RISE PROGRAMME IN INDONESIA

15 Years of Education in Indonesia: Rising Enrolment and Flat Learning Profiles

Amanda Beatty, Emilie Berkhout, Luhur Bima, Thomas Coen, Menno Pradhan, Daniel Suryadarma

21 June 2018



Education expenditures as a percentage of total government expenditures have almost doubled



Equivalent to a threefold increase in total education expenditures in real terms

NOTE: Data not available for 2006. Source: World Bank DataBank Diop, Ndiame; Gil Sander, Frederico. 2018. *Indonesia Economic Quarterly: Learning more, growing faster (English)*. Washington, D.C. : World Bank Group.

Primary school enrolment has been universal, while secondary school enrolment has been rising



Getting to OECD levels in PISA will take generations



Source: World Bank, World Development Report 2018: LEARNING to Realize Education's Promise

TIMSS results even show a negative trend

We present Indonesian learning profiles

- We seek to better understand the Indonesian learning crisis by assessing learning by grade
 - This study and Afkar et al. (forthcoming) are first to show learning profiles for Indonesia
 - Afkar et al. (forthcoming) use school-based test in 2011 and 2012
- We find flat learning profiles using an almost nationally representative dataset covering 2000 to 2015
- Our findings are consistent with the results of PISA, TIMSS and Afkar et al. (forthcoming)

The Indonesia Family Life Survey allows us to generate learning profiles for numeracy skills

- Indonesia Family Life Survey (IFLS): panel survey in 2000, 2007 and 2014 representative of 83% of Indonesian population
- Two sets of multiple choice numeracy tests, covering Grades 1 5 curriculum
- Correct for guessing: $y = (1 \alpha) \times \frac{1}{K} + \alpha \times 1$
- Substantial group answered both versions of the test
 - Those above 14 years old who answered the easy version in the previous survey round
 - About 60 percent of 15 year olds+ respondents

Test items for 7-14 y.o.	Grade level	Test items for >=15 y.o.	Grade level
49-23	1	56	4
267+112-189	2	84	
		(412+213):(243-118)	3
(8+9)*3	3		_
		0.76-0.4-0.23	4
56/84	4		
		(100-65)% of 160 million (in text)	5
1/3-1/6	4		_
		5% interest on Rp. 75.000 (in text)	5

Little learning between the age of 7 and 14

Source: IFLS 5

Those above 14 years old still struggle with the easiest questions

Source: IFLS 5

Grade level competency of 18-28 y.o. lags far behind curriculum

Source: IFLS 5

We calculate one numeracy score over grades

1. Impute missing values

- 2. Item Response Theory using 2 parameter logistic model to generate a numeracy score
 - Takes into account difficulty levels and discrimination power
 - Use group that answered both versions for test equation
 - Predict probability of correct answer for each item
- 3. Take mean of probabilities
- 4. Correct for guessing

Interpretation: Mean probability of knowing the answer to any of the items

Flat learning profiles irrespective of the imputation method for currently enrolled students

Source: IFLS 5

Similar findings for 18-30 y.o.

Source: IFLS 5

Numeracy skills deteriorated between 2000 and 2014 for currently enrolled students in all grades

—2000 **—**2014

	2000	2014
Mean	38.8	33.6
Coefficient		-5.9 (p=0.000)

Deteriorating numeracy skills of 18-24 y.o. confirm downward trend

___2000 **___**2014

	2000	2014
Mean	31.2	31.4
Coefficient		-3.2 (p=0.000)

Conclusions

- Flattening learning profiles
- Numeracy skills did not improve between 2000 and 2014
- Limitations
 - Instrument contains few items
 - Respondents of a household survey might not take the test seriously
- Robustness checks do not reject our results
 - Findings in line with literature
 - Children enrolled in primary school in IFLS data mostly score better than enrolled children in Afkar et al. test data (BERMUTU, 2011)

Thank You!

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Expenditures on education have increased threefold between 2000 and 2015 in real terms

Source: World Bank COFIS database using MOF data and Presidential Regulation on budget details of respective years

NOTE: LHS IDR trillion, RHS percentage of GDP and spending

Source: Diop, Ndiame; Gil Sander, Frederico. 2018. *Indonesia Economic Quarterly: Learning more, growing faster (English)*. Washington, D.C. : World Bank Group.

The instrument has acceptable validity, but would benefit from more items

Validity

• Unidimensional based on factor analysis

Reliability

- Cronbach's alpha is slightly too low (0.67, at least 0.7 preferred)
 - Shows need for more items, as item-test correlations are between 0.42 and 0.63