Technical Note 53

Young Lives

Cognitive and Achievement Tests in the Young Lives Study

Patricia Espinoza Revollo and Douglas Scott

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About Young Lives

Young Lives is an international study of childhood poverty and transitions to adulthood, following the lives of 12,000 children in four countries (Ethiopia, India, Peru and Vietnam) since 2001. **www.younglives.org.uk**

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The views expressed are those of the author(s). They are not necessarily those of, or endorsed by, Young Lives, the University of Oxford, Foreign, Commonwealth & Development Office or other funders.

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Douglas Scott is a Quantitative Research Officer at Young Lives. He is an economist who specialises in development economics and applied microeconomics, and holds a PhD in Economics from the University of Nottingham and an MSc in Economics for Development from the University of Oxford. He has worked on a number of projects relating to poverty and vulnerability, both in the UK and sub-Saharan Africa. His current research focuses on the impact of economic shocks on the physical and cognitive development of children in low- and middle-income countries.

1. Introduction

With the aim of investigating the drivers and impact of childhood poverty, since 2001 Young Lives has collected a wealth of quantitative and qualitative data on many dimensions of children's development in four low- and middle-income countries: Ethiopia, India (the states of Andhra Pradesh and Telangana), Peru and Vietnam. Young Lives has followed 12,000 children from two cohorts since 2001: the Younger Cohort, born in 2001–02, were about 1 year old when the study began, while the Older Cohort, born in 1994–95, were around 8 years old. Table 1 presents the average ages of children from both cohorts at the time of the interview in each survey round.

Table 1. *Survey rounds and cohort ages*

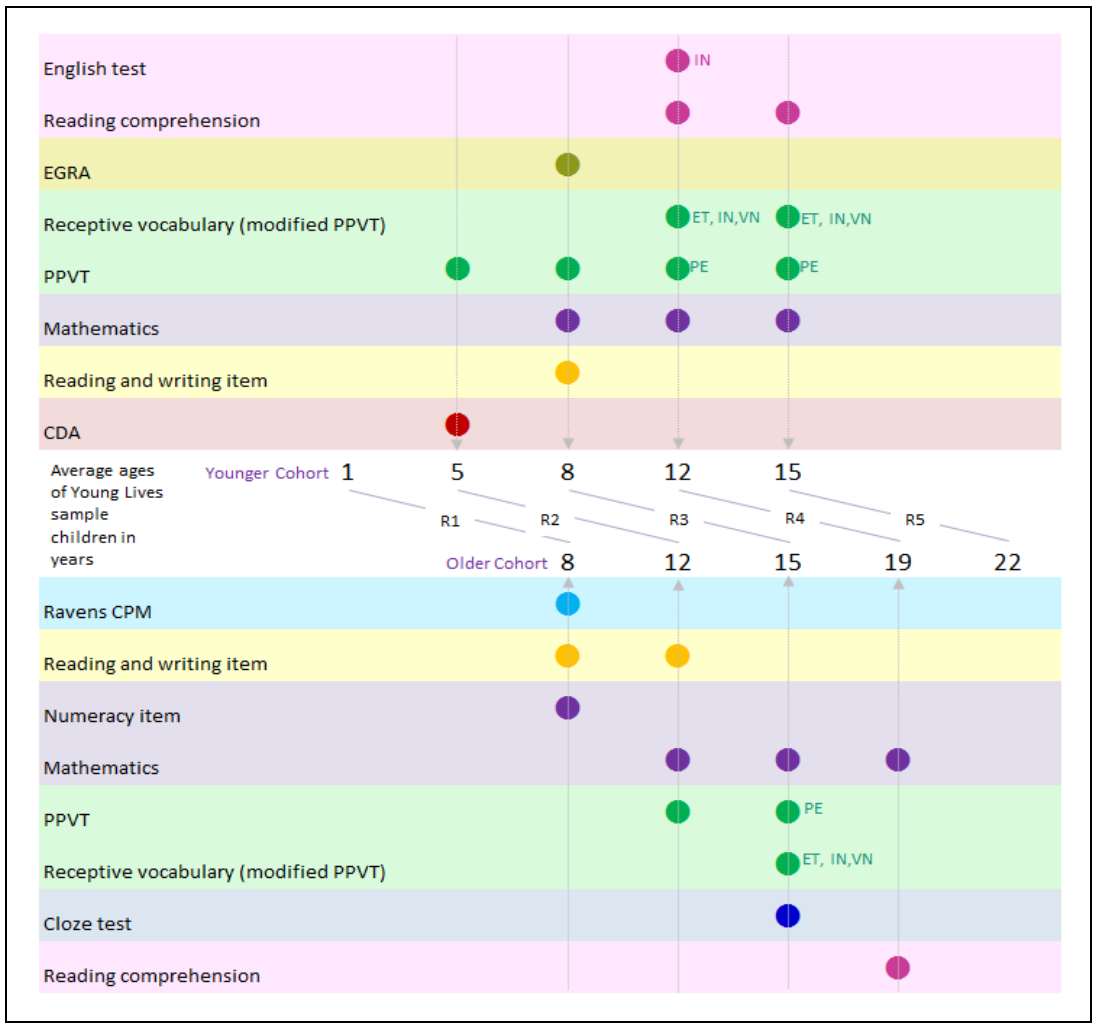
Year	Round	Average age (years)	
		Younger Cohort	Older Cohort
2002	1	1	8
2006	2	5	12
2009	3	8	15
2013	4	12	19
2016	5	15	22

Since the study began, Young Lives has used different instruments to test children's intellectual and cognitive abilities. These provide estimates of ability that work both as outcomes and predictors for later outcomes. This technical note provides an overview of these instruments, in order to guide and support researchers using these data. Specifically, this note aims to:

- bring together and summarise the information available on cognitive and achievement competencies tests administered to children at different ages.
- provide basic information on the instruments, what they measure, their development, adaptation and administration, scoring, and changes over time.
- direct the reader to other sources of information.

Figure 1 summarises the instruments used Young Lives, by round of data collection and cohort. This technical note is organised around the specific instruments administered to the sample children.

Figure 1. *Summary of cognitive and achievement tests administered to both cohorts during different survey rounds*



Notes: ET, IN, PE and VN represent the countries where the test was administered: Ethiopia, India, Peru and Vietnam, respectively. From Round 3 (R3) to Round 5 (R5) the closest-in-age siblings of the Younger Cohort children were tested in PPVT/receptive vocabulary in Ethiopia, Peru and Vietnam. In India, the closest-in-age siblings of the Younger Cohort children were tested in mathematics in Round 4 (R4) and Round 5 (R5).

