

# MEASURING EARLY LEARNING QUALITY AND OUTCOMES (MELQO) PROJECT

[www.ecdmeasure.org](http://www.ecdmeasure.org)

Linda M. Platas

San Francisco State University

ISCI 2017



It takes  
villages...

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### MELQO Core Team

**Technical Lead: Abbie Raikes, University of Nebraska (formerly of UNESCO and UNICEF)**

UNESCO

*Sobhi Tawil*

*Mariana Kitsiona*

World Bank

*Amanda Devercelli*

*Lucy Bassett*

Center for Universal Education,  
Brookings Institution

*Kate Anderson*

*Tamar Manuelyan Atinc*

*Fabiola Lara*

UNICEF

*Pia Britto*

*Ana Nieto*

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## MODEL and MELE Technical Advisory Group Members, Contributors and Meeting Attendees

Aga Khan Development Network	Caroline Arnold Alison Joyner Sheila Manji	Open Society Foundations	Sarah Klaus
Ambedkar University Delhi	Venita Kaul	Results for Development Institute	Michelle Neuman
Bernard van Leer Foundation	Katelyn Hepworth Joan Lombardi	RTI International	Amber Gove Katherine Merseth Maria Dzula Ritka Michael Willoughby
Brookings Institution	Emily Gustafsson-Wright	San Francisco State University	Linda Platas*★
Child Trends	Kelly Maxwell	Save the Children	Nitika Tolani
Fundação Carlos Chagas	Eliana Bhering	SEAMEO	Abigail Lanceta
Global Partnership for Education	Jean-Marc Bernard Ian Robert Georges Macpherson Alexandra Solano Rocha	University of North Carolina at Greensboro	Belinda Hardin
Inter-American Development Bank	Florencia Lopez-Boo Aimee Verdisco	UNESCO	Yoshie Kaga
International Step by Step Association	Mihaela Ionescu	UNICEF	Ivelina Borisova Claudia Cappa
Kenya Institute of Education	Hellen Kimathi	UNICEF WCARO	Mariavittoria Ballotta
Mathematica Policy Research	Kim Boller	University of Adelaide	Sally Brinkman
McGill University	Frances Aboud*★	University of Hong Kong	Yvonne Belcher
McMaster University	Eric Duku*★ Magdalena Janus*★	University of Hong Kong	Nirmala Rao*★
National Association for the Education of Young Children	Stephanie Olmore	University of Oregon	Sylvia-Linan Thompson*★
New York University	Hiro Yoshikawa*★	University Research Co.	Truphena Choti
		USAID	Marcia Davidson
		World Bank	Sophie Naudeau Rebecca Sayre

\* Lead module developers

# Outline

- MELQO Background and Description
- Implementation
- Validity and Reliability
- Present and Future

# MELQO

## Background and Description

# MELQO Background

- Project initiated in 2014 by UNESCO, UNICEF, Brookings Institution, and the World Bank
- Purpose: develop a set of tools to measure:
  - early childhood development and learning (Measuring Outcomes in Development and Early Learning; MODEL)
  - quality of pre-primary learning environments (Measuring Early Learning Environments; MELE)
- Core team worked with a consortium of experts, non-governmental organizations and multilaterals to build upon current measurement tools to create a common set of items organized into modules

# MELQO Background

- MODEL (children aged 3 to 6-years-old)
  - Direct Assessment (DA ~20 minutes)
  - Teacher and Parent Surveys (TCR)
- MELE
  - Classroom Observation
  - Head Teacher/Director Survey
  - Teacher Survey

# MELQO Background

- Open source
- Unique advantages of a set of tools
  - Allows for exploration of relationships within and between early learning environments and child outcomes
  - Provides evidence for validity and reliability
    - Cross-informant
    - Cross-method
- Focus on feasibility, adaptability, and scalability, with low-cost, easy-to-use materials

# Description: Constructs (UNESCO et al., 2017)

- MODEL (DA & TCR)
  - Literacy (motivation, expressive and receptive language, alphabet knowledge, phonological awareness, comprehension)
  - Mathematics (number, operations, measurement, spatial relations)
  - Socio-emotional development (self-regulation, social understanding, social competence, emotional well-being)
  - Executive functioning (working memory, inhibition)
  - Motor skills (fine motor)

