evaluations should also consider the challenges in implementing these programmes more widely and in targeting the most vulnerable children in particular.

There is strong evidence that remedial education, teaching at the right level and use of child-centric curricula are effective in improving learning outcomes. The *Samagra Shiksha* programme has also emphasized the need for remedial teaching and bridge courses at the elementary level and learning enhancement programmes at the secondary level to identify the learning gaps and equip students with the core learning prerequisites appropriate for the particular grade. There is need for replicating successful models demonstrated by Pratham, Room to Read, Educate Girl and others at scale using public sector platforms and adapting these models to secondary school students. It is also important to document challenges in scaling up these models and to assess the impact of such models not only on children's school completion but also on their performance and engagement in economic activities.

Life skills education with a strong gender focus has been found to be effective in improving school participation for girls in three studies in varied settings, although no effect was reported for learning outcomes and work outcomes. Several life skills programmes have been implemented by government and development partners, often with the intention of changing gender role attitudes, improving agency, and promoting sexual and reproductive health awareness and practices among girls. Evaluations of these programmes have reported positive effect on these outcomes (Jejeebhoy, 2017). However, very few have been evaluated for their effect on education and work outcomes. It is important that future evaluations of such programmes expand their scope to include education and work outcomes. Life skills education programmes have typically targeted unmarried adolescent girls, and more effort is also needed to adapt available life skills education models in programmes for children, including male children, and test their effectiveness.

There are several educational strategies for which some evidence of effectiveness is available from small pilot interventions or from one or two studies – for example, conditional cash transfer to improve school participation, incentives to teachers, and community- and/or school-based monitoring to improve learning outcomes. These interventions need further evaluation. Findings on the effectiveness of some of the strategies, for example, microfinance programmes, parental engagement programmes and school infrastructure and gender-sensitive amenities, are too mixed to draw conclusions. These mixed findings call for additional research, including research that builds an understanding of how these strategies improve education and reduce children's work.

Most importantly, far more research is needed that explores the effect of a variety of educational strategies on work outcomes for children. What is needed are not only more studies, but also studies that explore effects in different socio-economic and cultural settings and geographies. Outcomes measured varied by intervention approach and stakeholders targeted. These findings underscore the need for broadening the scope of evaluations of educational strategies. Several studies included in the review did not disaggregate data for boys and girls, younger and older children and children belonging to different socio-economic strata, and more studies are needed that incorporate age, sex and social

affiliation-segmented approaches. Barring a few evaluations, current evidence is based on isolated studies; evaluations that take advantage of national- or sub-national-level programmes and shed light on the effect of at-scale programmes are needed. More research is also needed that explores the feasibility of folding some of the promising education-led models into available government programmes for eliminating child labour. More studies of multicomponent interventions that compared the effectiveness of different strategies are needed to sharpen insights on what strategies work for what outcomes, for which children, and in what contexts.

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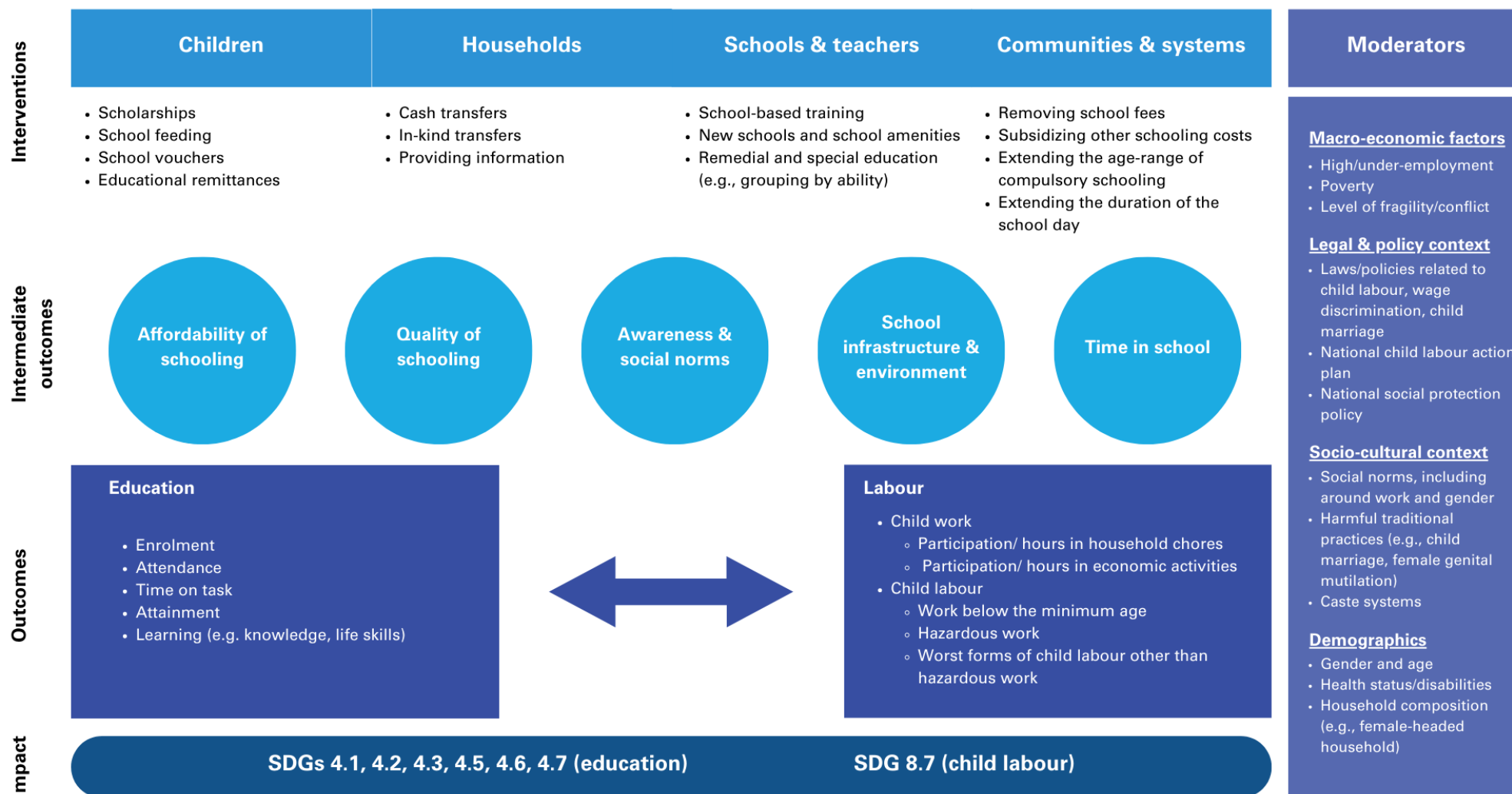
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Annex 1: School education and child labour: A conceptual framework



Source: Emezue et al. (2023).

Annex 2: Overview of a sample of projects carried out by select development partners and international organizations

| No. | Organization | Geography | Programme | Objective | Intervention | Evaluation | Outcome of the programme | Project website |
|-----|---------------------|---------------------|---------------------------------------|--|---|------------|---|---|
| 1. | Quest Alliance | Bihar and Jharkhand | The Anandshala programme | Promote regular attendance, equip teachers to foster a student-friendly environment and create responsive system at the school and district level to perform their roles and responsibilities effectively. | Build student leadership and enhance student participation in school activities, using innovative strategies, activities and tools like movement, the arts and stories to encourage students to develop language skills, think and express freely, and actively interact with the community; data-based system to support teachers identify at-risk students, prioritize attention and track progress of students who are not attending, engaging and learning in school; engage parents in their child's learning process and create space for a mutual dialogue between the school and the parents; create a cadre of master trainers from headmasters, teachers and student leaders. | Yes | Programme monitoring data indicate 465,000 children reached; 40 change leaders created; 996 schools impacted; 200 schools transformed to model schools; and 9% improvements in attendance | https://www.questalliance.net/program/anandshala |
| 2. | Bodh Shiksha Samiti | Rajasthan | The Mainstream Intervention Programme | To provide schooling to slum children. | The Mainstream Intervention Programme involved the provision of Bodh resource teachers to each of the 10 schools taken up for experimentation. The resource teacher interacted with the government teachers in daily planning hours to design class lessons. A school-community contact programme was introduced. The municipal schools collaborated by providing teachers and teaching aids as required by Bodh. A maximum class size of 30 is maintained and children from Grades 1–3 are grouped together to learn in a collaborative mode. | No | Dropout rates from the Bodh classes fell dramatically and a strong link was created between the school and the community. The municipal schools have reported a reduction in dropout rates from 60% to less than 20%. Evidence of improvements in the learning levels was also reported. The changes were apparent in Class 3, where some children demonstrated abilities of Class 4. Children in the slum schools were gaining both cognitive and non-cognitive abilities. | https://openknowledge.worldbank.org/bitstream/handle/10986/19714/multi-0page.pdf?sequence=1&is-Allowed=y |

