

# Assessing Early Development and Learning: The East Asia-Pacific Early Childhood Development Scales (EAP-ECDS)



EAP-ECDS BRIEF  
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## Introduction

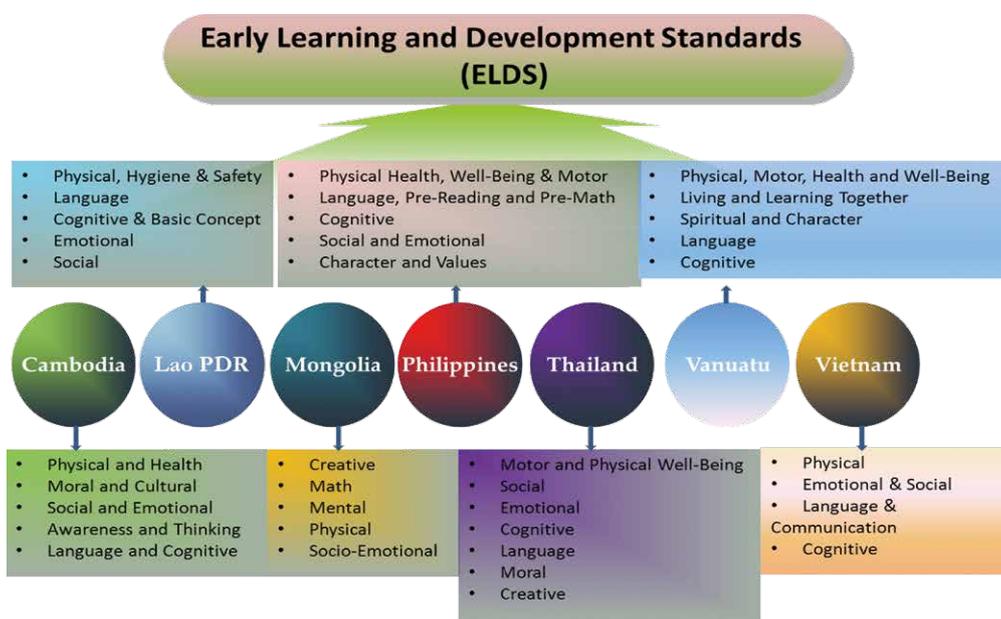
The East Asia-Pacific Early Childhood Development Scales (EAP-ECDS) can be used for direct assessment of children ranging in age from 3 to 5 years. They are the first regional child assessment tool developed based on the culture and values of countries of a world region. The EAP-ECDS were developed between 2010 and 2014 with support of UNICEF, the Asia-Pacific Regional Network for Early Childhood (ARNEC) and the Open Society Foundations (OSF). Technical leadership and guidance for the development and validation of the EAP-ECDS were provided by the Network for Early Childhood Development and Education Research (NECDER), Faculty of Education, The University of Hong Kong.

The ambitious project to develop the EAP-ECDS was initiated in response to the concern that existing Western assessment tools might not be valid in East Asia-Pacific (EAP) countries due to cultural and contextual differences not only in assessment techniques, but also in the overarching constructs to be measured. Culturally and contextually appropriate child development assessments are particularly important in developing regions to support evidence-based policy making, investment and programming for early childhood, so the EAP-ECDS equips Early Child Development (ECD) stakeholders in EAP countries with a reliable measurement tool to assess the holistic developmental progress of children of pre-primary age.

# Conceptual Model

The development of the framework and items for the EAP-ECDS was bottom-up and based on the goals and values for children as defined by the countries themselves. A comprehensive review of the Early Learning and Development Standards from 7 countries (Cambodia, Lao PDR, Mongolia, the Philippines, Thailand, Vanuatu and Viet Nam) led to the creation of a database with 1,738 indicators (Figure 1). These indicators were converted to 100 items that reflected seven key domains of development. A pilot study in China, Fiji and Mongolia demonstrated that the EAP-ECDS were a developmental scale in which older children score significantly higher than younger children within each country. Following rigorous analyses of the pilot results (e.g., item analysis, model fitting, differential response functioning analysis), the original version of the EAP-ECDS consisting of 85 items was developed and validated in 6 countries (Cambodia, China, Mongolia, Papua New Guinea, Timor-Leste and Vanuatu) with a total sample of 8,439 children (4,215 girls). The 85-item EAP-ECDS are valid and reliable. This is demonstrated through correlations with key variables and by high internal consistency for all domains in all countries.

