Early Childhood Education and Development in Indonesia: Emerging Results and Proposed Analyses

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World Bank - Jakarta
Acknowledgements

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- Collaborators on research and design from local and international academic partners
  - International: University of Western Australia, University of Amsterdam
  - Local: Universitas Gajah Mada
Outline

- The ECED landscape in Indonesia prior to the project
- The project
  - The beneficiaries
  - The intervention
- Analytical Framework
- The impact evaluation
  - Design
  - Data
  - Measure of child development
- Preliminary findings
- Proposed analyses
Prior to the project child developmental outcomes were mixed.

**Percent vulnerable on each EDI domain - select sample of Indonesian 4-year olds**

- **Communication skills and general knowledge**: 1%
- **Social competence**: 5%
- **Emotional Maturity**: 28%
- **Physical Health and Well-being**: 38%
- **Language and cognitive development**: 80%

Good results

Improvements needed

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**Percent of children Vulnerable**
In part due to limited stimulation in the home

Number of times child engaged in activity in the past week with someone in the household
Against this backdrop, the project provided

- Community facilitators to sensitize villages on
  - Need for ECED
  - Management of funds
  - Proposal preparation

- Block grants to villages (USD 18,000 per village)
  - Villages propose use of funds for new ECED services or upgrading existing services

- Teacher training
  - 200 hours of training
Intended project beneficiaries included

- Main target: 738,000 children ages 0 to 6 and their parents/caregivers living in 3,000 villages within 50 selected districts throughout Indonesia.

- The project support the establishment of 6,000 ECED services (2 in each village)

- Other beneficiaries: 12,000 individuals elected to become teachers and child development workers (CDW)
ECED Project Coverage: 50 Districts in 21 provinces, 3,000 villages
Analytical framework acknowledges multifaceted nature of child development

- ECED success depends on
  - Child health
  - Household environments
  - Teacher quality
  - Community facilities
    - Center quality
Impact evaluation design sensitive to the need to provide ECED broadly

<table>
<thead>
<tr>
<th>Baseline</th>
<th>Midline</th>
<th>Endline</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Treatment</strong></td>
<td>Received program at baseline (10 villages in 10 districts)</td>
<td></td>
</tr>
<tr>
<td><strong>Comparison 1</strong></td>
<td></td>
<td>Receive program at midline (10 villages in 10 districts)</td>
</tr>
<tr>
<td><strong>Comparison 2</strong></td>
<td>Never receive program (10 villages in 10 districts)</td>
<td></td>
</tr>
</tbody>
</table>
Questionnaires focused on

<table>
<thead>
<tr>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child tasks</td>
</tr>
<tr>
<td>Primary caregiver</td>
</tr>
<tr>
<td>ECED provider</td>
</tr>
<tr>
<td>Household head</td>
</tr>
<tr>
<td>Village head</td>
</tr>
</tbody>
</table>
Multiple measures of child development

<table>
<thead>
<tr>
<th>Target Age</th>
<th>Measurement</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 year olds</td>
<td>Strengths and Difficulties Questionnaire (SDQ) (Goodman 1997; Muris, Meesters, and Berg (2003)</td>
<td>To measure whether children have psychopathology such as emotional symptoms, conduct problems, hyperactivity/inattention, peer-relation problems, and prosocial behavior based on the caregiver’s report</td>
</tr>
</tbody>
</table>

How well did targeting and randomization work?
Project districts are poorer

Project and Non-project Districts

Poverty rate

Year

Project districts with M&E and survey data
Project districts with M&E data only
Non-project districts
Indonesia
Service provision in treatment and control areas is similar but not in matched controls

<table>
<thead>
<tr>
<th></th>
<th>Batch 1</th>
<th>Batch 3</th>
<th>Matched Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of sub-villages</td>
<td>6.5</td>
<td>6.9</td>
<td>6</td>
</tr>
<tr>
<td>Number of children between 0 and 6 year olds</td>
<td>332</td>
<td>364</td>
<td>325</td>
</tr>
<tr>
<td>ECED project facilities (TPK)</td>
<td>2</td>
<td>2</td>
<td>.</td>
</tr>
<tr>
<td>Official kindergarten (TK)</td>
<td>1.6</td>
<td>1.7</td>
<td>1.9</td>
</tr>
<tr>
<td>Playgroups (KB)</td>
<td>0.4</td>
<td>0.4</td>
<td>1.0***</td>
</tr>
<tr>
<td>Day care (TPA)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Islamic Kindergarten (TPQ)</td>
<td>6.6</td>
<td>7.4</td>
<td>5.4</td>
</tr>
<tr>
<td>Other ECED facilities</td>
<td>0.6</td>
<td>0.2</td>
<td>0.7</td>
</tr>
<tr>
<td>Number of TK / 100 children</td>
<td>0.5</td>
<td>0.6</td>
<td>0.7***</td>
</tr>
<tr>
<td>Number of TPK / 100 children</td>
<td>1.1</td>
<td>1</td>
<td>.</td>
</tr>
<tr>
<td>Number of KB / 100 children</td>
<td>0.1</td>
<td>0.1</td>
<td>0.4***</td>
</tr>
</tbody>
</table>
Adherence to randomization was not perfect...but acceptable
What did the project provide?
Most villages have 2 TPKs and the majority were newly established with help of the grant

**Number of TPKs / village**

- 0% of villages have 1 TPK
- 100% of villages have 2 TPKs
- 0% of villages have 3 TPKs

**Use of block grants**

- Newly established
- Institutional strengthening
- Reactivation of inactive ECED
76% of teachers have completed senior high school but some lack experience and training.