| No. | Organization | Geography | Programme | Objective | Intervention | Evaluation | Outcome of the programme | Project website |
|-----|--------------|--------------------|--------------------------------------|--|--|------------|--|---|
| 3. | Butterflies | Uttarakhand | Mobile schools | Support out-of-school children to prepare to join formal schools. | Using multipurpose mobile schools with teaching learning material and educators, the programme reaches out to out-of-school children in urban areas of Uttarakhand and Delhi to bring them in the education net. They are provided learning support for a year at Non-Residential Special Training Centres (NRSTCs) in these districts and mainstreamed in formal schools at age-appropriate levels. Along with academic teaching learning, children also learn life skills through Bal Sabhas, health sessions and creative activities such as arts and crafts, poetry writing, daily newspaper reading. Parents' meetings are organized regularly to share the progress of children and also inform them about different schemes and programmes for children and families. | No | | https://www.butterflieschildrights.org/ |
| 4. | Butterflies | 10 states in India | Children's Development Khazana (CDK) | Promote life skills education through democratic participation, and inculcate knowledge of cooperative and financial management, fundamentals of management, accountancy & banking principles, and promote entrepreneurship. | Children aged 9–18 years are the members, volunteer managers and promoters of CDK. In CDK, members organize general body meetings, nominate their own child volunteer managers (for six months) and members for the advance committee, who are then provided training to handle their responsibilities, in basic book-keeping & accountancy, communication skills, and to work in a team. | No | CDK is operational in 8 countries across the world and in 10 states of India with a total membership of 23,247 children (10,926 girls and 12,321 boys) and savings amounting to US\$103,484 savings. | https://butterfliesngo.org/programmes/childrens-development-khazana/ |

| No. | Organization | Geography | Programme | Objective | Intervention | Evaluation | Outcome of the programme | Project website |
|-----|--------------|--|--|---|--|------------|---|---|
| 5. | Care India | Karnataka and Uttar Pradesh | Science, Technology, Engineering and Mathematics (STEM) Laboratories | Build 'thinking skills' that equip children with the ability to quickly learn and adapt. | <ul style="list-style-type: none"> ■ Enable teachers with adequate support in the form of Teachers' Resource Laboratories (TRLs) and allied infrastructure, experiment table, books, science and maths kits and other aids. ■ Provide customized STEM learning resources which include self-directed worksheets, mini STEM kits, and educational videos. ■ Establish specialized laboratories equipped with experiential learning equipment, reference materials, and digital devices to serve as STEM learning centres for middle school children and educators. | No | STEM laboratories impacted more than 7,000 children and more than 200 educators in the year 2019/20 through our projects in Karnataka and Uttar Pradesh. | https://www.careindia.org/stem-laboratories/ |
| 6. | Care India | Bihar, Uttar Pradesh, Orissa and Haryana | Udaan | To provide accelerated learning opportunity to out-of-school girls in the age group 11–14 years who have either dropped out of schools or never enrolled in a school. | Self-instructional personal wellbeing workbooks for children, teacher capacity-building, mobilizing parents for sending their children regularly to community learning centres, empowering School Management Committees and Panchayati Raj Institutions to mobilize community and provide support in identification of a safe space for learning and maintaining safety protocols in the centres and in the community at large, and working closely with systems to ensure all children, especially girls, are back to schools. | No | Project reached more than 3,000 girls across varied contexts (from urban slums to remote villages) through community-based as well as school-based intervention strategies. | https://www.careindia.org/udaan/ |

| No. | Organization | Geography | Programme | Objective | Intervention | Evaluation | Outcome of the programme | Project website |
|-----|---------------|----------------|---|---|---|------------|--|---|
| 7. | Educate Girls | Rajasthan | Educate Girls Development Impact Bond (DIB) | To provide and improve education for girls in rural India. | Intervention includes identification of out-of-school girls through door-to-door surveys, explanation of the value of schooling to their parents and to the community, and multichannel engagement with households with unenrolled girls. Educate Girls (EG) also uses multiple interventions to improve school attendance and prevent dropouts, such as frequent parent counselling sessions and working with school management committees to improve school infrastructure. It also identifies girls who have dropped out and works with the community to re-enrol them into school. Educate Girls trained volunteers to deliver a child-centric curriculum one to five times a week to boys and girls in Classes 3–5. Conducting home visits to reach students who were frequently absent from school or who needed remedial tutoring. | Yes | Students in programme villages gained an additional 8,940 Annual Status of Education Report learning levels relative to comparable students in control villages, surpassing the learning target set by the Development Impact Bond by 60%. The effects of Educate Girls' programme on learning gains were large and statistically significant over the three-year programme: Students in EG schools gained on average an additional 1.08 learning levels, or 28%, compared with students in control schools. Learning gains were higher for treatment students than for control students across all grades and subjects, with relatively higher gains in maths and English than in Hindi and relatively larger treatment effects among students who were exposed to the programme for more years. By the end of the three-year project, Educate Girls had enrolled 768 out-of-school girls, representing 92% of all identified out-of-school schoolgirls eligible for enrolment. | https://www.educate-girls.ngo/pdf/Educate-Girls-DIB-Final-Evaluation-Report_2018-06-10.pdf |
| 8. | EKLAVYA | Madhya Pradesh | Hoshangabad Science Teaching Programme (HSTP) | To explore the extent to which innovative changes can be introduced within the framework of the government school system. | Introduce the 'discovery' approach to learning science in village schools in place of the traditional textbook-centred 'learning by rote' methodology. The concept of environment-based education was included as an integral part of science teaching. Learning science through experiments and field studies would help build up a questioning and analytical attitude in children. Since the programme also emphasized learning directly from the local environment, it was hoped that the children would eventually begin to question the traditional social structure of their village society. | No | Not available | https://www.eklavya.in/index.php?option=com_content&task=category&sectionid=12&id=52&Itemid=74 |

| No. | Organization | Geography | Programme | Objective | Intervention | Evaluation | Outcome of the programme | Project website |
|-----|------------------------------|--|------------------------|--|---|------------|--|--|
| 9. | Kailash Satyarthi Foundation | Bihar, Jharkhand, Rajasthan, UP, Karnataka | Bal Mitra Gram | Preventing child exploitation such as child trafficking, child labour and child marriage at its source along with addressing other cross-cutting issues of education, child sexual abuse, water, sanitation, hygiene and livelihood. | Through the intervention, volunteers work on building the relationship with the gram panchayat, or village council, and build the foundation of Bal Mitra Gram. With the consultation with state- and district-level stakeholders and the support of community members, the programme withdraws children from child labour, enrolls the children in school and retains the children until Class 12. Taking democratic actions to empower the community-based stakeholders, through a rights-based approach, this model breaks the systemic barriers of oppression, in access to rights and injustice. | No | Through this programme, around 13,000 child labourers were withdrawn from work and around 47,000 children were mainstreamed for education. Apart from this, the programme works in reducing child marriage, creating child leaders and infrastructure development in intervention areas. | https://satyarthi.org.in/bal-mitra-gram/ |
| 10 | Kailash Satyarthi Foundation | Delhi | Bal Mitra Mandal (BMM) | To ensure that every child is safe, free and educated. | BMM empowers children and their communities to collectively work towards securing their rights and protect them from child labour, child sexual abuse and raise their awareness on education, water, sanitation, hygiene and livelihood, through democratic actions. | No | 15,000 children empowered through the programme. | https://satyarthi.org.in/bal-mitra-mandal/ |
| 11. | Katha | Delhi | Katha Lab School | To make learning relevant for children and empower them to become agents of change in their communities. | Katha Lab School comprises: Creche for children aged 6 months to 3 years, which provides a vibrant play and learning space for community infants and toddlers; Phulwari, which caters to children aged above 3 years with special needs to integrate them into the mainstream school; preschool for children aged 3–5 years that uses a curriculum specially developed for the needs of preschoolers who are first-generation learners; junior school for children in Classes 1–5, using curriculum that integrates traditional learning in maths, sciences and language with a theme-based education, taking a hybrid approach of online means as well as physical teaching at community spaces; secondary school for children in Classes 10–12. Katha Lab Schools use active story-based learning and teachers creatively engage students and foster in them a life-long love of learning through discussion, debate, theatre, dance, fine arts, sports, music, and film. | No | Katha has supported more than 100,000 children. | https://www.katha.org/katha-lab-school/ https://csrbox.org/India_organization_project_Delhi-Katha-Lab-School-(A-high-quality-low-cost-community-school-for-most-marginalized-children)_9337 |