2. Cognitive and achievement tests

2.1. Numeracy item

At the beginning of the study in 2002, 8-year-old children from the Older Cohort were tested on their numeracy knowledge through a single item that required them to solve a basic multiplication question: 2x4. Children scored 1 if they answered correctly and 0 if they answered incorrectly. Table 2 summarises the answers given by these children in the different countries.

The numeracy item was later integrated into larger mathematics achievement tests administered in Round 2 to the Older Cohort (at 12 years old) and in Round 3 to Younger Cohort (at 8 years old).

Table 2. *Answers to the numeracy item for 8-year-olds (Older Cohort) in Round 1 (2002)*

	Ethiopia %	India %	Peru %	Vietnam %
Correct answers	32.5	86.5	54.8	66.3
Incorrect answers	42.2	9.2	18.5	10.7
Refused to take the test/did not respond	25.3	4.3	26.8	23
Observations	1,000	1,008	714	1,000

2.2 Reading and writing items

A set of reading and reading items were initially administered to the Older Cohort in Round 1 (at age 8). The reading item required children to read three letters, a word, and a sentence. Children were scored 1 if they could read the sentence, 0.66 if they could read the word, 0.33 if they could read the letters, and 0 if they could not read anything or did not respond.

An example of the reading card:

T, A, H,

Hat

The sun is hot

The writing item required children to write a simple sentence, for example, **'I like dogs'**, which was spoken out loud by the interviewer. Children were scored 1 if they could write the sentence without difficulty or errors, 0.5 if they could write the sentence with difficulty or errors, and 0 if they could not write the sentence or did not respond. Table 3 presents the answers given by 8-year-olds from the Older Cohort to both the reading and writing items.

Table 3. *Answers to the reading and writing items for 8-year-olds (Older Cohort) in Round 1 (2002)*

	Ethiopia %	India %	Peru %	Vietnam %
Reading				
Can't read anything	53.9	7.8	9.4	4.3
Reads letters	19.5	27.1	5.0	3.4
Reads words	5.3	13.2	1.8	4.5
Reads sentences	21.0	50.8	79.7	87.2
Refused to take the test/did not respond	1.1	1.1	4.1	0.6
Writing				
Cannot write the sentence	56.1	18.4	12.6	8.2
Yes, without difficulty/errors	22.9	51	53.4	74.1
Yes, with difficulty/errors	19.6	27.5	31.7	17
Refused to take the test/did not respond	1.4	3.2	2.4	0.7
Observations	1,000	1,008	714	1,000

Each country adapted the sentences to be context- and language-specific. For instance, in Peru, instead of **'the sun is hot'** the sentence was changed to **'the bread is tasty'** ('*el pan es rico'*). Therefore, while not being exactly the same, the sentences were comparable in their level of difficulty.

For the Older Cohort, both the reading and the writing items were kept in the following survey round to ensure comparability, even though it was assumed that most children (then aged 12) would be able to answer them correctly. Table 4 shows the results for 12-year-olds in Round 2. As expected, most performed well in both the reading and writing items and, therefore, the test was discontinued for the Older Cohort in future rounds.

Table 4. *Answers to the reading and writing items for 12-year-olds (Older Cohort) in Round 2 (2006)*

	Ethiopia %	India %	Peru %	Vietnam %
Reading				
Can't read anything	10.0	4.8	1.2	0.9
Reads letters	14.4	5.5	0.9	1.2
Reads words	14.4	7.8	1.3	1.3
Reads sentence	60.1	80.4	96.4	95.0
Refused to take the test/did not respond	1.1	1.5	0.3	1.6
Writing				
Cannot write the sentence	11.1	5.2	1.2	2.0
Yes, without difficulty/errors	31.3	23.8	13.1	4.2
Yes, with difficulty/errors	55.1	68.4	85.3	92.1
Refused to take the test/ did not respond	2.6	2.5	0.4	1.7
Observations	979	994	685	1,000

To ensure inter-cohort comparability, the reading and writing items were also administered to the 8-year-old children from the Younger Cohort in Round 3 (2009). Table 5 presents the answers provided by this younger group. The writing and reading items were discontinued thereafter.

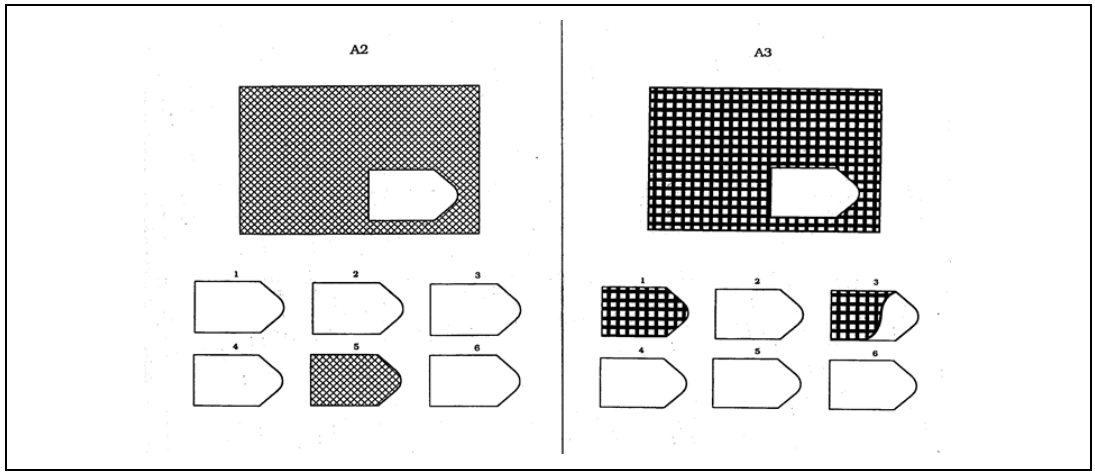
Table 5. *Answers to the reading and writing items for 8-year-olds (Younger Cohort) in Round 3 (2009)*

	Ethiopia %	India %	Peru %	Vietnam %
Reading				
Can't read anything	50.5	11.3	6.0	2.3
Reads letters	15.4	21	7.9	2.4
Reads words	7.4	14.7	4.3	6.1
Reads sentence	26.6	52.9	81.8	89.3
Refused to take the test/did not respond	0.1	0.1	0.1	0.0
Writing				
Cannot write the sentence	58.9	22.9	12.0	3.6
Yes, without difficulty/errors	17.4	43.5	61.8	87.7
Yes, with difficulty/errors	23.5	32.9	26.2	8.7
Refused to take the test/did not respond	0.2	0.8	0.1	0.0
Observations	1,877	1,905	1,924	1,938

2.3. Raven's Coloured Progressive Matrices (Raven's CPM) Test

This test measures the ability to think clearly and is designed for young children (from the ages of 5 to 11), as well as older adults. It comprises three sets of 12 items (36 items in total) intended to evaluate aspects related to the cognitive process and the intellectual capacity of the child. The test produces a single raw score based on the number of correct answers.[1] Figure 2 shows the distribution of correct answers for the four countries.