- **Experience is low**
- **Not all teachers received 200 hours of training**
Fees are charged in half the centers

- Half the centers don’t charge fees but the half that do impose mandatory fees on average charge IDR2,915 – though this varies greatly:
Services are not fully utilizing capacity
What is happening to ECED overall?

Work in progress
Supply of ECED is on the rise

- Increase from **56,000** TK’s in 2003 to **97,000** in 2011
- 95% are “private”
Demand is rising as well

Ever enrolled in ECED by age (2007-2010)

Source: Author's calculations using SUSENAS data
Access to ECED centers - more equitable?

- **Enrollment rates by mother’s education** (High=more than primary, Low=primary or less)
- The ECED project facility is *less discriminatory* to low SES families than preschool
- High enrollment in preschool + ECED combined (80% at age 5)
Does increasing enrollment mean better child development outcomes?

Analysis of baseline and midline data – work in progress
(Qualified) Yes...

- The never enrolled score systematically lower, mostly so on language-cognitive indicators.
... Longer exposure to ECED associated with better child development outcomes

- Children with one year of exposure to ECD score a full point higher on language cognitive EDI
- This is equivalent to half a standard deviation
- Effect appears to increase with additional exposure
Next Steps

Analytical inputs to the policy dialog
Tentative outline of comprehensive report

1. The landscape of child development in Indonesia
2. What is an Indonesian child able to do and by what age?
3. When does demand not respond to supply of ECED services?
4. Which child, family, community characteristics relate to better development outcomes?
5. What is the role of facilitators?
6. Policy and practice implications
Terima kasih / Thank you!
Supplemental information follows
# Children in the data

<table>
<thead>
<tr>
<th>Age</th>
<th>Boys</th>
<th>Girls</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1,582</td>
<td>1,531</td>
<td>3,113</td>
</tr>
<tr>
<td>4</td>
<td>1,612</td>
<td>1,632</td>
<td>3,244</td>
</tr>
<tr>
<td>Total</td>
<td>3,194</td>
<td>3,163</td>
<td>6,357</td>
</tr>
</tbody>
</table>
The EDI measures readiness to learn at school on 5 domains such as

<table>
<thead>
<tr>
<th>Language and cognitive development</th>
<th>Communication skills and general knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Which includes:</td>
<td>• Which includes:</td>
</tr>
<tr>
<td>▫ reading awareness,</td>
<td>▫ skills to communicate needs and wants in socially appropriate ways</td>
</tr>
<tr>
<td>▫ age-appropriate reading and writing skills</td>
<td>▫ symbolic use of language,</td>
</tr>
<tr>
<td>▫ age-appropriate numeracy skills</td>
<td>▫ story telling,</td>
</tr>
<tr>
<td>▫ board games,</td>
<td>▫ age-appropriate knowledge about the life and world around;</td>
</tr>
<tr>
<td>▫ ability to understand similarities and differences,</td>
<td></td>
</tr>
<tr>
<td>▫ ability to recite back specific pieces of information from memory</td>
<td></td>
</tr>
</tbody>
</table>
A child’s drawing ability is related to fine motor and cognitive skills
Range of cognitive development shown by drawing ability
Budget expansion: early childhood education

- Government expenditures on preprimary education comprises +/- 1% of the total budget for education. Similar figures in Malaysia (1-1.5%), Australia (1%), Philippines (1%). EU, but also Thailand and Vietnam score higher (5-10%). Source UNESCO Institute of Statistics
Multiple instruments for the impact evaluation

1. Child tasks / observational
2. Primary caregiver
3. Household head
4. Village head (kepala desa or lurah)
5. Institution/Lembaga PAUD and/or ECED teacher
Primary Caregiver

1. Basic health of children,
2. Parent education
3. Knowledge of importance of ECD
4. Depression
5. Parental practices (warmth, care, punishment)
6. Immunization,
7. Nutrition of child (including breastfed)
8. Knowledge of, Access to and Utilization of ECED services,
9. Report on the child’s physical health, social competence and emotional maturity, language, cognitive and communication skills (EDI, SDQ)
Child tasks / observation

1. Physical health
2. Social competence and emotional maturity
3. Language
4. Cognitive (Card Sorting Task),
5. Communication skills

A mix of enumerator observation, tests for the child (draw, throw, identify common objects – Ages and Stages) and the Card Sorting Task.
Household Head

1. Household location
2. Household listing
3. Religion
4. Income, household characteristics and assets (water, electricity, building type, toilet, sewerage, bike, TV etc)
5. Occupation
6. Education
7. Village integration/participation
8. Major household disruption (death, fire, illness etc)
Village Head

1. Location – dusun, population, geographical distribution/density (GPS)
2. Infrastructure and transport availability
3. ECED services available, frequency, quality, utilization, payment for
4. Local assets
5. Formal social connections
6. Perception of safety for young families
7. Safe areas in the community for child play
8. Food security / village shocks (flood etc)
The impact evaluation data are detailed

- We track a representative sample of village children – born in 2005 and 2008
  - Baseline - April 2009
  - Midline - July 2010
  - Endline – expected 2013

- 10 districts, 300 villages (200 project + 100 comparison villages), 6000 children (3000 1-year olds + 3000 4-year olds)

- We measure children individually and construct 20 different indicators of ECED, along different domains. (observations + parent assessments)