The Impact of Early Childhood Education on Child Development in Karnataka, India

Joshua Dean, Seema Jayachandran

**Location:** Karnataka, India

**Sample:** 808 children

**Timeline:** 2016

**Partners:**
Hippocampus Learning Centres

---

*Early childhood is a critical time for cognitive and socioemotional development. Unfortunately, in developing countries, many children under five fail to reach their developmental potential. Researchers partnered with Hippocampus Learning Centers (HLC), an organization that aims to provide affordable and high-quality pre-primary education in rural Karnataka, India, to test the impact of attending kindergarten on child development. Early results suggest that the scholarships positively impacted enrollment as well as performance on a variety of child development tests—overall, children offered a scholarship outperformed children not offered a scholarship across almost all cognitive outcomes. However, the scholarships did not have an effect on socioemotional development, as measured by parents’ reports.*

*Policy Issue:* Early childhood is a critical time for cognitive and socioemotional development. For children under the age of five, cognitive and psychosocial stimulation may be especially important for psychological and neurological growth. Research from the United States, where Early Childhood Education (ECE) options such as public preschools and kindergartens are commonplace, suggests that ECE can help children gain skills necessary for educational success later in life.1 Unfortunately, in developing countries, ECE options are often limited, and research on the impact of ECE in these contexts is more limited. To address this evidence gap, researchers are evaluating the impact of attending kindergarten on child development in rural Karnataka, India.

*Context of the Evaluation:* In rural India, quality, affordable ECE is not widely available. In many villages, government-run anganwadi centers provide some ECE, but largely serve as
daycares staffed by individuals minimally trained in teaching. Private preschools and kindergartens are another ECE option, but these often charge high fees and feature a curriculum based in rote learning. Additionally, parents may not believe that ECE is important for their child’s development. Among the households in this study, parents tended to believe in the importance of rote learning, which could imply a lack of awareness of the importance of stimulating their children to encourage emotional and intellectual development.

Informed by an initial pilot study from July 2015 to April 2016, researchers partnered with Hippocampus Learning Centers (HLC), an organization that aims to provide affordable and high-quality pre-primary education for 3-6 year old children in rural Karnataka, India. HLC runs village “learning centers” which offer a year of prekindergarten and two years of kindergarten for US$85 to $140 per year. HLC teachers are local women from the community who have completed at least 12 years of schooling, and have passed examinations of their math and language abilities administered by HLC. The HLC model is unique because its curriculum has detailed, daily lesson plans and necessary materials in a ready-made kit that make it easy for teachers in rural areas to deliver quality lessons. New teachers are provided 20 days of intensive training, in-service training throughout the year, as well as ongoing technical support. The structured curriculum allows the HLC model to be easily scaled as the organization grows.

Details of the Intervention: In partnership with HLC, researchers conducted a randomized evaluation in 71 villages in Karnataka to test the impact of attending two years of kindergarten at HLC on children’s cognitive and socioemotional development as well as their learning outcomes in the first year of primary school. To encourage children to attend HLC, researchers created a scholarship program for children who were age-appropriate to enroll in the first year of kindergarten (aged 3.5-4.5) from the poorest households in their villages, determined through household surveys. The scholarship is worth 83-89 percent of the cost to attend two years of kindergarten accounting for material fees and kindergarten level (junior or senior) at an HLC school, or about INR 4,800-8,400 (US$70-124 in 2016). Scholarship families are responsible for an INR 1,000 co-pay (US$15 in 2016) per year. Eight-hundred and eight eligible children were entered into a scholarship lottery, among which a random half received a scholarship offer as part of the treatment group. The other half of children did not receive the scholarships, though they could attend HLC without the scholarship if they chose, and formed the comparison group. After randomization, seventy-three percent of students in the treatment group enrolled in HLC in the first year of the evaluation, compared to 17 percent of those in the comparison group.

Researchers gathered data on children’s cognitive and socioemotional development in Spring 2018 after two years of kindergarten and will collect more data again in Spring 2019 after children complete Grade 1.

Results and Policy Lessons: Results from Spring 2018 (after two years of the HLC program) suggest that the scholarships positively impacted kindergarten attendance as well as performance on a variety of child development tests—overall, children offered a scholarship outperformed children not offered a scholarship across almost all cognitive outcomes. The scholarships did not have an effect on parents’ reports of their child’s socioemotional development.

Attendance: The scholarships increased the likelihood that children would attend kindergarten. Children offered scholarships were 49 percentage points more likely to attend HLC and 22 percentage points more likely to attend any kindergarten than those not offered scholarships.

Cognitive Development: Children who attended HLC as a result of the scholarship program scored on average 0.82 standard deviations better than children in the comparison group on cognitive tests covering subjects including math, language, memory, motor skills, reasoning, and creativity. This means that the HLC program roughly doubled a child’s natural cognitive development as compared to children who attended government-run anganwadi centers or did not attend preschool at all.

Socioemotional Development: Socioemotional development was measured through a survey administered to parents, which asked them to rate whether statements were not, somewhat, or certainly true about their children, including questions about their child’s conduct, emotional stability, hyperactivity, interactions with peers, and prosocial behavior. The HLC program did not have an effect on any of
the measured aspects of socioemotional development. However, researchers intend to supplement parental evaluations (which can be subjective) with games that more directly test socioemotional qualities in future waves of data collection.

Researchers will collect another round of results in Spring 2019 after children have completed their first year of primary school. In the next round of analysis, they will also begin to quantify the impact of attending HLC as compared to those who would have attended different types of kindergartens, switched to HLC from other kindergartens, or not attended kindergarten at all.


2 Fees depend upon the wealth of the village in which the center is located and the grade that is being taught with Upper Kindergarten costing more than Lower Kindergarten. These fees also include materials and uniforms.

Visit this page online for links to related research, news, videos, and more: [https://www.povertyactionlab.org/evaluation/impact-early-childhood-education-child-development-karnataka-india](https://www.povertyactionlab.org/evaluation/impact-early-childhood-education-child-development-karnataka-india)

The Abdul Latif Jameel Poverty Action Lab (J-PAL) is a network of 181 affiliated professors from 58 universities. Our mission is to reduce poverty by ensuring that policy is informed by scientific evidence. We engage with hundreds of partners around the world to conduct rigorous research, build capacity, share policy lessons, and scale up effective programs. J-PAL was launched at the Massachusetts Institute of Technology (MIT), and now has regional offices in Africa, Europe, Latin America & the Caribbean, North America, South Asia, and Southeast Asia. For more information visit povertyactionlab.org.