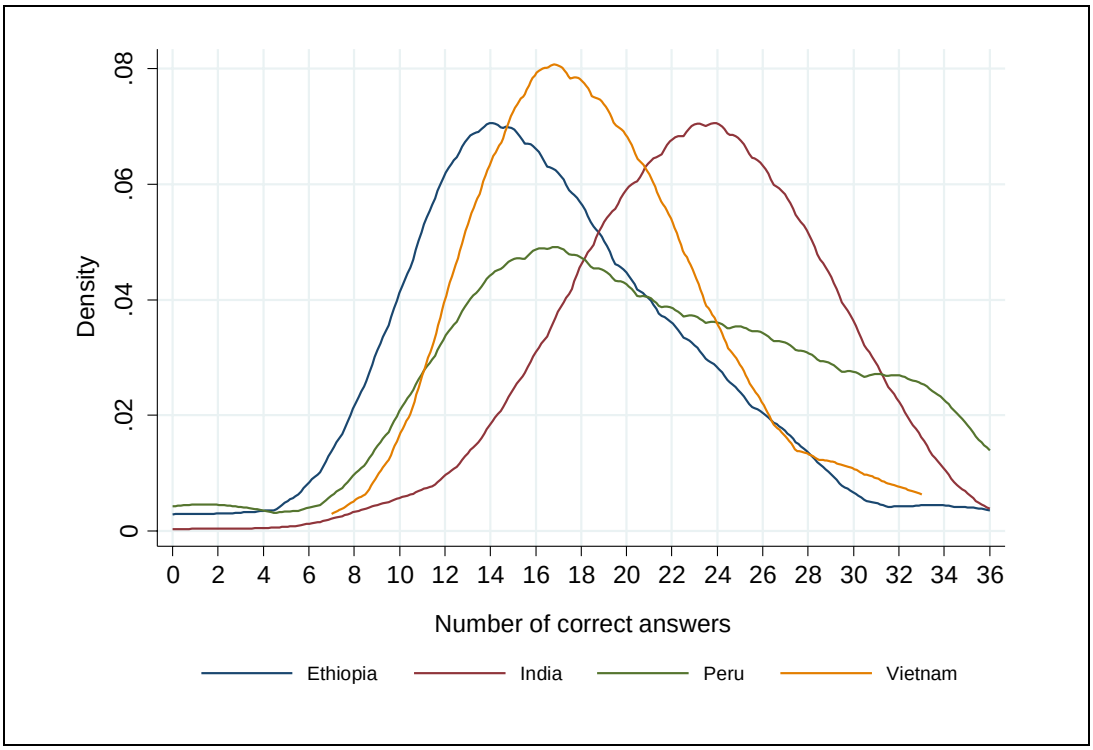
An example of Raven's CPM items:



1 The answer key to the Raven's CPM is provided in the Appendices.

The Raven's CPM was administered to 8-year-old children (Older Cohort) in Round 1. In India and Peru, all 8-year-olds were tested. However, in Ethiopia, the instrument was only administered to 251 children in the urban areas of five sentinel sites, three of which were in Addis Ababa. In Vietnam, the Raven's CPM was only administered to a random sample of 200 children.

Figure 2. *The distribution of correct answers in the Raven's CPM test for 8-year-olds (Older Cohort) in Round 1 (2002)*

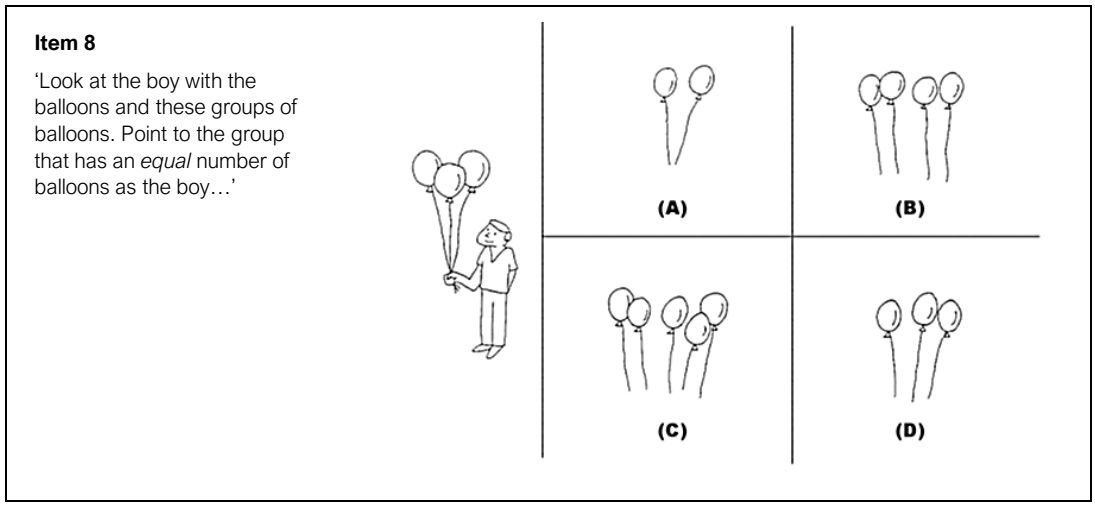


The administration of the Raven's CPM test proved to be more difficult and burdensome than anticipated (the reason why it was only administered in urban areas in Ethiopia). Pilot tests, conducted prior to Round 2, also contributed to the decision to discontinue its administration in future rounds.