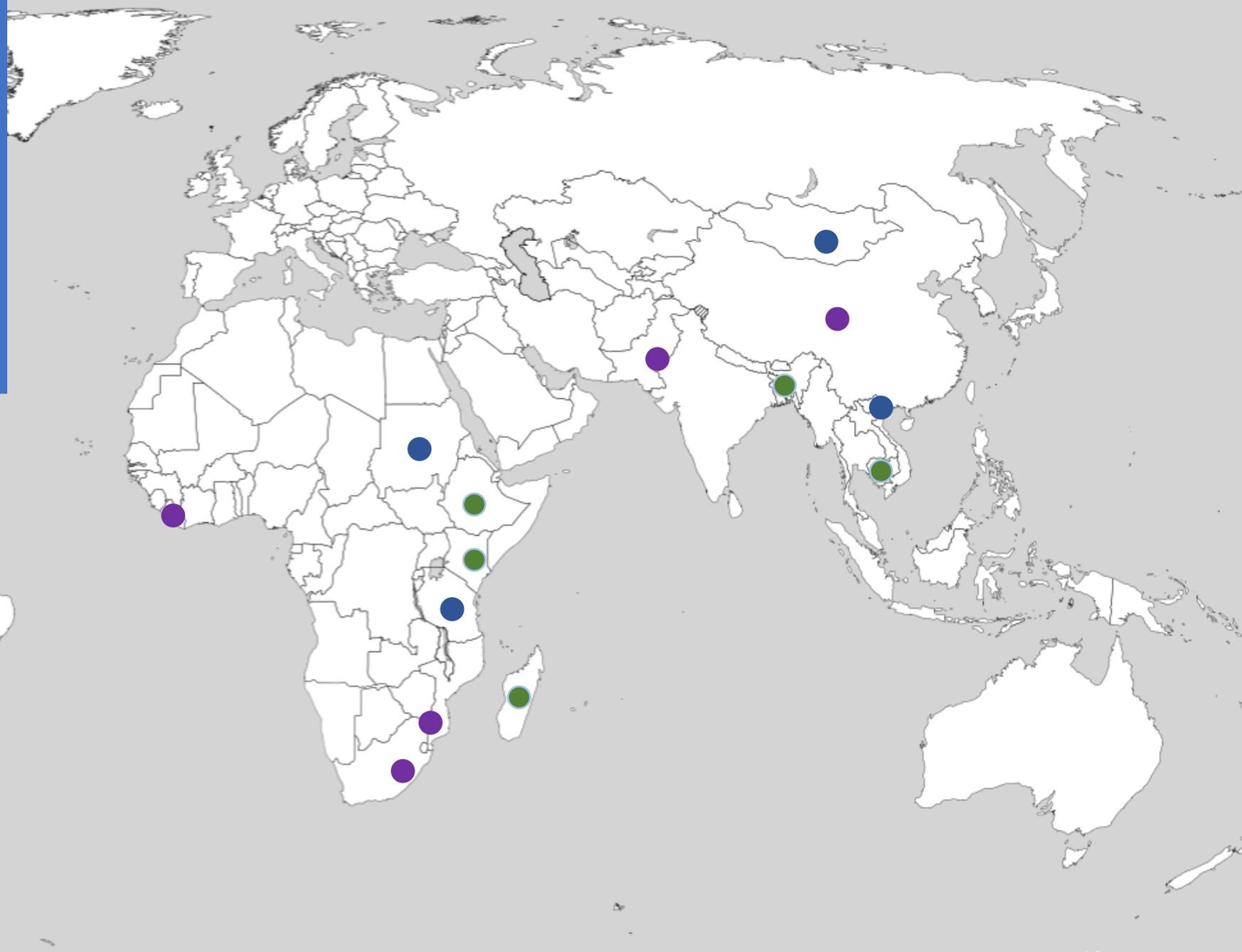
# Description: Contextual Information (UNESCO et al., 2017)

- MODEL (TCR)
  - Socio-economic conditions
  - Parent education
  - Household composition
  - Participation in early learning
  - Home learning environment/parent involvement
  - Child health

# Description: Constructs (UNESCO et al., 2017)

- MELE
  - Play
  - Pedagogy
  - Interactions
  - Environment
  - Personnel
  - Parent & Community Engagement
  - Inclusiveness

# MELQO Implementations



# Four Phases of MELQO Implementation (UNESCO et al., 2017)

PHASE 1



Planning

- Define purpose: research questions to address, links to policy, and programmatic decisions
- Define how to align MELQO with national systems/ standards

PHASE 2



Adaptation and pre-field-testing

- Review modules and assess alignment with national standards and goals
- Modify items to improve alignment, pilot-test and further modify if needed
- Document key questions, use of results and process of adaptation

PHASE 3



Field-testing and data collection

- Train data collectors to reliably collect data
- Field-test data collection and adjust as needed
- Conduct full-scale data collection

