Improving Preschool Quality in Colombia

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Sector(s): Education, Health

Location: Colombia (Bogota, Cali, Medellin, Barranquilla, bello, Palmira, Itagüi and Soledad)

Sample: 120 preschools

Target group: Children under five Parents Students Teachers

Outcome of interest: Student learning

Intervention type: Early childhood development Training

AEA RCT registration number: AEARCTR-0001246

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Partner organization(s): National University of Colombia, Fundación Éxito, International Initiative for Impact Evaluation (3ie), European Research Council (ERC), Economic and Social Research Council (ESRC)

While global access to preschool has increased dramatically, preschool quality is often poor. Researchers evaluated two approaches to improving the quality of Colombian preschools. Providing additional resources to preschools for materials and new staff did not benefit children's development and, unintentionally, led teachers to reduce their involvement in classroom activities. However, the addition of teacher training focused on teaching methods offset the negative effects on teacher behavior, improved the quality of teaching, and raised children's cognition, language and school readiness.

Policy issue

Low-, middle-, and high-income countries alike are increasingly investing in preschool. There is strong evidence that the early years of childhood are a time during which there is great potential to influence children's development.[1], [2], However, recent evidence suggests that it is not enough to increase spending on early childhood education if services are of poor quality.[3], [4], [5] While infrastructure and resources are often used to measure school quality, teaching practices and the quality of teacher-child interactions may have a larger effect on child learning. Which aspects of quality are most important to improve children's development, and how can policymakers improve these? Can programs aimed at improving child learning be delivered at scale? To answer such questions, researchers evaluated whether introducing additional classroom resources (such as play materials and additional care providers) or training teachers to use better teaching practices is more effective in improving the quality of early childhood education, and children's development as a result.

Context of the evaluation

Global enrollment in preschool has increased from 29 percent in 1990 to 49 percent in 2015. In Colombia, the setting of this study, enrollment rates have increased from 13 percent in 1990 to 84 percent in 2015.

In its 2011 national early childhood strategy, the government of Colombia committed 0.3 percent of GDP to delivering high quality early years education — a three-fold increase from the 0.1 percent of GDP spent in 2005. Key to this strategy was an upgrade of preschools, called *Hogares Infatiles* (HIs) through the *Hogares Infantiles Mejorado* (HIM) program, which provided preschools with resources for (1) hiring classroom assistants, nutrition or health professionals, and professionals in child socio-emotional development; and (2) buying toys, books and other pedagogical materials. The funds for the program were provided on a per child basis: each center received US$20 per child per month for the hiring component and a one-time payment of US$52 per child for the materials. Overall, these improvements entailed a considerable financial commitment on the part of the government: a 30% increase in per child expenditure compared to the typical unenhanced model (from US$1,000 to US$1,300 per year). The HI program is well-established; it is the oldest public center-based childcare program in Colombia and has enrolled an average of 125,000 children per year during the last decade.

The HIs in this study provide partially-subsidized preschool for low socio-economic status children aged 5 years and younger, whose parent(s) are working and therefore who lack consistent childcare. Children in the study were 29-30 months old on average. The 1,008 HIs across the country are run by the government with input from parent associations. Preschools are typically located in well-equipped community centers and employ between 3 and 10 teachers who have some training in early education; each teacher cares for about 30 children.



Preschool child laughing in Colombia.

Photo credit: Shutterstock.com

Details of the intervention

Researchers partnered with Fundación Exito (FE) and the Colombian National University to conduct a randomized evaluation to test the impact of two approaches to improving preschool quality on child cognition, language ability, and school readiness. One hundred and twenty public preschools were randomly assigned to one of three groups of 40 schools each:

1. *Additional classroom resources* (HIM): Preschools received the government's *Hogar Infantil Mejorado* (HIM) quality improvement program, in which they received additional resources (play materials and resources to hire more care providers, especially teaching assistants). This program was being rolled-out nationally at the time of the intervention;
2. *Additional classroom resources + teacher training (HIM+FE)*: Preschools received HIM plus an additional program which provided teacher training on how to improve the quality of day-to-day interactions with children; The FE program also included a reading component which aimed to provide parents and teachers with strategies to motivate their children to read, and emphasized reading as a way for parents to bond with their children.
3. *A comparison group*, where the implementation of HIM was delayed.

