



Distance Assessment of Early Childhood Development

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Context

- Lockdowns → disruption of educational/care services → learning loss
- Distance learning strategies “*Aprendo en Casa*” (AeC)
- Partnered with Ministry of Education of Peru
 - Survey to monitor take-up and use of AeC
 - SMS intervention to support parents during homeschooling
- Can learning outcomes be measured over the phone?



Main takeaways

1. Qualitative evidence of the feasibility of using distance assessments to measure early childhood development
2. The mode of administration (video vs. audio) imposes restrictions on the domains of knowledge that can be assessed
3. Caregivers play a key role in the implementation of these assessments



Our project

Main objective

Design and validate a distance assessment test to be administered remotely on preschool children aged 4-6 years old

Mode

- Develop two parallel forms of the questionnaire based on households' device type: audio (phone) or video (smartphone)

Sample

- Pilot on two different samples in Colombia and Peru (approx. 3000 children)



Questionnaire design

Constructs of interest

- Math skills: counting, comparing numbers, addition, subtraction, spatial sense
- Literacy skills: letter/sound identification, listening comprehension, expressive vocabulary
- Socio-emotional development: empathy, conflict resolution

Adapting existing tests

- Measuring Learning Quality and Outcomes (MELQO)
- Early Grade Mathematics Assessment (EGMA)



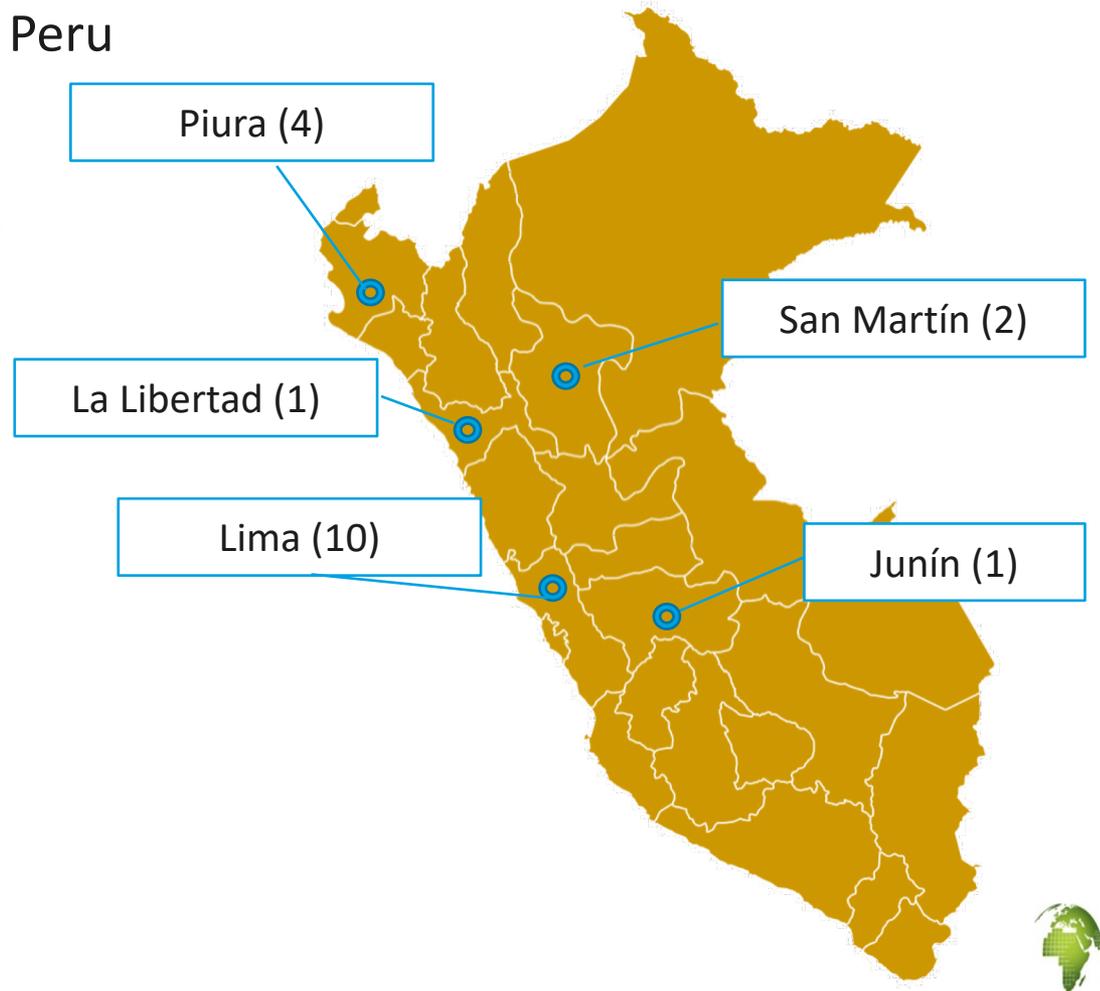
Some examples

Skill	Original item	Adapted item (audio)	Adapted item (video)
Counting numbers	Please count out loud starting from number 1	Same as original	Same as original
Expressive vocabulary	Name food items and animals	Same as original	Same as original
Empathy	Show image of a girl who has fallen to the floor	Tell the story of a girl who has fallen to the floor	Same as original
	Ask: "How do you think the girl feels?"	Ask: "How do you think the girl feels?"	
Spatial sense	Show several images to the child	Ask about general reference points	Show one image to the child
	Ask: "Point to the image where the ball is above a chair"	The sky is (<i>above, below, in front of...</i>) your house	Ask whether the ball is (<i>above, below, in front of...</i>) the chair
Motor development	Drawing Physical activities	-	-