| No. | Organization | Geography | Programme | Objective | Intervention | Evaluation | Outcome of the programme | Project website |
|-----|---------------------|-----------|--|---|---|------------|--|---|
| 12. | MV Foundation (MVF) | Bihar | Ending Child Labour & Ensuring Children's Right to Education | End child labour and ensure children's schooling. | The programme focuses on social mobilization of the community, encourages enrolment and retention drives in favour or children's right to education and access to anganwadi centres and other services provided by government, establishes Child Rights Protection Forums amongst the active members of the community, who act as watchdogs for rescuing children from child labour, stopping child marriages, migration of children and act as a pressure group for resolving issues and bringing them to the notice of the government, involves gram panchayats and the community in getting every child into schools in their respective gram panchayats and enlists school teachers and the school management committees to propel action among them to support enrolment and retention of children in schools. | Yes | 7,787 children were mainstreamed into schools. From all the five blocks, 385 young girls and boys aged 15–18 years were motivated to join vocational education. Of these, 156 (41%) are girls. | https://mvfindia.in/portfolio/ending-child-labour-childrens-right-to-education-in-bihar/ |

| No. | Organization | Geography | Programme | Objective | Intervention | Evaluation | Outcome of the programme | Project website |
|-----|---------------------|-----------|--|--|---|------------|---|---|
| 13. | MV Foundation (MVF) | Telangana | Gender Equality and Adolescent Girls' Education | To bring about change in social norms in favour of girls' education, gender equality and against gender violence. | MVF adopts an area-based approach of tracking all children in the 11–18 age group and ensures that there is universalization of education up to 18 years. Every child is tracked, followed up and retained in all 74 high schools, 7 Kasturba Gandhi Balika Vidyalayas, 3 model schools and 19 junior colleges in the area to continue education up to 18 years of age. MVF enables voices of girls being heard through gender committees in schools and the girls' committees in villages. The entire community, local institutions such as the gram panchayats, and women's groups are contacted through a process of social mobilization to support girls in bringing about transformation in their lives. Boys and local youth clubs are effective participants in changing social norms. There is also an active engagement with the system and its functionaries at all levels, which includes anganwadi centres, schools, hostels, residential schools as well as the departments of labour, police, child welfare, education and so on. | Yes | The arguments of parents, such as 'safety of girls', distance to school, pressure of marriage, or asking the girl to discontinue education and opt for 'tailoring courses', were replaced by new questions of 'where is my daughter going to study?', 'will she get a seat in the hostel?', etc. There was no pressure on the girl to get married or a debate on 'why education?' Girls began to visit friends' houses, cutting across caste barriers and even their male classmates to share textbooks, homework and notes. Girls are able to engage with their parents to support their aspirations for higher education and against child marriage, negotiate with boys to stop them from harassing them sexually, talk to gram panchayats about their grievances and speak fearlessly to the police department, taking up specific issues of violence and sexual abuse. School teachers are more sensitive, listen to girls and their problems and corrected practices of gender discrimination in the schools by letting girls and boys play together and participate in co-curricular activities. | https://mvfindia.in/portfolio/developing-skills-of-adolescent-children/ |
| 14. | MV Foundation (MVF) | Bihar | Quality Education to Achieve Universal Retention in Government Schools | Create awareness against child labour, motivate scheduled castes, backward, musahir and other dalit communities to send their children to schools and create a consensus in its entire area of operation in favour of children's right to education. | The major interventions in the programme have been monitoring retention of children in schools through the school management committees, giving technical support to the state-run Residential Bridge Course camps and mobilizing communities to strengthen the school system. | No | Special programmes and strategies reaching out to 6,800 children in 32 tolas of backward Musahir communities; 38 one-day camps were held for motivating 8,000 children to join and continue schooling; 8,795 children enrolled in schools. | https://mvfindia.in/portfolio/quality-education-to-achieve-universal-retention-in-government-schools-2010-to-date/ |

| No. | Organization | Geography | Programme | Objective | Intervention | Evaluation | Outcome of the programme | Project website |
|-----|---------------------|--|------------------------------------|--|---|------------|---|---|
| 15. | MV Foundation (MVF) | Telangana | Residential Bridge Course Camp | Rescue and rehabilitate female child labourers and mainstream them into formal schools. | The project identifies girls and boys who are out of school and convinces parents through a continuous process of contact and motivate them to join the residential bridge course camps. | No | Reached out to 38,474 children. | https://mvfindia.in/portfolio/residential-bridge-course-camp/ |
| 16. | Pratham | Maharashtra, Gujarat, Rajasthan, Bihar, Uttar Pradesh, Uttarakhand, Andhra Pradesh and Telangana | Parent Education Programme | Develop skills and knowledge of parents to improve children's development; skills include storytelling, free conversations, picture reading, numerical skills; and knowledge domains include child development, health, nutrition, child safety. | Activities on promotion of health, hygiene and food habits among kids; social and emotional development, responsible parenting practices, teaching basic concepts in maths through fun learning techniques like picture recognition, subtraction and addition through objects, etc. Programme was conducted for parents of the children in the age group of 3–8 years. They were given worksheets, which involved the children as well, so that they could solve them together. For the parents who could not attend the community intervention workshop, a home visit is conducted to explain the daily happenings and give worksheets, etc. These activities try to involve parents in the day-to-day activities of the children. | No | Not available | http://prathammbai.org/PEP.aspx |
| 17. | Pratham | Pan-India | Teaching at the Right Level (TaRL) | Ensure every child has opportunity to learn. | The approach has been designed primarily for those who have reached Classes 3–5 but are well behind their expected level of achievement, according to the 'grade-appropriate' curriculum used in government schools; it focuses on building basic reading and arithmetic skills. Students are grouped by their actual (rather than expected) learning level, and frequently tested. The method also utilizes interactive and attractive materials that have been designed by Pratham and are constantly updated. | Yes | In 2017/18, Pratham had partnerships in 15 states and reached 6.7 million children. In 2018/19, Pratham continued to work in 15 states and reached 15.6 million children. RCTs of different and evolving Pratham models carried out by JPAL over the last 20 years show the effectiveness and impact of this work on children's learning. | https://www.pratham.org/programs/education/elementary/ |

| No. | Organization | Geography | Programme | Objective | Intervention | Evaluation | Outcome of the programme | Project website |
|-----|-----------------|--|---|---|---|------------|---|---|
| 18. | Room to Read | Himachal Pradesh, Uttarakhand, Uttar Pradesh, Rajasthan, Gujarat, Madhya Pradesh, Jharkhand, Chhattisgarh, Maharashtra, Telangana, Karnataka, Andhra Pradesh | Room to Read India's Literacy Programme | Develop literacy skills and reading habits at primary grades. | The programme includes two main components: (1) reading and writing instruction for children in Classes 1 and 2; and (2) access to reading materials through the establishment of school libraries. | Yes | 14.3 million children benefitted; 37,000 partner schools; 1,582 books published; 26 million books distributed. | https://www.roomtoread.org/media/qzhp2itb/room-to-read-2018-literacy-rme-report.pdf |
| 19. | Teach for India | India | Fellowship programme | To build a growing movement of leaders, Teach for India runs a two-year fellowship and supports an unstoppable alumni movement. | The Teach for India Fellowship is an opportunity for India's brightest and most promising youth, from the nation's best universities and workplaces, to serve as full-time teachers to children from low-income communities in under-resourced schools. | No | More than 120,000 young people have applied to the Teach for India Fellowship and, currently, there 900+ Fellows impacting over 28,000 students in 250 under-resourced schools in India. There are 6,200 student alumni. Since inception 12 years ago, Teach has infused the system with more than 3,400 alumni who have been running their own schools and organizations, training teachers, designing policy and continuing to serve within classrooms, non-profits, and corporate institutions. Most importantly, they're working together to collectively build a better India. | https://www.teachforindia.org/ |