Figure 1. Early Learning and Developmental Standards of countries in the East Asia and the Pacific region



Source: Rao, Sun, & Becher. (2015)

Figure 2. Map of East Asia and the Pacific and the countries where EAP-ECDS has been administered



# East Asia-Pacific Early Childhood Development Scale (EAP-ECDS) Short Form

While the original version of the EAP-ECDS is psychometrically robust, individual child assessments took more than an hour. Therefore, a shorter version – or EAP-ECDS Short Form (SF) – was developed. Use of a SF would reduce assessment time and cost and have a more manageable number of items. Further, it was assumed that the SF would be easier to use by assessors with varying levels of training, experience and competence, working in very different contexts.

A few requirements for the SF were articulated prior to its formulation. First, the SF should include items representing all 7 domains of the EAP-ECDS, which are based on the goals and values of the countries in the region. Second, it should have enough items in each domain to enable accurate assessment of the domain. Third, items should be able to discriminate between levels of performance and should be of a moderate level of difficulty. To these ends, item discrimination and item facility for each item were examined based on the data from the six countries in the validation sample. Around 40% of the total number of items in each domain was selected based on the results of item analysis, while ensuring that the proportion of items from each domain was aligned with the original version (Table 1).

Table 1. Description and number of items in the original version and the Short Form of the EAP-ECDS

	Domain	Description	Number of Items		Competencies assessed
			Original Version	Short Form	
	Cognitive Development	<ul style="list-style-type: none"> <li>• Number sense</li> <li>• Concept formation</li> <li>• Simple categorization</li> <li>• Short-term memory</li> </ul>	21	8	<ul style="list-style-type: none"> <li>• Counting</li> <li>• Addition/Subtraction</li> <li>• Short-term memory</li> <li>• Concepts and Behavioural inhibition</li> <li>• Knowledge of shapes</li> </ul>
	Socio-emotional Development	<ul style="list-style-type: none"> <li>• Ability to label emotions</li> <li>• Social understanding</li> <li>• Methods of conflict resolution</li> </ul>	15	6	<ul style="list-style-type: none"> <li>• Etiquette</li> <li>• Social comprehension</li> <li>• Emotional recognition</li> <li>• Perspective taking</li> </ul>
	Motor Development	<ul style="list-style-type: none"> <li>• Fine and gross motor skills</li> </ul>	7	4	<ul style="list-style-type: none"> <li>• Fine and gross motor control</li> </ul>
	Language and Emergent Literacy	<ul style="list-style-type: none"> <li>• Understanding, speaking and early reading and writing skills</li> </ul>	16	6	<ul style="list-style-type: none"> <li>• Expressive language</li> <li>• Grapheme knowledge</li> <li>• Writing/drawing</li> </ul>
	Health, Hygiene and Safety	<ul style="list-style-type: none"> <li>• Daily habits to protect health</li> <li>• Unsafe practices</li> <li>• Hygiene-related behaviours</li> </ul>	9	4	<ul style="list-style-type: none"> <li>• Hygiene</li> <li>• Safety</li> <li>• Named body parts</li> <li>• Food safety</li> </ul>
	Cultural Knowledge and Participation	<ul style="list-style-type: none"> <li>• Cultural knowledge</li> <li>• Participation in culturally relevant activities</li> </ul>	10	4	<ul style="list-style-type: none"> <li>• Knows local customs</li> <li>• Knows local songs</li> </ul>
	Approaches to Learning	<ul style="list-style-type: none"> <li>• Executive functions</li> <li>• Persistence</li> <li>• Interest</li> </ul>	7	1	<ul style="list-style-type: none"> <li>• Behavioural inhibition</li> <li>• Cognitive flexibility</li> <li>• Engagement</li> </ul>

Source: Rao, Sun, Bacon-Shone, Ip, & Becher. (2016)

## How to Use the EAP-ECDS: Methods of Assessment

The assessments are conducted in individual face-to-face sessions in languages/dialects that children understand. In addition to the assessment with the EAP-ECDS, children's height and weight are measured to determine nutritional status. Further, parents or guardians are interviewed to gain information about children's participation in early childhood programmes, health and hygiene practices and the nature of the learning environment at home (Table 2).

