

# The impact of life skills education on socio-emotional development and school-related outcomes among adolescents in India

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# Introduction

- Adolescence is a time of emotional, mental challenges; young people need life skills (e.g., resilience, self-efficacy, problem-solving) to navigate it successfully
- Life or Socio-emotional skills can help maintain healthy friendships, resolve disputes and deal with stress and anxiety effectively (Zins Elias, 2006; Darling-Churchill et al., 2015).
- Building life skills important for human capital outcomes (Cunha and Heckman, 2007), educational attainment (Edmonds et al., 2021) and health-related and behaviour (Leventhal et al, 2016)
- In post-COVID world, skills like resilience and self-efficacy even more critical to stem learning loss (Bayley, 2022; Yorke et al., 2021)

# This paper

- Examines impacts of the "Childhood to Livelihood" (C2L) SEL intervention by Magic Bus India Foundation (MBIF) on school-related outcomes in India.
- C2L program focuses on socio-emotional skills: egalitarian gender attitudes, resilience, and perceived self-efficacy.
- First formal test of an SEL intervention at scale across multiple sites in India.
- Methodology: Simple diff-in-diff for long-term impacts.

# SEL Interventions: Global Insights

- Many countries have incorporated socio-emotional learning in curricula (Camacho, 2020; Sanchez Puerta et al., 2016): Honduras, Argentina, Chile, Mexico, and Colombia
- Ashraf et al., (2018): Girls' interpersonal and non-cognitive skills, including negotiation, improve educational outcomes in Zambia. Dropout rates fall by 10 percentage points.
- Wang et al., (2016): In rural China, SEL intervention reduces dropout by 1.6% at midline and 6.1% among older students nearing 16.
- Hofmeyr (2021): Grit impacts school-related outcomes in South Africa, interacting with school characteristics and quality.
- Arapa et al. (2021): Agency and pride positively associated with school attendance in Peru, while self-efficacy shows a negative association among older children.
- Sorrenti et al. (2024): Causal long-term evidence on positive impact of SEL training on completing high school and enrolling in university in Switzerland 

# SEL Interventions: India

- ASER Report (2020): In India, focus on girls for SEL development; severe comprehension drawbacks in social and emotional skills.
- Edmonds et al. (2023): Group mentoring and life skills sessions improve perceived gender equality and reduce dropout rates in India.
- Bhadwal & Panda (2006): SEL lowers test anxiety among fifth class students.
- Srinivasan (2021): SEL program participants outperform others in academic achievement by 11 percentile points.
- Roy et al., (2016): In Jharkhand, one-standard-deviation increment in self-efficacy leads to a 0.73-unit rise in girls' aspirations.
- Leventhal et al. (2016): In Bihar, psychosocial intervention fosters gender attitudes, improves health awareness, and menstrual hygiene.

# MBIF Life Skills Program: Childhood to Livelihood (C2L)

- Aim: Building life skills among adolescents (ages 11 to 15) over three years.
- Key Components:
  - Education: School regularity, attendance, Right to Education awareness, class participation, and benefits.
  - Gender: Equality, equity perceptions, challenging cultural stereotypes.
  - Socio-emotional Skills: Self-efficacy/resilience, problem-solving, community perceptions.
- Implementation:
  - Site selection driven by funding, but within each district, randomization at the level of households (only one child per household)
  - Community Youth Leaders (CYLs): Local community volunteers serving as mentors.
  - Weekly sessions: Activity-based curricula covering schooling, gender, and socio-emotional skills.
  - Timing: Sessions conducted during break times or after school instructional hours.

# Sample and Data Available

## ● Data Collection

- Baseline (start of the program) and Endline (approximately three years into the program, upon completion)
- Questionnaires administered using computer-assisted personal interviewing (CAPI) methods in the local language.