The evaluation design allowed the researchers to test several hypotheses, including whether HIM alone and the HIM+FE program had an impact on child learning compared to traditional HIs. The researchers were also able to test whether adding the FE components enhanced the effectiveness of HIM.

The teacher training for the FE program was delivered between June 2013 and June 2014 through three components: (1) instruction through 16 monthly 3-hour long sessions delivered via videoconferencing; (2) video tutoring sessions of three hours per week in which participants worked with their tutors on-line on developing and refining classroom activities; and (3) on-site coaching where instructors carried out one classroom observation of participating teachers to provide specific feedback on their content and teaching methodology. The teacher training curriculum was free and covered technical guidelines for early childhood services; child development from 18 to 36 months of age; nutrition; brain development; cognitive development; early literacy; the use of art, music, photography and body language for child development; mathematical concepts during early childhood; and pedagogical strategies during early childhood.

Four months after the FE program was implemented, researchers measured the effects of the two approaches on several indicators of child development (such as cognition, language, and school readiness), preschool quality, and the quality of the home environment. To assess the quantity and quality of classroom activities, researchers collected detailed teacher-reported data and also directly observed the type and frequency of activities teachers had performed in the classroom.

Results and policy lessons

In this context, additional resources provided through HIM — the government improvement program — were not sufficient to improve children's development and, unintentionally, led teachers to reduce their involvement in classroom activities. The addition of teacher training (HIM+FE) offset the negative effects on teacher behavior, improved the quality of teaching, and raised children's cognition, language and school readiness.

Cognition, language, and school readiness:
While the HIM intervention alone had no effect on children's cognition, language, and school readiness, the HIM+FE intervention improved cognition, language, and school readiness by 0.15 standard deviations relative to the comparison schools. This impact was mainly driven by the most disadvantaged children: the HIM+FE intervention increased cognition, language and school readiness by around 0.30 standard deviations for children whose families had below median wealth.

Classroom activities:

In response to HIM, teachers reduced the number of learning and development activities by 0.34 standard deviations relative to teachers in comparison schools. However, the unintended reduction in classroom activities in response to the HIM-only program was offset by the addition of the FE enhancement. The researchers believe that this is likely because the FE enhancement emphasized the importance of prioritizing learning and development activities over personal care routines and provided coaching on productive strategies for implementing these activities.

The FE enhancement not only offset the negative impacts of HIM on the amount of time teachers spent on learning and development activities with the kids, but also had a positive effect on the quality of this time. Directly observed quality of teacher practices and classroom processes increased by about 0.4 standard deviations in schools that received the HIM+FE intervention compared to both comparison schools and HIM-only schools.

Home environment:

Researchers found that neither HIM nor HIM+FE had any impact on the time that parents spent reading with the child, or on other measures of quality of the home learning environment.

Mechanisms: The researchers suggest that the teacher training component of the FE enhancement primarily drove the positive effects of the HIM+FE program on child development outcomes. Training teachers led to an improvement in classroom process quality through increasing the time teachers spent on play and learning activities and the quality of these activities. The program's lack of impact on the home environment and reading practices — targeted by the reading program component of FE — further supports this idea.

Taken together, the results suggest that additional resources through the HIM program may not be sufficient to improve children's outcomes. However, these results indicate that adding teacher training could offset the negative effects of the program and improve preschool quality.

Cost effectiveness: A rough assessment of costs suggests that the teacher training program could be scaled at a one-off cost of US$5,827 per HI and an ongoing cost, for training new teachers and running less-intensive refresher training, of US$2,206 per center per year, or US$13 per child per year. This additional cost for the FE component amounts to an increase of one percent above the US$1,300 currently allocated to HIM yearly for each child.

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2. Heckman, J., R. Pinto, and P. Savelyev (2013, oct). Understanding the Mechanisms Through Which an Influential Early Childhood Program Boosted Adult Outcomes. American Economic Review 103 (6), 2052–2086.

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