Annex 3: Exclusion and inclusion criteria

| Include/exclude | Reason |
|--|--|
| Promising strategies that can strengthen the role of education in eliminating child labour in India | |
| Include | <ul style="list-style-type: none"> ■ Reported education outcome and/or labour/employment-related outcomes for children aged below 18 years in India ■ Formal interventions, natural experiments addressing policy change, programme impact on education outcomes, child labour ■ Peer-reviewed studies with rigorous research design, such as RCTs, regression discontinuity, instrumental variable analysis, quasi-experimental design or interrupted time series to measure the effects ■ With geographic focus on India ■ Published during 2000–2020 |
| Exclude | <ul style="list-style-type: none"> ■ Systematic reviews, qualitative studies ■ Theoretical studies about policy change, without empirical evaluation ■ Review of intervention/schemes ■ Published in other than English language |

Annex 4: Brief description of 30 studies retained in the synthesis

| No. | Citation (intervention type) | Geography | Type of intervention and intervention strategy/ descriptors | Study design, sample size, attrition | Outcome and effect size |
|-----|---|----------------|---|---|--|
| 1. | Afridi, 2011 (school feeding) | Madhya Pradesh | Transition of the midday meal (MDM) scheme from a take-home ration (monthly provision of free, raw food grains) to providing free cooked meals at school | Natural experiment. Panel data from schools was used to compare the difference in participation before and after the change in MDM delivery mode within the first six months of a new academic year to that of a control group whose programme participation status remained the same during this period. Restricted to 64 public primary schools; treatment group has 41 schools where cooked school meal programme was adopted. These schools were distributing raw food grains until July. The remaining 23 schools did not change their implementation status during this period, served as control. | Attendance: Significant effect of the introduction of cooked school meals on daily school participation was observed for girls and children from lower grades. Average monthly attendance rate of Class 1 girls was more than 12 percentage points higher due to programme transition. The impact on attendance at higher grades was insignificant. Enrolment: No impact of on-site school meal programme on enrolment levels was found. |
| 2. | Afridi et al., 2016 (school feeding) | Delhi | Midday meal programme transition from ready-to-eat snacks to cooked meals | Natural experiment. Child-level panel data from schools which implemented this transition in two phases, so phase 1 schools were considered as treatment group and phase 2 schools were control. Attendance and administrative records of over 1,500 students in 19 randomly sampled municipal schools in Delhi. | Attendance rates increased by 3–4 percentage points by transition to cooked meals. Effect of meal type transition improved attendance among lower grades/young children. Attendance was higher in schools that served diverse menus and schools that operate in the morning as opposed to afternoon shifts. |
| 3. | Andrew et al., 2019 (child skills- and parental awareness-building) | Rajasthan | Life skills training, guided by mentors + community dialogue with parents Arm 1: Life skills training, facilitated by mentors + community dialogue (Call for Action Events) Arm 2: Control – only community dialogue (Call for Action Events) | RCT sample consisted of girls aged 12–17 years At baseline, N=5,921. At endline, N=5,150 girls, giving a follow-up rate of 87.0%. | School enrolment: Arm 1 increased the probability of girls aged 17–19 years being at school at endline by 4.0 percentage points (p=0.014). |

| No. | Citation (intervention type) | Geography | Type of intervention and intervention strategy/ descriptors | Study design, sample size, attrition | Outcome and effect size |
|-----|---|---------------------------|---|--|---|
| 4. | Baland et al., 2020 (livelihood & microfinance support) | Jharkhand | Participation in self-help groups (SHGs) by households Study examines the role of mothers' participation in SHGs on the secondary education and work activities of their children. | Quasi-experimental design with panel data, three waves of data collection took place between 2004 and 2009. In four geographies across all of Jharkhand, 24 villages were randomly selected for SHG programme between April and June 2002, and 12 other villages from the same districts were randomly selected as controls. In each SHG village, 18 SHG member households and 18 non-member, and from control villages also 18 households were randomly selected – a total 1,080 households were interviewed three times. | School enrolment: Positive effect on enrolment was found on children 6–17 years by the end of the last round by an increase of 20 percentage points. School discontinuation: Dropout rates at entry in secondary school in the last round are much lower for treated children, by about 15 percentage points. Child work: No impact of SHG on the total number of hours worked by children, although the number of working hours declined, which implied that children were working for a shorter period of time in paid work activities and working more in domestic works. |
| 5. | Banerjee et al., 2015 (livelihood & microfinance support) | Hyderabad, Andhra Pradesh | In 2005, the intervention was launched where microfinance institutions named Spandana were opened in half of the randomly selected poor neighbours; Spandana is a group loan product, where the group comprises 6–10 women. The first loan is of Rs. 10,000, about \$1,000 at 2007 purchasing power parity. If all members of a group repay their loans (within 50 weeks), they are eligible for second loans of Rs. 10,000–12,000; loan amounts increase up to Rs. 20,000. | RCT. 52 out of 104 slums in Hyderabad. 65 households in each neighbourhood were surveyed, for a total of about 6,850 households 15–18 months after the introduction of microfinance Two years after the first endline survey, they surveyed the same households. Both Spandana and other organizations had started lending in both the treatment and control groups by that time. | School enrolment: There is no difference in the probability of children or teenagers enrolling in school between the treatment and control groups and no impact on private school versus public school enrolment. Education expenditure: There has been no impact on education expenditure or private school fees. |

| No. | Citation (intervention type) | Geography | Type of intervention and intervention strategy/ descriptors | Study design, sample size, attrition | Outcome and effect size |
|-----|---|--|---|---|---|
| 6. | Banerjee et al., 2016 (improved pedagogy; remedial education) | Bihar, Uttarakhand, Haryana, Uttar Pradesh | <p>Teaching at the Right Level (TaRL) pedagogy.</p> <p>Bihar and Uttarakhand – summer camps, materials, teacher training, and volunteers.</p> <p>First intervention: Involves the distribution of Pratham materials with no additional training or support (referred to as the materials (or M) treatment) (implemented only in Bihar);</p> <p>Second intervention: Includes materials, as well as training of teachers in Pratham methodology and monitoring by Pratham staff (referred to as the teachers and materials (TM) treatment);</p> <p>Third intervention: Includes materials, training, and volunteer support (TMV) treatment. In addition to the materials and training components of the other interventions, in the TMV treatment villages, volunteers were recruited to provide additional support, especially in working with children who needed the most help with basic reading and arithmetic.</p> <p>Haryana – teacher training with supervisory support and dedicated school hour.</p> <p>Intervention: The government schoolteachers, guided by Associate Block Resource Coordinators (ABRCs), administered a brief oral assessment of each student’s reading ability in Hindi to group children by level for the ‘special period’ during the school day. During the extra hour, in TaRL schools, all children in Classes 3–5 were reassigned to ability-based groups and physically moved from their grade-based classrooms to classrooms based on levels determined.</p> <p>Continuous and comprehensive evaluation (CCE) involved training government teachers to regularly assess and provide highly detailed feedback on student performance across both curricular and extracurricular activities.</p> <p>Uttar Pradesh – in-school learning camps.</p> <p>Intervention: All children were grouped according to their existing level of learning achievement, and the activities and material were designed to move children to the next level on the ASER test. Pratham staff also regularly monitored the camps in each school and assisted the volunteers in administering the camps.</p> | <p>Randomized controlled trial. Multiple randomized evaluations in which a core pedagogical approach was implemented at different points of time, with differences in delivery method (government schoolteachers, or Pratham staff or volunteers), duration (intensive camp mode, or daily instruction over the course of the school year), and location (in school or in the communities).</p> <p>Bihar and Uttarakhand – included teachers and children from Classes 1–5.</p> <p>In the Bihar sample, schools in about 120 villages were randomly assigned to receive summer camps, while 40 served as a control group and were not offered a summer camp. In Uttarakhand, none of the villages received summer camps, and they were randomly assigned to the control group, TM or TMV, with about 40 villages in each group. Overall, approximately 5,200 households with 12,300 children were included in Bihar (about 33 households per village) and 4,050 households with 8,900 children in Uttarakhand (about 35 households per village).</p> <p>Haryana – targeted children in Classes 3–5 in school.</p> <p>400 schools were randomly drawn from a list of all 467 government schools located in the four blocks of Haryana.</p> <p>Uttar Pradesh – targeted children in Classes 3–5 in school.</p> <p>Sample schools in four blocks of Sitapur and Unnao were selected and randomly divided into either a 10-day camp treatment, a 20-day camp treatment, a treatment group that received only Pratham learning materials, or a control group, with approximately 120 schools in each group.</p> <p>Attrition ranged from about 2.1% in Uttar Pradesh, to as high as 20% for the M and TM intervention groups in Bihar. Attrition is not significantly related to treatment group assignment in any location.</p> | <p>Children’s performance: Performance on the ASER language and maths tests.</p> <p>Average Hindi test scores range from about 1.1 in the Bihar sample (just above the letter level), to 1.6 in Haryana (between the letter and word levels). Maths test scores average below 1 (one-digit number recognition) in all four areas.</p> <p>The Uttarakhand, Haryana, and Uttar Pradesh samples show no significant differences across these variables (at the 10% level). On the other hand, in the Bihar sample, for three out of six variables, the F-test rejects equivalence across treatment and control groups at the 5% level.</p> <p>Bihar – Only the combined TMV intervention resulted in a statistically significant increase in test scores, with a 0.13 standard deviation increase in language and a 0.11 standard deviation increase in maths.</p> <p>Uttarakhand – Neither the TM nor the TMV interventions resulted in statistically significant increases in language or maths scores.</p> <p>Haryana – TaRL intervention resulted in a 0.15 standard deviation increase in language test scores (significant at the 1% level). The programme did not focus on mathematics at all, and had no significant impact on maths test scores.</p> <p>Uttar Pradesh – The 10-day camp intervention increased both language and maths test scores by 0.7 standard deviations, while the 20-day camp intervention increased language and maths test scores by 0.6 standard deviations.</p> |