2.4. Cognitive Developmental Assessment (CDA)

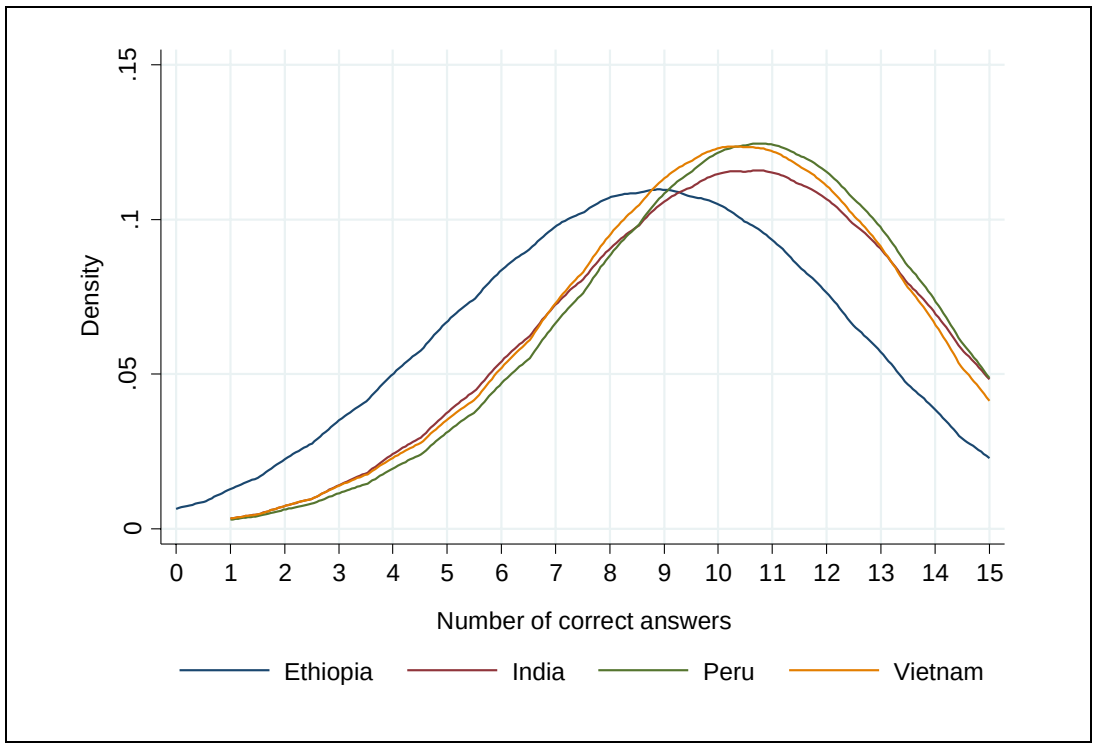
The Cognitive Development Assessment (CDA) was developed by the International Evaluation Association (IEA) to assess the effect of preschool attendance among 4-year-olds. The instrument originally comprised three subsets of measures intended to assess spatial relation, quantity, and time. However, the pilot test conducted prior to Round 2 revealed that the spatial relation subscale took too long to administer and that the time subscale had low reliability. Hence, only the quantity subscale was administered in Round 2 to the Younger Cohort (then age 5).

An example of a CDA – quantity subscale item:



The quantity subscale comprised 15 items. Children were asked to select the image (out of three or four options) that best illustrated the quantity concept verbalised by the examiner. The CDA quantity subscale produced a raw score between 0 and 15. Children scored 1 for each correct answer, and 0 for incorrect answers or when they did not answer the question at all. Figure 3 shows the distribution of correct answers for the four countries.

Figure 3. *The distribution of correct answers in the CDA test for 5-year-olds (Younger Cohort) in Round 2 (2006)*



Given that the CDA was targeted at preschoolers, it was decided to discontinue its administration for subsequent rounds.

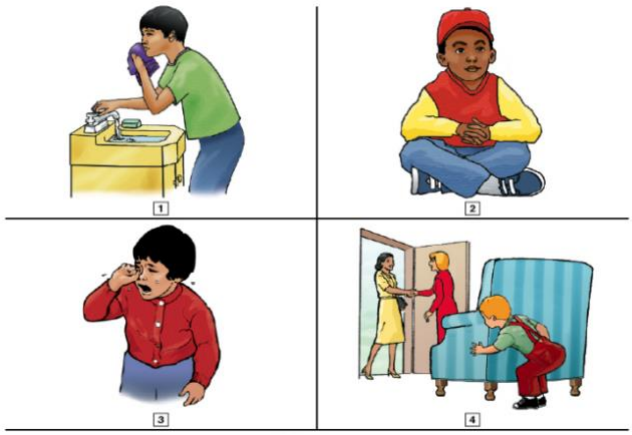
2.5. Peabody Picture Vocabulary Test (PPVT) and Receptive Vocabulary Test

The Peabody Picture Vocabulary Test (PPVT) is a test of receptive vocabulary – or vocabulary acquisition – designed for young children (from the age of 2.5 years) and adults. The PPVT consists of different vocabulary items arranged in order of increasing difficulty. Each item has four simple illustrations arranged in a multiple-choice format. The person being examined is asked to select or point to the picture that best illustrates the meaning of a word presented orally by the examiner. The test is untimed.

An example of a PPVT item:

Instruction:

Put your finger on the picture that shows crying



In Round 2 (2006), the PPVT was administered to children of both age cohorts (at ages 5 and 12). Because the PPVT is designed to be administered in English, the version used to test children in India, Ethiopia and Vietnam (the PPVT-III) was translated – and checked through back-translation – in each country's main language(s):

- Ethiopia – Amharic, Tigrinya and Oromifa
- India (the states of Andhra Pradesh and Telangana) – Telugu
- Vietnam – Vietnamese

For children in Peru, a Spanish version of the Revised Peabody Picture Vocabulary Test (PPVT-R), which was adapted for use in Latin America, was already available for administration, and hence no translation was needed. However, the test was also translated into Quechua to make it available for children who could not answer in Spanish. The two versions of the PPVT used in Young Lives contain a different number of items: the PPVT-III has 204 items (grouped into 17 sets of 12 items), while the PPVT-R has only 125 items.

When administering the PPVT, not all children answer all items, but rather a set contained within a *critical range*, representing the items contained between the *basal item* and a *ceiling item*; both of which were established prior to the test, depending on the number of consecutive correct and incorrect answers. This allows for the test to be administered to different age groups.