## ● Baseline-Midline (Short-term) Data:

- Harmonized data from five separate projects (covering NCR, Himachal Pradesh, Madhya Pradesh, Maharashtra, Andhra Pradesh and Tamil Nadu) with similar research and sampling designs ( $N = 1812$ ).
- Cohort-type sampling design for comparisons between two time periods (baseline and 18 months post-intervention).
- Random samples drawn, proportionate to characteristics (age, gender, religion, caste) of the overall population in each program location.  
Minor sampling variations across locations





# Long-term Project data

- Data from a single large-scale project conducted between 2015 and 2018, focus on nutrition. From 10 districts in 7 states (Andhra Pradesh, Haryana, Madhya Pradesh, Maharashtra, Odisha, Rajasthan, and Uttar Pradesh).
- Household-level randomization, resulting in separate treatment and control groups. Evaluation design allows for an intent-to-treat (ITT) estimate.
- Panel data from this study combining data from baseline and endline ( $N = 5582$ ).
- Intervention components include staff/volunteers, life skills education, healthy eating, engagement with parents, the community, and local institutions.

# Key Measures

Measure	Definition	Sample item	Internal consistency )
Resilience	Total score cumulatively from 12 items rated along a 3-point Likert scale (1 = no, 2 = sometimes, 3 = yes). Higher total scores imply higher resilience. Maximum score possible is 36.	A sample item for the scale is "I try to finish activities that I start".	$\alpha = 0.94$
Perceived self-efficacy (Schwarzer & Jerusalem, 1995)	Cumulative score from 10-item scale rated on a 4-point Likert scale (1 = strongly agree to 4 = strongly disagree). This index was reverse scored. High cumulative scores indicate higher perceived self-efficacy. Maximum score possible is 40.	A sample item for the scale is "I can always manage to solve difficult problems if I try hard enough".	$\alpha = 0.89$
Gender attitudes	Cumulatively scored from 7 items scored on a 4-point Likert scale (1 = fully agree to 4 = fully disagree). Higher scores indicate more liberal gender attitudes and lower scores mean conservative gender attitudes. Maximum score possible is 28.	A sample item for the scale is "Teachers should encourage boys to take more classes in science and mathematics as compared to girls".	$\alpha = 0.76$



# Empirical Framework: Overview

- Forming longitudinal (panel) data between baseline and endline.
- Cumulative scores constructed for resilience, self-efficacy, and gender attitudes.
- Retaining key variables: school-related outcomes, perceived self-efficacy, resilience, and gender attitudes.
- Some data on hygiene and health (soap use, availability of toilets at school) for controls
- Difference-in-difference estimates with some caveats

# Identification Strategy

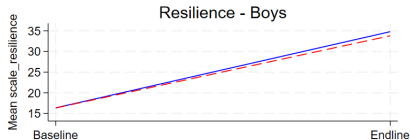
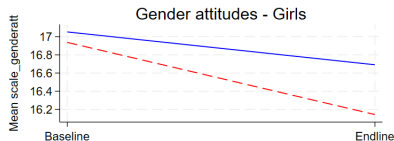
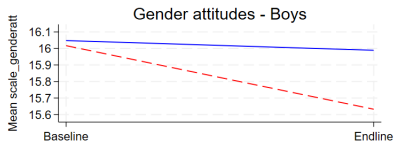
- Short-term projects: unclear how randomization takes place, no control group data available
- No data prior to baseline, cannot fully account for parallel trends
- Some details on how randomization was implemented missing, but achieve balance on covariates between treatment and control at baseline
- Use difference-in-differences controlling for unbalanced variables to identify causal impacts
- Other approaches: IV (no clean identifier)