Table 2. Methods of data collection in the EAP-ECDS

Method	Description
Direct assessment (EAP-ECDS)	<ul style="list-style-type: none"> <li>- A trained assessor conducts an untimed test with a child in a language the child understands. The Scales are individually administered. This means that an assessor can administer them to one person at a time. Many of the items in these Scales require oral responses from the child or necessitate the manipulation of test materials by the child. The total administration time for the EAP-ECDS is normally more than an hour (45 minutes for SF) depending on the child's age, ability, personality, temperament and mood as well as his or her rapport with the assessor.</li> <li>- Items are administered in a fixed order.</li> </ul>
Direct measurement	<ul style="list-style-type: none"> <li>- A child's height and weight are measured by the assessor after the assessment.</li> </ul>
Parent interview	<ul style="list-style-type: none"> <li>- One of the child's parents or guardians is interviewed in an individual session. The interview may occur when the child is being assessed. Parents may also be requested to complete a questionnaire in lieu of doing an individual interview. Items were developed by the research team or adapted from other measures such as UNICEF's Multiple Indicator Cluster Survey (MICS).</li> <li>- The interview protocol has four sections: standard demographic information and information about the participant; family background; support for the participating child's early learning and development; and the target child's health and habits.</li> </ul>



## Administration of the EAP-ECDS Short Form

The EAP-ECDS SF was first administered in Myanmar between November 2016 and February 2017, for which UNICEF Myanmar commissioned The University of Hong Kong to provide technical support to the Yangon University of Education. The study has produced a number of key findings – both common with other countries and unique to the country – and evidence-based recommendations.

For countries wishing to administer the EAP-ECDS SF, it is important to secure the budget, human resources, time as well as political will, so that the data collection and analysis are done with scientific rigour and the findings and recommendations are utilised for future policy-making and/or programming. In addition, country teams need to take into account in-country costs, including for training organisation and recruitment of assessors. Table 3 lists indicative budget items based on the Myanmar experience and Table 4 shows an indicative timeline in administering the EAP-ECDS SF.

Table 3. Budget requirements for administering the EAP-ECDS Short Form

Purpose	Task	Total no. of EAP-ECDS team member days
Preparation	Preparation for workshop on test administration and quality assurance	4
Training	In-country training for test administration of the EAP-ECDS SF and parent interview - Travel costs for 2-3 members - Per Diem Allowance (PDA) for 2-3 members	6
	Second local visit for technical support and quality assurance (Optional) - Travel costs for 2-3 members - PDA for 2-3 members	4
Adaptation and Technical Support	Consultation feedback on country's pilot study	4
	Technical support throughout data collection period	6
	Project management and quality assurance *	6
Data analysis and dissemination	Data preparation and analysis	20
	Report writing	12
Others	12 complete sets of EAP-ECDS SF test kits Preparation and scanning of Optical Character Recognition forms Overheads on Remuneration and Reporting, The University of Hong Kong In-country costs – workshop organisation, venue, payment of assessors	