PHASE 4



Analysis and application to policy

- Analyse results
- Disseminate and use results to inform policy decisions

# Pilots

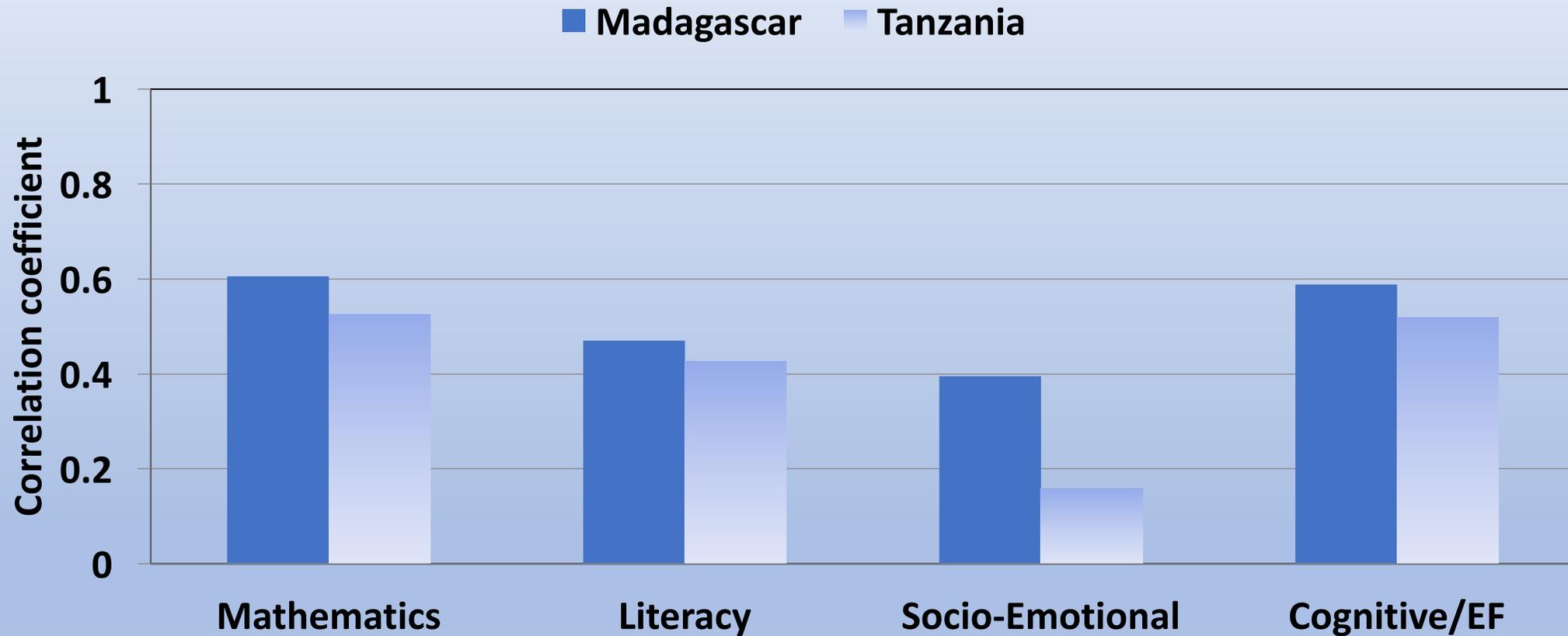
Country	Sample	Location	Language of Assessment
Bangladesh (Meherpur District )	498	Centers	Bangla
Kenya	266	School	Kiswahili
Lao PDR	200	Mixture	Laotian
Mongolia	533	Mobile Schools	Mongolian (455) and Kazakh (77)
Sudan	166	Schools	Arabic
Tanzania (Dar es Salaam)	209	Schools	Kiswahili and English (excluded)

Because these are pilots and therefore do not draw on representative samples of the population, *the results cannot be assumed to be indicative of the skills of the average child in any specific country.*