# Balance Table at Baseline: Long-term

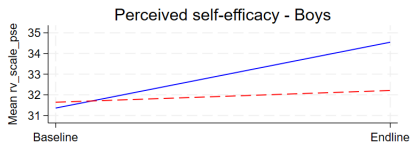
	Intervention/Control			Test
	Control	Intervention	Total	
Age (years)	11.711 (1.615)	11.637 (1.919)	11.676 (1.767)	0.120
Gender attitudes score	16.452 (4.477)	16.469 (4.349)	16.460 (4.416)	0.885
Resilience score	16.245 (2.918)	16.255 (3.119)	16.250 (3.016)	0.900
Perceived self-efficacy score	31.027 (5.316)	31.115 (5.663)	31.069 (5.485)	0.551
Current grade	6.847 (7.722)	6.381 (7.313)	6.624 (7.532)	0.021
Gender				
Male	0.527	0.580	0.553	< 0.001
Female	0.473	0.420	0.447	
Caste				
Scheduled Caste	0.340	0.363	0.351	0.129
Scheduled Tribe	0.101	0.100	0.101	
Other Backward Class	0.438	0.408	0.424	
Upper Caste	0.121	0.129	0.125	
Religion				
Hindu	0.939	0.914	0.927	< 0.001
Muslim	0.045	0.053	0.049	
Sikh	0.002	0.001	0.001	
Christian	0.000	0.002	0.001	
Buddhist	0.014	0.031	0.022	
Aspire to study undergrad	0.414	0.407	0.411	0.582
Regularity in attending school				
Did not attend	0.006	0.007	0.006	0.274
1 – 2 days in a week	0.002	0.004	0.003	
3 – 4 days in a week	0.020	0.026	0.023	
5 or more days in a week	0.972	0.963	0.968	
N	2,910	2,672	5,582	



# Long-term changes



— Treatment  
- - Control

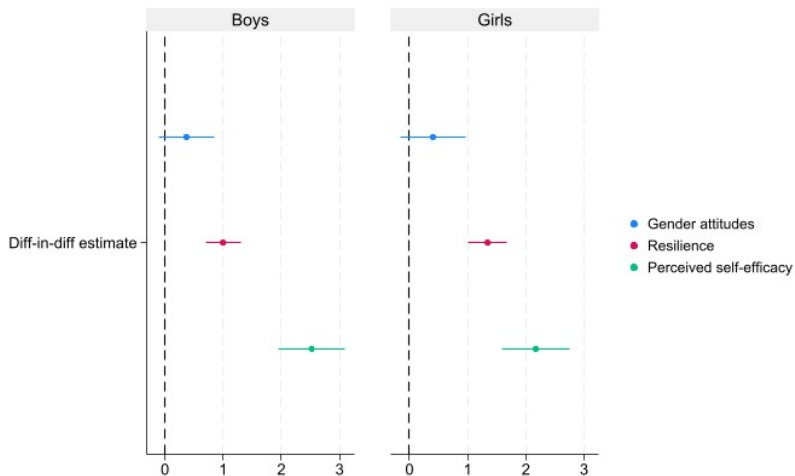


# Empirical Framework: Long-term Program (Difference-in-Differences)

$$Y_{ihvt}^* = \alpha + \gamma \text{Post}_{ihvt} + \beta_1 \text{Treat}_{ihv} + \beta_2 \text{Treat}_{ihv} \times \text{Post}_{ihvt} + \beta_3 X_{ihv} + \epsilon_{ihvt} \quad (1)$$

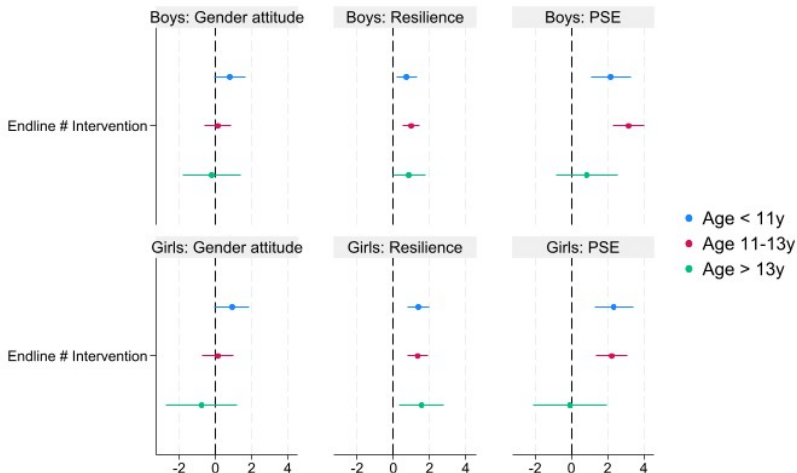
- Outcome variable ( $Y^*$ ) includes regularity of attendance, aspirations to study till graduation, and scales.
- Controls: class currently enrolled in, caste, religion; for school-related outcomes: hygiene practice (soap use), separate toilets for boys and girls
- Subgroup analyses by sex and age groups (< 11 yrs, 11 – 13yrs, and > 13yrs).
- Estimated using panel DiD and panel logit models with log odds ratios for robustness checks