| No. | Citation (intervention type) | Geography | Type of intervention and intervention strategy/ descriptors | Study design, sample size, attrition | Outcome and effect size |
|-----|---|-------------|--|--|--|
| 7. | Banerjee et al., 2011 (livelihood & microfinance support) | West Bengal | Bandhan's 'Targeting the Hard-core Poor' (THP) programme. Identified 'ultra-poor' households; half of the potential beneficiaries are randomly selected to receive assets (livestock and inventory). 18 months after receipt of the asset, the beneficiaries are provided micro finance and become eligible for regular microfinance loans provided by Bandhan. | RCT. 1,000 eligible households identified. 1st wave: survey in February 2007 through March 2008 of identified households. 991 households were surveyed at baseline, of which 512 (51.66%) were randomly selected for programme participation and 466 did not receive any offer. Out of 978 households (after attrition), 812 (83%) were re-surveyed in the endline, 18 months after the asset transfer. | Child's time use: The study found no statistically significant differences in how children residing in treatment and control households spent their time on household chores, leisure activities, working and studying. |
| 8. | Bhat, 2017 (compulsory universal education laws) | India | Right to Education (RTE) Act | Difference in Differences (DID) estimates. The causal impact of RTE on literacy and numeracy rates in rural government schools. Uses data from the 2007–2014 Annual Status of Education Reports (ASER). | Learning outcomes: Some positive effects on reading and maths skills in Class 1, but consistently negative results in all the other grades in public schools. RTE is found associated with up to an 8 percentage point increase in likelihood that a student cannot read. |
| 9. | Bonds, 2012 (school feeding) | India | Midday meal programme Initially launched in 1995 in 2,408 blocks across the country, later extended nationwide in 1997. In September 2004, the programme transitioned from raw grains to cooked meals. | Quasi-natural experiment. Propensity-score matching (PSM) used to estimate the causal effect of the midday meal programme on school participation. Recipients of the midday meal were matched to non-recipients of the programme on the basis of their propensity score conditional on a vector of observed covariates. Using a dataset from India's 2004 Socio-Economic Survey, 79,558 primary school-aged children were selected across the country, out of which 26,059 children from unaided and aided private schools reported receiving midday meal. | School enrolment: Increased educational enrolment by 22.68 percentage points (among beneficiaries both in public and private school) and by 29.53 percentage points (among beneficiaries in only public school) compared with non-beneficiaries. School attendance: The programme effect on attendance rates of children is positive and stronger for children with the least educated parents and the effect weakens with higher education of the parents, significant for both mother's and father's education. Conditional on the highest expenditure centile, the midday meal programme results in 8.22 percentage point average increase in attendance rates. The effect increases with each decrease in expenditure level, ranging from a 15.58 percentage point average increase in the ninth centile, to a 32.13 percentage point average increase in the second centile. Finally, in the lowest income centile, we see that receipt of the midday meal programme is associated with a 37.78 percentage point increase in attendance. |

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| 10. | Borkum et al., 2013 (free school material) | Karnataka | Library programme for government primary schools. All government primary schools in Bangalore were upgraded by hiring trained librarians in primary schools, with libraries hub and spoke network. Hub is a physical room for the library, whereas a spoke network of libraries had a programme implementer choose hubs based on size, geographic location and the availability of a room to house a library. The remaining schools became spokes of a nearby hub, with each hub attached to up to seven spoke schools. | RCT. 386 schools were randomly selected from all of the public primary schools in Bangalore and divided between a treatment and a comparison group. Students' language skills were determined using a baseline evaluation, and a follow-up test was administered 16 months later to track their progress. | School attendance: No effect. Learning outcomes: No impact on students' scores on a language skills test administered after 16 months. The method of treatment, however, does seem to matter – physical libraries have no effect, while visiting librarians actually reduce test scores. |
| 11 | Chakraborty and Jayaraman, 2019 (school feeding) | India (rural) | Midday meal programme | Quasi-natural experiment. Used intention-to-treat (ITT) framework to examine the effect of potential Midday meal exposure on test scores. Repeated cross-sectional data from the Annual Status of Education Report (ASER) surveys from 2005 to 2012 pertaining to children aged 6-10 enrolled in government school or not enrolled in school (1.24 million children in 24 states and union territories) were used. | Learning outcomes: Exposure to midday meals for the nearly five-year duration of primary school increased test scores by 18% (0.17) for reading and 9% (0.09σ) for math relative to children with less than a year of exposure. |
| 12. | Das et al., 2013 (free school material) | Andhra Pradesh | Andhra Pradesh Randomized Evaluation Study (APREST)- school block grant (BG) programme implemented after the baseline survey in late June and early July 2005. A school block grant of Rs. 125 per student per year (two-year programme) to be spent on non-teacher and non-infrastructure inputs directly to be used by students. First year – Surprise grant (exogenous) for schools, thus unanticipated for teachers and parents. Second year – Grant exogenous but now anticipated by both teachers and parents. | Randomized experiment. 200 schools in 5 districts of Andhra Pradesh. 100 in intervention arm, 100 in control arm. | Learning outcome: Students in intervention schools scored 0.09 standard deviations (SD) higher than students in comparison schools at the end of the first year of the programme for mathematics, and 0.08 SD higher for Telugu; in the second year the effect weakens but is still positive (at 0.04 SD and 0.07 SD higher in intervention schools compared with control schools, for mathematics and Telugu respectively). Household education spending significantly drops by 0.85 dollars in the second year. |
| 13. | Dixon et al., 2011 (improved pedagogy) | Hyderabad, Andhra Pradesh | Teacher training programme to assess the effect of the teaching methods (phonics) on children's learning outcomes (language arts). Experiment included the use of synthetic phonics from Jolly Learning Ltd, with a lesson plan and a sequential lesson pattern designed as per the project. The package used in the learning group classrooms included worksheets to practise writing the letters, flash cards, blending cards, story books. | Quasi-experimental design. 20 private unaided English-medium schools in the notified slum areas. In the treatment arm, 265 children from 14 schools were included, and in control arm 241 children from 6 schools were included. | Learning outcomes: Significant improvements observed in the test scores of students experiencing the phonics method. Compared with control group in all 5 types of assessment on reading and spelling and the ability to sound out letters and words' test. Girls outperform boys in the reading and spelling test. For all the outcomes, the impact of the intervention was stronger for younger pupils. |