The PPVT produces raw and standard scores, the latter being converted using a conversion table in the instrument's manual. However, in order to generate scores that had acceptable levels of reliability and validity in each of the languages in which the PPVT was translated, only the raw scores were used. In addition, the Young Lives team has produced a *corrected* raw score which excludes all poorly-performing items.[2]

In Round 3 (2009), the PPVT was again administered to both cohorts, with some minor adjustments from the test administered in Round 2. Previous results indicated that some children in the Older Cohort were able to reach the most difficult items. This should not have happened, given that the test measures vocabulary up to adulthood. This was probably due to the adaptation of the instrument to the various languages. Prior to Round 3, local teams in Ethiopia, India and Vietnam were asked to convene a group of experts and revise the instrument. Peru continued with the administration of the PPVT-R in Spanish, as happened in Round 2.

In Round 4 (2013) and Round 5 (2016) the PPVT used in Ethiopia, India, and Vietnam underwent some notable changes and was henceforth referred to as the Receptive Vocabulary Test. As mentioned earlier, the PPVT is designed to measure receptive vocabulary, primarily in English (and Spanish with the adapted test), and for Ethiopia, India, and Vietnam, Young Lives translated the instrument into the main languages in each of these countries. However, following Round 3, it became evident that this translation had sometimes distorted the meaning and difficulty of some of the words. In some cases, words in English which did not have equivalent translations into single words had been translated as phrases. For example, in Telugu, there is no word for 'hurdling', so the literal translation equates to 'the boy jumps over the fence'. As a result, some items may have lacked cognitive-equivalence once they were translated (they did not keep the same level of difficulty as the original word). This meant that children were able to score abnormally high on the test, reaching the ceiling items too easily, and that the progressive difficulty of the words was distorted.

A further complication, especially in India, was the language in which children chose to respond. Children were allowed to answer in whichever language they felt most comfortable and sometimes opted to use different languages than those used in other tests in the survey. Sometimes the language chosen did not correspond to their mother tongue.

Therefore, in Round 4, country-specific subsamples of the original 204 items of the PPVT were selected for Ethiopia, India and Vietnam, through careful item analysis (see León and Singh 2017). Approximately one-quarter of the total items were selected for Ethiopia and India, and one-third for Vietnam. This same set of items was used in Round 5 without any modifications. In addition, more strict rules of administration were followed. Notably, children were required to answer in the languages for which the test was developed (main languages) and this language should be their mother tongue. In Ethiopia, for instance, if the child's language was not Amharic, Oromifa or Tigrinya, the test was not administered.

As Peru administered the Spanish version of the PPVT-R, the country continued administering this instrument without any modifications in both Round 4 and Round 5.[3] In

2 Some items in Round 2 performed poorly in the psychometric analysis (Cueto et al. 2009), and thus were discarded in order to create more reliable scores.

3 The full list of items administered in every country and all rounds is provided in the Appendices.

Ethiopia, Peru and Vietnam, from Round 3 to Round 5, the siblings closest-in-age to the Younger Cohort children were tested using the PPVT and receptive vocabulary tests. This was done using the same instruments that were administered to the Younger Cohort.

2.6. Mathematics achievement test

The mathematics test was first administered to the Older Cohort in Round 2 and has since been developed to reflect the ages of the children, adjust the levels of difficulty, and provide enough variability to capture the full range of abilities. As Young Lives is a non-school-linked study, achievement tests follow a norm-referenced framework, which means that scores are to be interpreted relative to their distributions, such that a score is ranked within one or more distributions of scores or compared to the average performance of test-takers from several reference populations (Cueto et al. 2009).

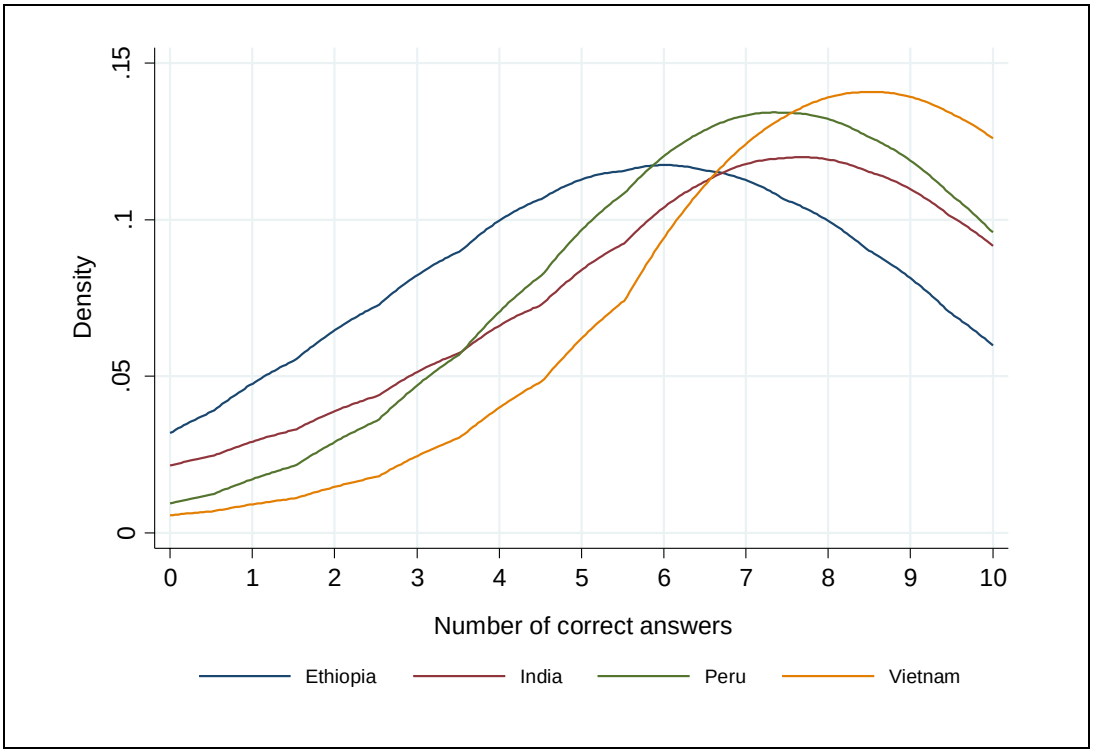
In Round 2 (2006), the mathematics test was only administered to 12-year-olds from the Older Cohort. The test consisted of 10 items selected from the Trends in International Mathematics and Science Study (TIMSS), developed by the IEA in 2003. Items with different levels of difficulty were selected, with the objective of discriminating between low and high achievers. The test also included the numeracy item administered in Round 1 (2x4).[4]

Prior to the main data collection, a pilot test was conducted, where children of a similar age to the sample children (approximately 12 years old) were presented with two booklets, each containing 27 items. One booklet included items ordered in terms of difficulty and the second with items recorded in a randomised order. The pilot study showed that the first booklet had a higher reliability and took less time to complete. The number of items was reduced to 10 for the final instrument, taking into account variance in item difficulty and exercise type.