# Long-term impacts: Life skills

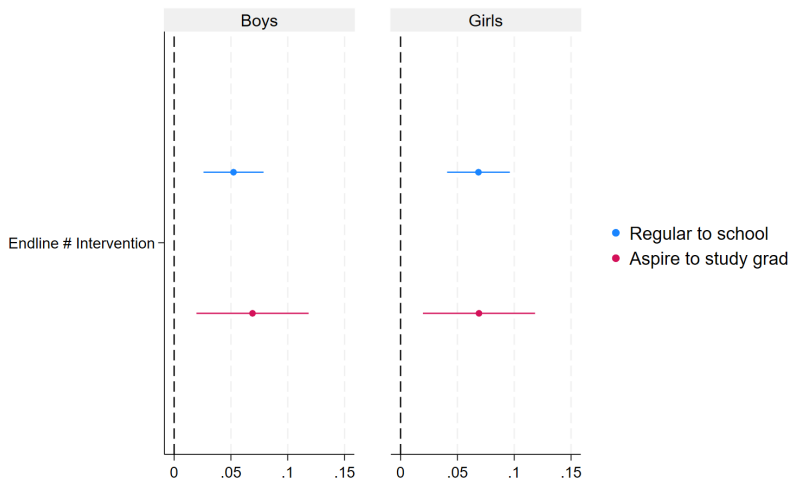




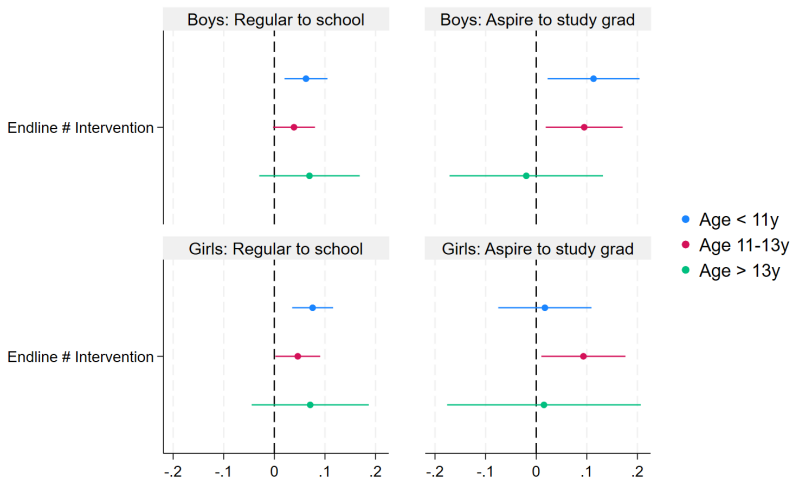
# Long-term impacts: Life skills by age



# Long-term impacts: School



# Long-term impacts: school-related outcomes by age



# Concluding Remarks

- Life skills development shows changes associated with Magic Bus C2L; especially for girls
- C2L intervention critical for regular school attendance and aspiration to study till graduation
- Education policies in India aim to broaden the discourse on the role of schools and the National Education Policy (2020) explicitly discusses role of socio-emotional learning, or life skills (SEL)
- Program impacts for school-related outcomes driven by younger children at baseline; starting early may be important for achieving impacts
- Major caveats: cohort study not randomized; lack of information on school-level and household inputs



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