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| 14. | Duflo et al., 2012 (teacher training, hiring and incentives; School-based governance/ community-based monitoring) | Rajasthan | Teachers' attendance monitored daily using cameras, and attendance-based salaries. | RCT. 120 schools to participate, with 60 randomly selected schools serving as the intervention group and the remaining 60 as the comparison group. | <p>School attendance: No difference in child's attendance rate.</p> <p>Learning outcomes: As a result of teachers' monitoring, the students in treatment schools benefited from about 30% more instruction time. Thus, significant impact on test scores: after one year observed. Child test scores in intervention schools were 0.17 SDs higher than in comparison schools.</p> <p>Teachers' absenteeism: Immediate and long-lasting improvement in teacher attendance rates in treatment schools. Over the 30 months in which attendance was tracked, teachers at intervention schools had an absence rate of 21%, compared with 44% baseline and 42% in the comparison schools.</p> |
| 15. | Duflo et al., 2015 (improved pedagogy; remedial education; teacher training, hiring and incentives) | Haryana | <p>Continuous and comprehensive evaluation (CCE). Learning enhancement programme (LEP).</p> <p>Sampled primary schools were randomly assigned to programmes as: (1) CCE alone, (2) LEP alone, (3) CCE and LEP together, or (4) no treatment (control group).</p> <p>Upper primary schools assigned programmes as: (1) CCE alone or (2) no treatment (control group).</p> | <p>Randomized evaluation.</p> <p>400 primary schools (12,576 children from Classes 1–4). 100 upper primary schools (3,262 students from Class 7).</p> <p>Attrition low: able to capture information from 95.3% of primary school students and 92.0% of upper primary school students of the baseline sample.</p> | <p>Learning outcomes: Students in primary school in LEP schools scored 0.15 standard deviations higher in oral Hindi, and 0.135 standard deviations higher in written Hindi compared with control schools.</p> <p>No significant effect on oral or written maths scores in LEP schools.</p> <p>CEE alone and LEP and CEE combined schools had no significant improvement in oral or written scores of both Hindi and maths, compared with control schools.</p> <p>No significant improvement in upper primary schools in either Hindi or maths scores.</p> |

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| 16. | Edmonds et al., 2021 (child skills- and awareness-building) | Rajasthan | <p>Life skills training. The intervention of interest is the Girls' Education Programme (GEP), a programme encompassing twice-monthly life skills classes conducted in school as well as group mentoring sessions for girls. The programme is delivered by social mobilizers, women from the area who have completed secondary school and who are managed, trained and deployed by our partner NGO, Room to Read (RtR). The intervention targets girls beginning in Class 6, and was newly rolled out to 60 randomly selected treatment schools in 2016.</p> <p>Primary purpose of the programme was to advance the education of girls.</p> | <p>RCT in 112 schools of Ajmer district in Rajasthan. Adolescent girls aged at least 11 years or more in 60 schools were exposed to bi-monthly life skills classes conducted in school and small group discussions.</p> <p>Intervention duration was two years (2016–2018). Endline survey was conducted with girls and their household members following Class 7, after two full years of programme exposure; a total of 2,435 girls relative to the original sample of 2,459 were interviewed, which suggests an attrition rate of less than 1%.</p> <p>The evaluation tried to answer if the exposure to life skills education and mentoring delivered by a social mobilizer had an effect on school dropouts, grade progression, learning outcomes and an influence on the understanding and expression of life skills. Does life skills education and mentoring delivered by a social mobilizer alter child labour among beneficiary girls?</p> | <p>Dropout rates and grade progression: Following two years of treatment, the endline survey conducted at the end of Class 7 documented that the GEP effectively reduced dropout and an increased grade progression: girls from treatment schools were 4 percentage points less likely to have dropped out at endline (after Class 7), corresponding 13 percentage points dropout from girls in control schools.</p> <p>Learning outcomes: Assessment using ASER tools by endline suggested no effect of the intervention on learning.</p> <p>Child labour: No effect of treatment observed on 10 survey-based measures (child work, work for pay, worst form of child labour, hazardous child labour, child labour, child work outside of family, total working hours, working hours (economically active), hours spent in unpaid household services, hours active outside house) that characterize extensive and intensive child labour.</p> <p>Other ancillary outcomes: Support of a mentor and life skills curriculum helped girls cultivate leadership-oriented skills after just two years through the Girls' Education Programme.</p> |

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| 17. | IDinsight, 2018 (parental awareness-building; improved pedagogy; remedial education; school-based governance/ community-based monitoring) | Rajasthan | <p>Educate Girls programme (3-year programme).</p> <p>Enrolment: Includes identification of out-of-school girls through door-to-door surveys, explanation of the value of schooling to their parents and to the community, and multichannel engagement with households with unenrolled girls. Educate Girls also uses multiple interventions to improve school attendance and prevent dropouts, such as frequent parent counselling sessions and working with school management committees to improve school infrastructure.</p> <p>Learning: Educate Girls trained volunteers to deliver a child-centric curriculum one to five times a week to boys and girls in Classes 3–5. Volunteers were incentivized with a small number of skill and career development opportunities, such as free English classes and the possibility of being hired by EG in the future. In year 3, EG rolled out a new curriculum called ‘Gyan Ka Pitara’ (‘Knowledge Box’) in which EG increased the number of teaching sessions per day and conducted home visits to reach students who were frequently absent from school or who needed remedial tutoring.</p> | <p>Clustered (village-level) randomized controlled trial.</p> <p>At baseline, assessed students in Classes 1–5 and at endline who were then in Classes 3, 4, and 5 (the target grades for Educate Girls programming). Out of a sample of 8,237 students (4,211 in treatment, 4,026 in control), 7,655 students successfully assessed in Classes 3–5, or 93% of all sampled students (92% in treatment, 93% in control).</p> | <p>Learning gains of students enrolled in Classes 3–5: Students in treatment villages gained an additional 8,940 ASER learning levels relative to students in control villages, representing 160% of the final. The effects of the Educate Girls programme on learning gains were large and statistically significant over the three-year programme: On average, students in EG schools gained an additional 1.08 ASER levels compared with students in control schools ($p < 0.01$). Learning gains for students in EG schools are 28%, or 0.31 standard deviations larger than gains for students in control schools, comparing favourably with primary school programmes aimed at improving test scores in rural India.</p> <p>Enrolment of out-of-school girls: EG enrolled 768 out-of-school girls, representing 92% of the 837 eligible out-of-school girls. EG exceeded the enrolment target of 79% by 13 percentage points, or 16%.</p> |
| 18. | Jayaraman and Simroth, 2015 (school feeding) | 18 states covered by Unified District Information System for Education | Midday meals | <p>Quasi-natural experiment using DISE.</p> <p>A three-year balanced panel of 506,125 schools over the academic years 2002/03 to 2004/05.</p> <p>6–10-year-old children in primary schools, studied according to grades (up to Class 5) across 506,125 schools.</p> | <p>School enrolment: Primary school enrolment increased by 6.6%. If newly enrolled children were all of primary-school age (6–10 years), this would imply that midday meals increased the net primary school enrolment rate from 84% (in 2002) to 89.5%.</p> <p>There was an overall increase in Classes 1 and 2, where enrolment rose by 18% and 9%, respectively. Enrolment responses in Classes 3, 4 and 5 are, by contrast, more muted. The magnitude of the Class 1 effect is consistent with the fact that never-enrolled children are mainstreamed in Class 1, regardless of age.</p> |