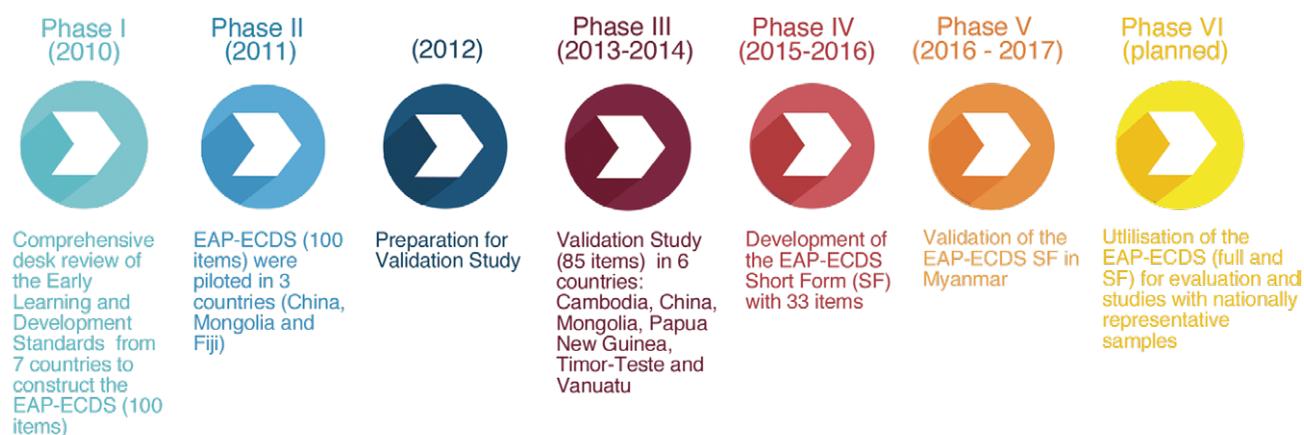
\* Varies depending on size of study

Table 4. Suggested work plan for EAP-ECDS Short Form

<b>LAUNCH AND PLANNING</b> (about 3 months)	Hold meeting(s) to identify main research questions of government (with local/regional/global experts)
	Appoint task force or focal point from government
	Review existing curriculum and service delivery standards and align with assessment
	Propose study design based on government priorities
	Map out project timeline and budget
	Write and release Terms of Reference for data collection
	Get ethical approval as needed
	Gather necessary background data for sampling purposes
	Select contractors and finalize terms of contract
<b>ADAPTATION AND PRE-FIELD TESTING</b> (about 1 month)	Hold EAP-ECDS SF in-country training for potential assessors and interviewers (training should include access to children and parents so assessors and interviewers can practice using the instruments)
	Translate and back-translate tools
	Hold in-person meeting(s) with national experts (including curriculum developers, academics conducting ECD research, school inspectorate (or equivalent) to adapt items/measures and align with curriculum
<b>PILOTING/ DATA COLLECTION</b> (about 4 months)	Test tools on small sample and further revise and adapt tools as needed
	Organise refresher training for assessors and interviewers for data collection (training should include access to children and parents so assessors and interviewers can practice using the tools)
	Collect data
<b>ANALYSIS AND SYNTHESIS OF RESULTS AND DISSEMINATION</b> (about 3 months)	Clean data
	Analyse findings
	Synthesise findings in easily digestible reports for different audiences
	Distil findings for policymakers based on current policy plans
	Disseminate findings through meetings and other events with national policymakers, academics, civil society, donor partners, regional/district education officials, teachers/principals/school managers, and parents/general public
Make findings accessible/understandable for teachers and parents, etc.	

The development of the EAP-ECDS, which started in 2010, has reached another momentum with the finalisation of the Short Form and its first successful administration in Myanmar.

## EAP-ECDS Phases



## Key Considerations in Rolling Out the EAP-ECDS Short Form

The EAP-ECDS SF is a reliable and valid measure of early child development. It is internally consistent and there is a correlation between parental report of child development and the results of direct assessment of children.

- **Level of Analysis:** The EAP-ECDS are designed to analyse at the population level and should never be used to assess the abilities of the individual child. Children develop at different rates across different domains and thus a summative assessment in early childhood requires very different, complex tools if done at all.
- **Technical leadership:** It is important that the administration of the EAP-ECDS is led by a research team(s) with solid knowledge of child development and strong research capability as the data collection and analysis involve high level methodological and statistical analyses.
- **Availability of financial and human resources:** While the creation of SF reduced substantially time and cost, successful administration of EAP-ECDS SF depends much on solid research design and execution, and this depends on sufficient financial and human resources. The availability of well-trained and carefully selected supervisors, assessors and interviewers is critical in data collection.
- **Political commitment:** For the research findings and recommendations to be used to inform policies and programmes, the key actors and decision makers need to be mobilised and this should be part of the dissemination and communication strategy of the research.



## EAP-ECDS Team



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