Feasibility study

- Piloted the assessment in 18 households located in different regions of Peru
- Qualitative surveys to parents
- Assessment scheduling call
- Protocol validation
- Implementation quality

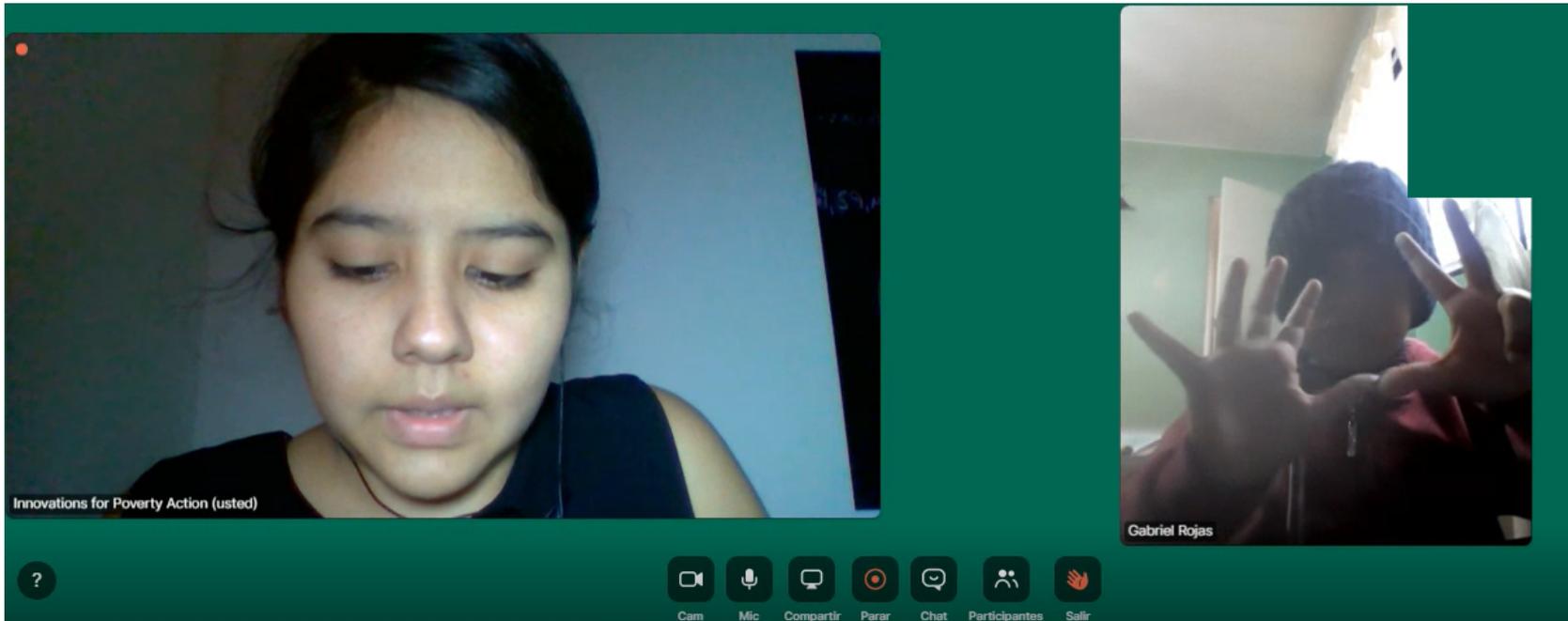


Mode

In Peru, 89% of the population with internet access connects through smartphones

	Audio	Unilateral video	Bilateral video
Mode	Phone call	App based call	App based call
Visual aids	No	Yes	Yes
Enumerators can see the child	No	No	Yes
The child can see the enumerator	No	No	Yes





Example using bilateral video:

[Enumerator]: Using your hands could you please show me eight fingers?



Main lessons

1. The mode (video vs. audio) imposes restrictions on the domains of knowledge that can be assessed

	Audio	Video
Math	4	6
Communication	3	5
Socio-emotional	3	3
Executive function	-	-
Motor development	-	-
Total	10	14

Challenges:

1. Items that include visual aids and non-verbal responses
2. Limited attention span



Main lessons

2. Caregivers play a key role in the implementation of the remote assessments

- Early childhood assessments in person require support from teachers and principals
- Caregivers' role:
 - Scheduling the test at home
 - Signing informed consent
 - Following test instructions
 - Monitoring quality of audio/video during the test
- Strategies to mitigate caregivers' involvement during the test



Main lessons

3. Overall, there is qualitative evidence of the feasibility of using distance assessments to measure early childhood development

- Time was adequate: audio (21 min), video (24 min)
- Children understood instructions and answered the questions
- Parents reported they were satisfied with the test *“[my son] was comfortable and engaged with the test, it was like a game for him”*
- Great potential (at low cost) to monitor outcomes during COVID-19 lockdown and to complement in-person assessments in the future



Next steps: ongoing piloting

Reliability and validity

- Test-retest correlation, internal consistency across items
- Criterion validity using existing baseline data collected in person in 2019
- Compute difficulty index, discrimination index, global item analysis (ceiling/floor effects)

Mode effects

- Measure the impact of different modes of surveying (audio and video)
- Households with internet access will be randomly assigned to either audio or video surveys



Thank you