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| 19. | Jensen, 2012 (parental awareness-building) | Delhi and neighbouring states | <p>Non-traditional vocational skills training + soft skills training + job search skills and placement support.</p> <p>Information on Business Process Outsourcing opportunities offered by recruiters, single 6-hour session imparting information and soft skills (how to apply for jobs, interview skills, mock sessions, tips for interviews, assessment of English language skills, preparing resumé, etc); repeated annually for 2 more years.</p> | <p>RCT.</p> <p>Approximately 3,200 households from 160 villages.</p> | <p>School enrolment: After 3 years, girls aged 6–17 years, in villages exposed to the programme, were 5 percentage points ($p < 0.01$) more likely to be enrolled in school.</p> |
| 20. | Joddar and Cooper, 2017 (improved pedagogy) | Chhattisgarh, Rajasthan and Uttarakhand | <p>Room to Read's Literacy Programme.</p> <p>School-based intervention that seeks to develop children's reading skills and reading habits in the early grades.</p> <p>The programme includes two main components: (1) reading and writing instruction for children in Classes 1 and 2. The programme intends to provide a strong foundation in reading and writing skills for all children in Room to Read-supported schools, with the goal that children will become fluent readers by the end of Class 2; and (2) access to reading materials through the establishment of school libraries.</p> | <p>Quasi-experimental design that includes children from schools that benefit from the Literacy Programme (project schools) and children from schools that do not benefit from the Literacy Programme (comparison schools).</p> <p>Reading assessments to Class 2 children at 75 schools targeted by the programme and 75 comparable schools not targeted by the programme.</p> <p>For the baseline, a total of 1,875 children were tested (982 from project schools and 893 from comparison schools). For the midline, a total of 1,760 children were tested (919 from project schools and 841 from comparison schools). For the endline, a total of 1,815 children were tested (933 from project schools and 882 from comparison schools).</p> | <p>Learning outcomes: Literacy Programme is having a large positive impact on reading skills. Children in intervention schools experienced gains in learning that were two to three times larger than those experienced by comparison school children from the beginning of Class 1 to the end of Class 2.</p> <p>Approximately 29% of children from project schools met or exceeded the fluency benchmark of 45 words per minute by the end of Class 2 (compared with only 5% comparison school children). Moreover, differences between the oral fluency scores of children from project and comparison schools were statistically significant ($p < 0.001$). Both boys and girls benefited significantly from the Literacy Programme.</p> <p>Project school children in Chhattisgarh performed the best, while project school children in Rajasthan experienced the largest two-year gains relative to comparison school children.</p> |

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| 21. | Lakshminarayana et al., 2013 (parental awareness-building; remedial education) | Andhra Pradesh | <p>Remedial education + community engagement.</p> <p>A community of volunteers from the intervention area were selected by the parents and trained by the implementing NGO to provide remedial education after school to children in maths and language skills. An outreach programme informed parents about the programme and ensured their cooperation. Learning materials were also provided.</p> <p>In addition to the first intervention, the girl students were also provided a kit of materials, including a pair of uniforms, shoes, socks, undergarments and a school bag, intended to improve attendance and performance in school.</p> | <p>Cluster RCT.</p> <p>4,006 children from 53 villages in education arm; 4,461 children from 54 villages in education + kits for girls arm.; 8,114 children from 107 villages in control arm.</p> | <p>Learning outcomes: Children from villages in the educational intervention groups had significantly higher composite test scores than in control villages at the end of the trial, and this difference was statistically significant (mean difference 15.8; 95% CI 13.1 to 18.6; $p < 0.001$). This effect appeared larger for girls than boys.</p> <p>Similar benefits of the intervention were seen for the secondary outcomes of individual maths and language test scores, both for all children and for boys and girls separately. This effect appeared larger for girls than boys, although as with the composite score, differences between intervention and control were less marked and no longer statistically significant after adjustment for baseline scores.</p> <p>The effect of providing the materials kit to girls was a 0.5 percentage point increase in composite test scores at the end of the trial relative to the scores of girls in villages which did not receive kits. This difference is not statistically significant.</p> <p>Composite test scores were not significantly different in the 54 villages (614 girls) with the additional kits for girls compared with the 53 villages (636 girls) without these kits at the end of the trial (mean difference on a percentage scale 0.5; 95% CI -4.34 to 5.4; $p = 0.84$).</p> <p>The cost per 0.1 SD increase in composite test score for intervention without kits is Rs. 382.97 (£4.45, \$7.13), and Rs. 480.59 (£5.58, \$8.94) for the intervention with kits.</p> |

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| 22. | Mitra and Moene, 2017 (bicycle scheme) | Bihar, Jharkhand and Uttar Pradesh | <p>Cycle scheme – Mukhyamantri Balika Cycle Yojana. The Mukhyamantri Balika Cycle Yojana (referred to as the cycle programme) was initiated by the Government of Bihar in 2006. Under the scheme, every girl who enrolled in Class 9 would receive a cash amount of Rs. 2,000 (later increased to Rs. 2,500) to buy a cycle that she would use to go to school.</p> | <p>Outcomes of girls who benefited from the cycle programme was compared with those that just missed it, being older by a few years (15–16 years as opposed to 13–14) in 2006.</p> <p>They were also compared with girls from Jharkhand and Uttar Pradesh, where there was no such scheme.</p> <p>Data was collected on 10,000 girls. A survey was conducted between January and April 2016 in three states – Bihar Jharkhand and Uttar Pradesh.</p> <p>Six districts in three states: Muzzafarppur and Madehpura (Bihar), Chatra and Giridih (Jharkhand), and Sultanpur and Ghazipur (Uttar Pradesh).</p> | <p>School completion: A girl on a cycle in Bihar is 27% more likely to have at least completed Class 10 than a girl who did not have access to the programme.</p> <p>Long-term impact on continuing education or completing Class 12: A girl who went to school after the cycle programme was introduced is 22.9% more likely to go ahead and complete Class 12 education than a girl who did not get a cycle.</p> <p>Work for pay choices: Beneficiary girls were less likely to be working (in agriculture). Girls with a cycle are 4.17% less likely to be working in agriculture.</p> <p>However, over 45% say that they would like to work, but their families do not give permission, and over 10% say that they have not found suitable work.</p> |
| 23. | Muralidharan and Sundararaman, 2011 (teacher training, hiring and incentives) | Andhra Pradesh | <p>Performance pay to teachers.</p> <p>Two types of teacher performance pay were studied: 1. group bonuses based on school performance, and 2. individual bonuses based on teacher performance, with the average bonus calibrated to be around 3% of a typical teacher’s annual salary.</p> | <p>RCT.</p> <p>300 government schools in 5 districts of Andhra Pradesh, 100 control, 100 with group bonus and 100 with individual bonus incentives.</p> | <p>Learning outcomes: The teacher performance pay programme was effective in improving student learning. After two years of the programme, students in incentive schools performed significantly better than those in comparison schools by 0.28 and 0.16 standard deviations (SD) in maths and language tests respectively.</p> <p>School-level group incentives and teacher-level individual incentives perform equally well in the first year of the programme, but the individual incentive schools significantly outperformed the group incentive schools in the second year.</p> <p>At the end of two years, the average treatment effect was 0.27 SD in the individual incentive schools compared with 0.16 SD in the group incentive schools, with this difference being nearly significant at the 10% level.</p> |