Where relevant, test items were translated into each country's main languages by the local teams and were further verified by local experts. The test was not strictly timed, but interviewers were instructed to encourage children to complete the test in 15 minutes.

4 The numeracy item was not included in the maths test in India. Instead, a similar item, 2x7, was added.

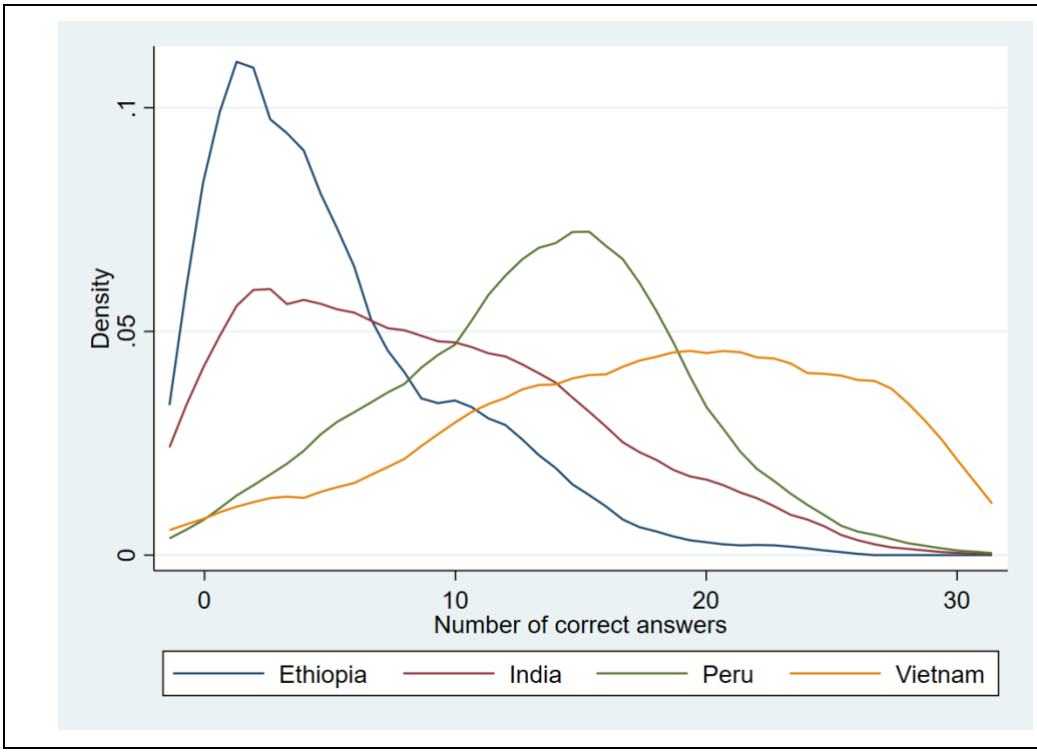
Figure 4. *The distribution of correct answers in the maths test for 12-year-olds (Older Cohort) in Round 2 (2006)*



A post-test analysis showed that the distribution of the scores was negatively skewed, showing a ceiling effect (Figure 4), which indicated that this particular test would not be suitable for older children in future rounds. Therefore, future tests were constructed by keeping some items, to allow for linking achievement scores over time, but also introducing new questions of higher difficulty.

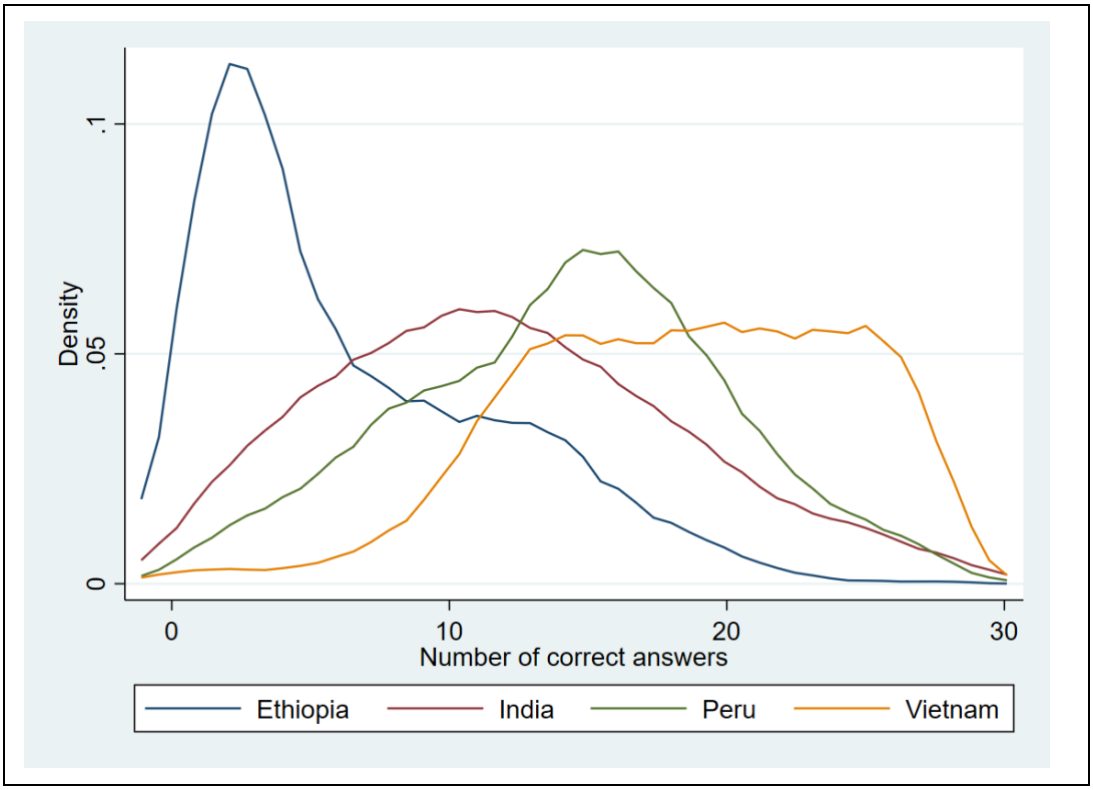
The Round 3 (2009) mathematics test was modified using existing items from national and international testing programmes, and newly developed items based on existing measures of mathematics skills. The new test for the Older Cohort included 30 questions, divided into two sections. The first section measured the child's ability to perform basic mathematical operations, and included 20 items related to addition, subtraction, multiplication, and square roots (using both whole numbers and fractions). Children were allotted 8 minutes to complete this section. The second part of the test contained 10 problem-solving items developed by TIMMS and PISA. The topics covered were: (1) data interpretation; (2) number problem-solving; (3) measurement; and (4) basic geometry, with all questions to be completed within 10 minutes. The tests were identical in the four study countries and the distribution of the number of correct answers for 15-year-olds in 2009 is reported in Figure 5.