# Validity and Reliability

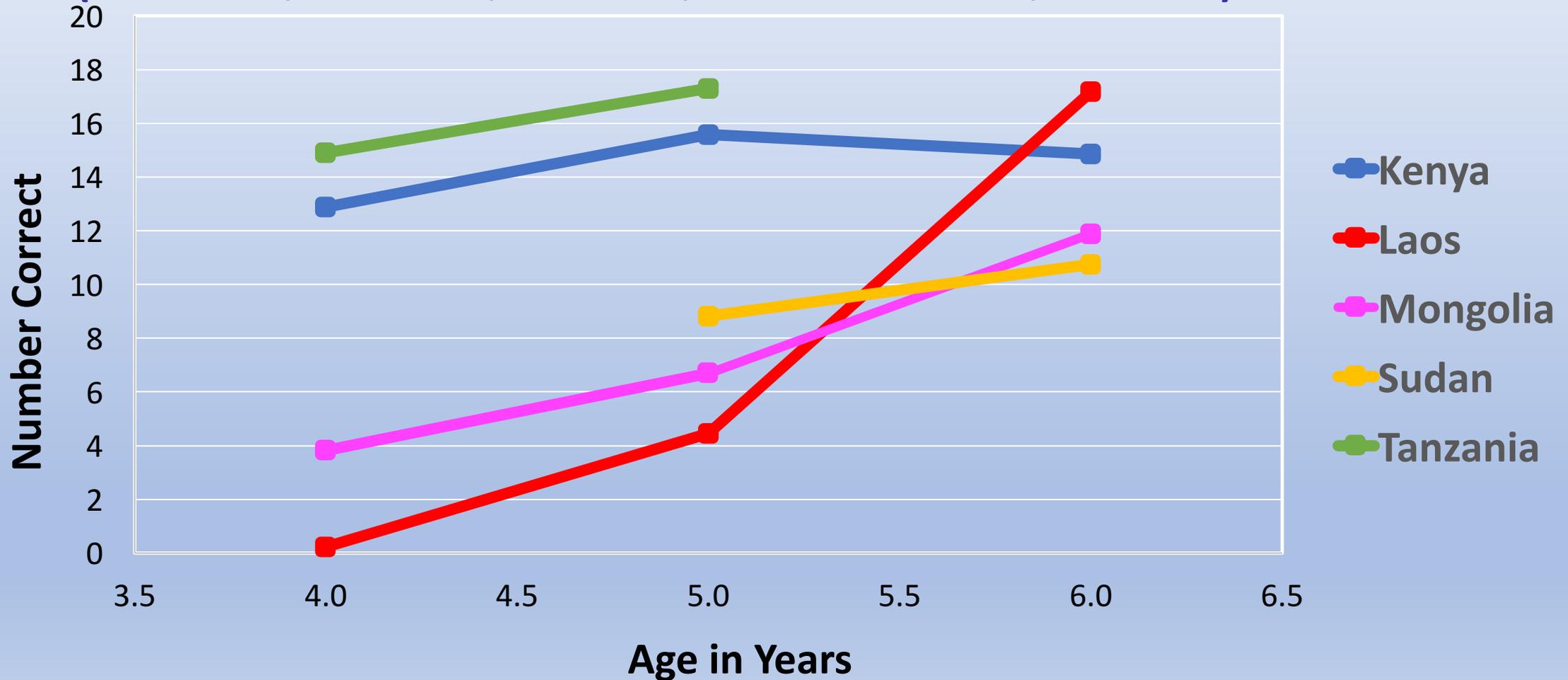
Psychometric properties	Definition	MODEL	MELE
<b>Construct validity</b>	Items accurately index key constructs .	Informed by EC experts, literature review, alignment with common assessment items and constructs	Review by EC experts, literature review, alignment with common assessment items constructs
<b>Concurrent validity</b>	Items correlate well with other established sets of items .	For concurrent validity, parent/teacher reports were validated against direct assessment items . Analytic techniques including factor analyses were used to determine how items were related to one another	Analytic techniques including factor analyses were used to determine how items were related to one another
<b>Inter-rater reliability</b>	Items can be reliably collected and do not vary from one assessment to the next .	Inter-rater reliability established for the direct assessments and teacher/parent reports	Inter-rater reliability established for observational measures
<b>Internal consistency</b>	Items within a scale measure the same underlying construct .	Cronbach’s alphas calculated for each scale; modifications made to direct assessment and parent/teacher scales based on results	Cronbach’s alphas calculated for scales within each country
<b>Cross-cultural relevance</b>	Items are relevant across contexts .	Use of analytic models to test measurement invariance across countries, resulting in evidence for cross-cultural relevance at the domain level	Expert input requested to determine cultural relevance and applicability of constructs and items for observational measures
<b>Predictive validity</b>	Items reliably predict children’s development in the future .	Not yet established	Not yet established