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| 24. | Muralidharan and Sundararaman, 2013a (teacher training, hiring and incentives) | Andhra Pradesh | <p>Extra contract teacher (ECT) programme part of the Andhra Pradesh Randomized Evaluation Study (AP RESt).</p> <p>After the baseline survey in July 2005, the selected schools were asked to hire (endogenous to school decisions) a contract teacher. Hired contract teachers in intervention schools had similar characteristics to other contract teachers in control schools.</p> | <p>RCT.</p> <p>200 government-run schools (100 schools in intervention arm, 100 schools in the control arm).</p> | <p>Learning outcomes: Average score of both maths and language tests for students in the intervention schools was 0.10 SD higher at the end of year 1 and 0.16 SD higher in year 2 compared with students in control arm. The two-year effect of extra contract teacher were similar: 0.16 SD for maths and 0.15 SD for language.</p> |
| 25. | Muralidharan and Sundararaman, 2013b (school vouchers) | Andhra Pradesh | <p>School voucher programme.</p> <p>The Andhra Pradesh School Choice Project (under AP RESt). The project provided vouchers for students attending free public schools to attend a participating private school of their choice for the entire duration of their primary education. Private schools could determine the number of places to be allocated to voucher students, but could not select the students.</p> | <p>Cluster RCT.</p> <p>180 villages with at least one private school. Of the 10,935 eligible households, 6,433 households applied for the voucher. A total of 3,097 households had applied in the treatment villages, from which 1,980 were selected by lottery to receive the voucher. 1,210 of 1,980 households accepted the voucher and enrolled in a private school at the start of the project.</p> <p>Attrition rate: The two-year attrition rate was 10% and 15% in the treatment and control groups, respectively, and the four-year attrition rate was 15% and 19% in the two groups.</p> | <p>Learning outcomes: At the end of two and four years of the programme, voucher lottery winners had slightly lower scores on Telugu and maths than lottery losers (not significant), and higher scores in English (0.19SD after two years, $p=0.02$, and 0.12SD after four years, $p=0.098$).</p> <p>However, analysis of school time use data reveals that private schools spend significantly less instructional time on Telugu (40% less) and maths (32% less) than public schools, and instead spend more time on English, science and social studies (EVS), and especially Hindi (not the main language in AP; but the most widely spoken one in India).</p> <p>After four years of the programme, small positive effects of winning the voucher on English (0.12σ; $p = 0.098$), and EVS (0.08σ; $p = 0.16$), and large, positive effects on Hindi (0.55σ; $p < 0.001$).</p> <p>Averaging across subjects, students who won a voucher scored 0.13σ higher, and students who attended private schools scored 0.23σ higher ($p < 0.01$).</p> |
| 26. | Muralidharan and Prakash, 2017 (bicycle scheme) | Bihar and Jharkhand | <p>Cycle scheme for girls enrolled in secondary school.</p> <p>The programme was launched by the Government of Bihar in 2006. Under the programme, girls who were enrolled in secondary school (Class 9) were provided a fund of Rs. 2,000 (~\$40) to purchase a bicycle. Later the amount was raised to Rs. 2,500 or ~\$50.</p> | <p>Difference in Differences and Triple Difference comparisons using District Level Household Survey 2007/08 in Bihar and Jharkhand.</p> <p>DID analysis comparing outcome across treated cohort, girls aged 14 or 15 in Bihar and the control cohort, boys of the same age group from Bihar. Triple difference (DDD) to assess the impact by comparing the double difference between state of Bihar and neighbouring state of Jharkhand (which did not have the cycle programme). Sample was restricted to children aged 14–17 living in the states of Bihar (18,453) and Jharkhand (11,842).</p> | <p>School enrolment: According to the Difference in Differences estimates, girls from treated cohorts were 9–12% point more likely to be enrolled in or have completed Class 9 relative to boys in the same cohorts.</p> <p>According to the triple difference estimate, the treated cohort has 5.2 percentage point higher probability to be enrolled in or completed Class 9 compared with same age group girls from Jharkhand (after controlling for demographic factors).</p> |

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| 27. | Nanda et al., 2016 (cash transfers) | Haryana | <p>CCT for girls conditional upon remaining unmarried until age 18 years.</p> <p>The programme offered two points of transfer: a small cash disbursement to mothers (INR 500) within 15 days of delivering an eligible girl, and a savings bond of INR 2,500 purchased by the government in the name of the girl on enrolment within three months of her birth. The bond was expected to grow to about INR 25,000 redeemable at age 18, provided the girl was not married.</p> | <p>Quasi-experimental design with mixed methods. Younger and older cohort (who were close to >18 years) of adolescent girls.</p> <p>Round 1: Older cohort: 5,694; younger: 4,444; mother: 9,556.</p> <p>Round 2: older cohort: 5,297; younger: NA; mothers: 5,241.</p> <p>Final analysis sample from round 2: older cohort.</p> <p>Attrition: 93%.</p> | <p>School completion: Beneficiary girls had a higher probability of completing Class 8 by 12 percentage points ($p < 0.05$) and of aspiring to study beyond Class 12 by 19 percentage points ($p < 0.05$).</p> |
| 28. | Prakash et al., 2019 (child skills- and awareness-building; parental awareness building; school-based governance/ community-based monitoring) | Karnataka | <p>Safe spaces + life skills + academic tutoring + boys' sports group for gender sensitization + community engagement + girl-friendly schools.</p> <p>Samata Intervention – Establishing safe spaces for low-caste adolescent girls to meet and develop life skills and encourage academic tutoring.</p> <p>Outreach programmes for the families of aforementioned participants to sensitize parents around girls' education, early marriage, and gender socialization, map vulnerability, linking families to government financial incentives for girls in school.</p> <p>Forming boys' sports groups to sensitize boys to appreciate girls' rights and treat girls respectfully.</p> <p>Connect with community leaders to sensitize local communities on girls' issues, and develop local champions to act for retaining girls in schools.</p> <p>Train school staff to design steps in making schools more 'girl friendly' – to ensure girl child attendance, develop leadership/career counselling, ensure safety and participation.</p> <p>Advocacy with local government and share results for replication of key strategies.</p> | <p>RCT.</p> <p>Scheduled Caste/Scheduled Tribe girls ages 13–16 years.</p> <p>Of the 2,457 girls enrolled in trial, Baseline 2,275.</p> <p>Intervention arm: 1,111 girls of targeted 1,192 girls.</p> <p>Endline : 1,164 of targeted 1,295 in control.</p> <p>Endline: 1,788.</p> <p>Intervention arm: 876 girls.</p> <p>EL: 912 girls.</p> | <p>School completion: No significant impact on completion of secondary school, starting secondary school (enter into Class 8), passing secondary school exams (Class 10).</p> |

| No. | Citation (intervention type) | Geography | Type of intervention and intervention strategy/ descriptors | Study design, sample size, attrition | Outcome and effect size |
|-----|---|-------------------------------|---|---|--|
| 29. | Santhya et al., 2016 (parental awareness building; school-based governance/ community-based monitoring) | Gujarat | <p>Project Sankalp intervention includes revitalizing SMCs and supporting them to implement village-wide campaigns advocating secondary education for girls; forming adolescent girls' groups (AGGs) and supporting them to undertake girl-to-girl campaigns, girl-to-parents campaigns and village-wide campaigns on girls' secondary education; launching an interactive voice response system (IVRS) for relaying messages on the importance of secondary education for girls as also for providing parents, other community members and teachers an opportunity to voice their concerns about the subject; and disseminating informational materials related to girls' secondary education.</p> <p>Project Sankalp implemented to promote girls' secondary education, and improving adolescent girls' transition to secondary education, their attendance at school and learning outcomes in mathematics, and the English and Gujarati languages.</p> | <p>Cluster randomized trial.</p> <p>Randomized 18 clusters into intervention and control arms, with nine clusters in each arm, using a restricted randomization scheme. A total of 1,558 girls were successfully interviewed at the baseline, 739 girls and 819 girls in each cluster (99%), and 1,508 girls at the endline, 712 girls and 796 girls in each cluster, respectively (97%).</p> <p>Project Sankalp was implemented over a period of 15 months among girls attending Class 8 and Class 9, their parents, school management committee (SMC) members and teachers of primary and secondary schools in 45 villages.</p> | <p>School attendance and learning outcomes: Project Sankalp did not produce any positive and significant effect on girls' transition to secondary education and their learning outcomes in mathematics and English. At the same time, there was evidence of some effect on improving girls' attendance at school and learning outcomes in Gujarati, although the effect was statistically mildly significant.</p> |
| 30. | Wennersten et al., 2015 (improved pedagogy) | Tamil Nadu and Andhra Pradesh | <p>Audio-visual learning materials according to syllabi pacing charts.</p> <p>Intervention contained audio visual content in partnership with Nokia Education Delivery and pilot project BridgeIT implemented. Each teacher in the treatment classes was given a pacing chart matching their particular school's scope and sequence of learning. Teachers of Class 5/6 were trained to use these in classrooms with a TV screen with a hypothesis of broadcasting a mixture of subtitled stories, songs, live-action videos, animations and diagrams, the method and quality of teaching would improve and produce significant learning gains for students.</p> | <p>Quasi-experimental design.</p> <p>Students enrolled in Class 5/6: 103 schools, 159 teachers and 3,327 students.</p> | <p>Learning outcome: Strong, positive, and statistically significant effect on learning for both English and science. Overall, English BridgeIT students outperformed their counterparts in control schools by an average of 7.92 percentage points (0.36 SD). Science (Andhra Pradesh (AP) only) BridgeIT students gained an average of 15.45 percentage points (0.98 SD) over non-BridgeIT students.</p> <p>Teaching quality: AP teachers from BridgeIT had a strong, positive, and statistically significant effect on teaching, as the mean number of indicators of effective teaching increased by 32%.</p> |

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