Figure 5. *The distribution of raw maths scores for 15-year-olds (Older Cohort) in Round 3 (2009)*



For the Younger Cohort (at 8 years old), the mathematics achievement test included 29 questions, also divided into two sections. The first section was intended to measure basic quantitative and number concepts, through nine items on counting, knowledge of numbers, number discrimination, and use of basic mathematical operations (including the 2x4 numeracy item, administered in previous rounds to the Older Cohort). These questions were read by the examiner with the aid of cards, so that poor reading skills would not influence scores. The second section aimed at measuring the child's ability to perform basic mathematics operations with numbers. It included 20 questions on addition, subtraction, multiplication and division (using whole numbers). The items were ordered with increasing levels of difficulty and children were allotted 8 minutes for this part of the test. Again, the tests were identical across countries. Figure 6 shows the distribution of raw maths scores for 8-year-olds in 2009.

Figure 6. *The distribution of raw maths scores for 8-year-olds (Younger Cohort) in Round 3 (2009)*



In Round 4 (2013), more emphasis was placed on contextual validity and the adaptation of the cognitive tests to each study country. Therefore, for the pilot test prior to the fourth round, a potential item bank was compiled, using old and new age-appropriate items from existing international evaluation tests, national evaluations, and adaptations from commercial tests. These items were divided into three different booklets: basic skills (common across countries); intermediate skills; and advanced skills.

During the pilot study, all children began with the intermediate questions of their respective country and cohort (booklet 2). If successful, they would move on to booklet 3, and if not, they would move to booklet 1. Therefore, children would answer only two of the three booklets. Results from this pilot study informed the development of new mathematics tests for both age cohorts. The resulting tests have only a few common items across countries and a different number of items per test (Table 6). The time allotted for the mathematics test was 40 minutes in the four countries and for both cohorts.

Table 6. *The number of items in the mathematics test in Round 4 (2013)*

	Younger Cohort 12-year-olds	Older Cohort 19-year-olds
Ethiopia	28	28
India	29	30
Peru	29	29
Vietnam	34	27
Common items across countries	13	7

Similarly, in Round 5 (2016), the mathematics tests were developed independently for each country, keeping core items to allow scores to be equated. Only 15-year-olds from the Younger Cohort were tested in this round. The maths test in 2016 included new items selected from the Programme for International Student Assessment (PISA) tests (OECD 2013), which were translated, adapted and piloted in each country prior to the survey round. Although the tests differed across countries, a larger number of common items were included in all countries (Table 7). Given the increased difficulty, the time allotted to complete the test in Round 5 was 50 minutes.

In Ethiopia, in addition to the Amharic, Oromifa and Tigrinya versions, the mathematics test was also translated into Sidaminya, Wolayttinya and Hadiynya for both Round 4 and Round 5.

Table 7. *The number of items in the mathematics test in Round 5 (2016)*

	Younger Cohort 15-year-olds
Ethiopia	30
India	31
Peru	31
Vietnam	31
Common items across countries	23

In India, the siblings who were closest in age to the Younger Cohort children were also tested in maths during both Round 4 and Round 5 (using the same tests administered to the Younger Cohort). A list of items in each round, by country and cohort, along with the answer key, is in the Appendices.

Given that the tests differ from previous rounds and across countries, a straightforward comparison of the number of correct answers (or percentage of correct answers) across countries is not appropriate without first equating scores. This equating has been implemented using a 2-parameter item response theory (IRT) model to generate standard scores which are comparable across time and the four countries (see León 2020). These standardised IRT scores for both the mathematics achievement test and the PPVT are intended to be publicly available by August 2022.

2.7. Early Grade Reading Assessment (EGRA)

The Early Grade Reading Assessment (EGRA) – developed with the support of USAID – measures the skills that contribute to reading acquisition in alphabetic languages and is a collection of several sub-tasks administered individually. In Young Lives, three sub-tasks were selected and adapted to be appropriate for 8-year-olds in the four study countries.

1. **Familiar word reading**

   This measured the child's ability to identify individual words from grade-level texts. The child was presented with 60 words (randomly organised) and was asked to read them in order. The number of words read in 60 seconds was the measured score.