# Inter-rater Reliability: Cross-Informant Correlations: Parents & Teachers (Raikes, Janus, Duku, and Platas, 2017)



# Construct Validity: Correlations with Age Numeral Identification (0-20)

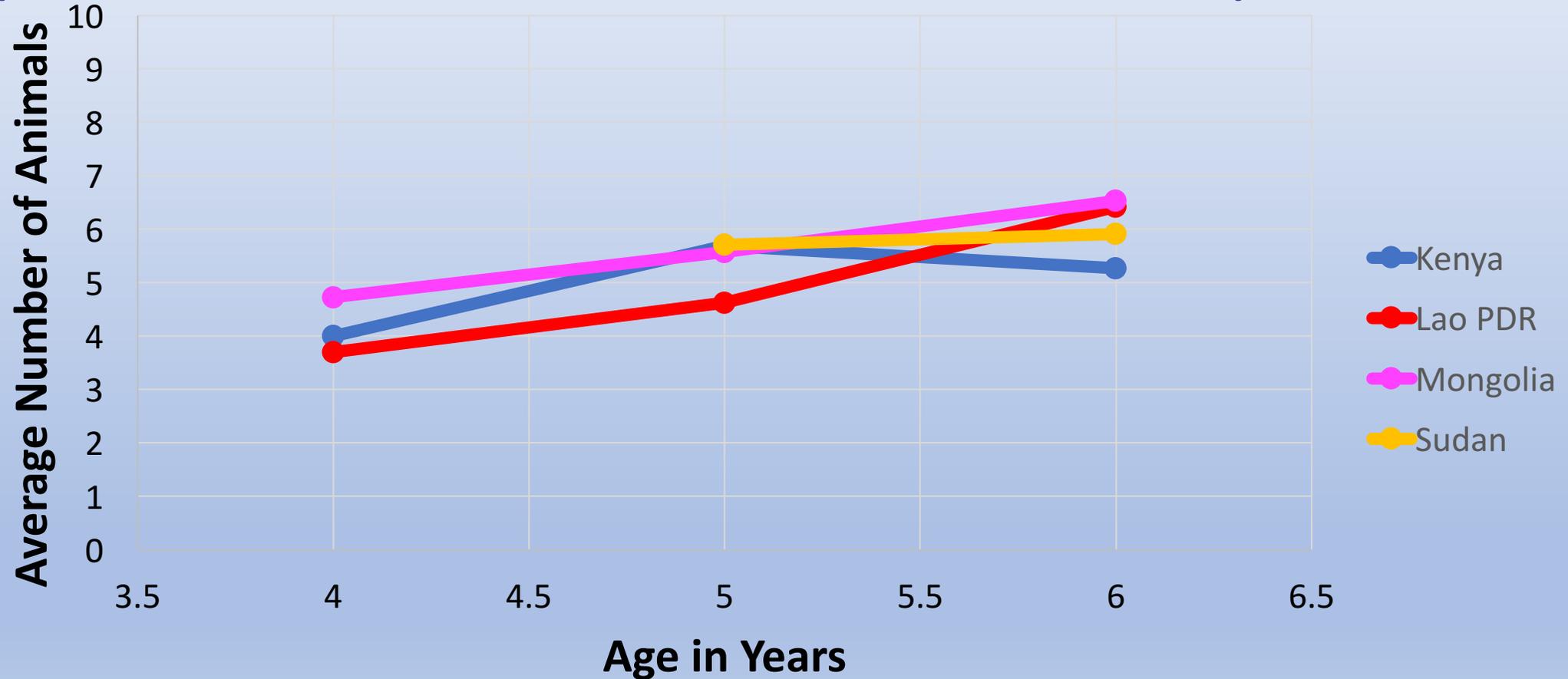
(Raikes, Janus, Duku, and Platas, 2017)



# Construct Validity: Correlations with Age

## Expressive Language: Animals

(Raikes, Janus, Duku, and Platas, 2017)



# Present and Future

- MELQO adapted and implemented in many different countries
  - Data and feedback informed revisions
- Core versions available as bases for country adaptation ([www.ecdmeasure.org](http://www.ecdmeasure.org))
  - Tools and manuals
  - Training materials
- Partnership with the World Bank – emphasis on alignment and adaptation to national standards
- Data and feedback from upcoming large scale projects will inform
  - In-depth examination of validity and performance of items across contexts
  - Publications and resources

# References

- Raikes, A., Janus, M. & Duku, E. & Platas, L. (2017, April). *Assessing children's academic and social skills in low- and middle-income countries: Implications for developmental science*. Panel presented at the 2017 Society for Child Development Biannual Meeting, Austin, TX. Presented at the Society for Research in Child Development Biennial Meeting
- UNESCO, UNICEF, Brookings Institution, & the World Bank (2017). *Overview: MELQO Measuring early learning quality and outcomes*. Retrieved from <https://www.brookings.edu/wp-content/uploads/2017/06/melqo-measuring-early-learning-quality-outcomes.pdf>