2. **Passage reading and comprehension**

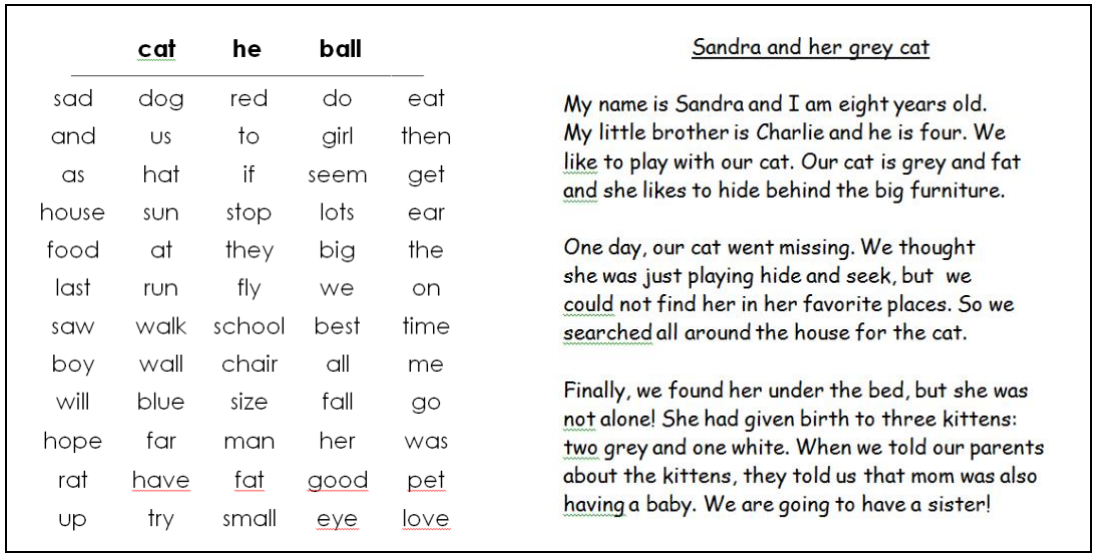
   This test measured the child's ability to answer questions about a given passage. The child was asked to read a short text (130 words). The examiner then recorded the number of words read in 60 seconds. The child was then given more time to read the text silently and answer eight questions (both explicit and inferential in nature).

3. **Listening comprehension**

   This sub-task measured receptive language, based on a passage read to the child by the examiner. Having listened to the passage, the child was asked six questions (again, both explicit and inferential).

The pilot test prior to Round 3 showed that the instrument needed to be further adapted to increase the level of difficulty, in order to properly assess the whole range of children's reading skills. Therefore, in many cases, this meant that the adapted instrument had a higher level of difficulty than the original EGRA test.

An example of EGRA stimuli cards:



	cat	he	ball	
sad	dog	red	do	eat
and	us	to	girl	then
as	hat	if	seem	get
house	sun	stop	lots	ear
food	at	they	big	the
last	run	fly	we	on
saw	walk	school	best	time
boy	wall	chair	all	me
will	blue	size	fall	go
hope	far	man	her	was
rat	have	fat	good	pet
up	try	small	eye	love

Sandra and her grey cat

My name is Sandra and I am eight years old. My little brother is Charlie and he is four. We like to play with our cat. Our cat is grey and fat and she likes to hide behind the big furniture.

One day, our cat went missing. We thought she was just playing hide and seek, but we could not find her in her favorite places. So we searched all around the house for the cat.

Finally, we found her under the bed, but she was not alone! She had given birth to three kittens: two grey and one white. When we told our parents about the kittens, they told us that mom was also having a baby. We are going to have a sister!

Prior to administering the tests, children were given a set of examples to read. If the child was not able to read at least one of the examples correctly, they were not tested in the reading-related sections and moved directly to the listening comprehension section. The test was translated into six languages in Ethiopia – Amharic, Tigrinya, Oromifa, Sidaminya, Wolayttinya

and Hadiynya. In the other countries, the test was translated into Telugu (India), Spanish (Peru) and Vietnamese (Vietnam). Table 8 presents the answers to the EGRA reading sub-tasks in Round 3, while Figure 7 presents the distribution of correct answers to the passage reading comprehension and listening comprehension sub-tasks.

Table 8. *Answers to the EGRA reading sub-tasks for 8-year-olds (Younger Cohort) in Round 3 (2009)*

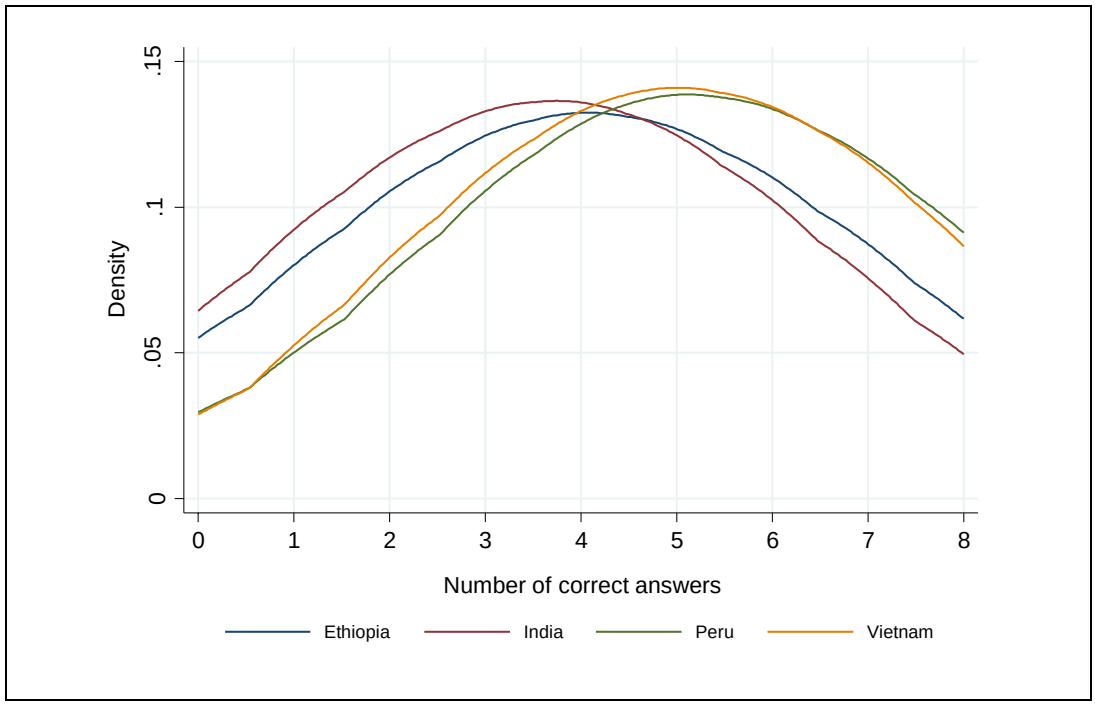
Can the child read an example?	Ethiopia	India	Peru	Vietnam
No	1,176	492	204	0
Yes	702	1,417	1,716	1,939
Did not take the test	7	22	23	25
Observations	1,885	1,931	1,943	1,964
Familiar word reading				
Average number of correct words	21.3	20.5	39.8	53.3
Did not answer section	0	2	1	50
Observations	702	1,417	1,715	1,889
Passage reading				
Average number of correct words	39.7	35	63	97.6
Did not answer section	70	27	53	61
Observations	632	1,390	1,663	1,878

In the listening comprehension test, the interviewer read the following passage:

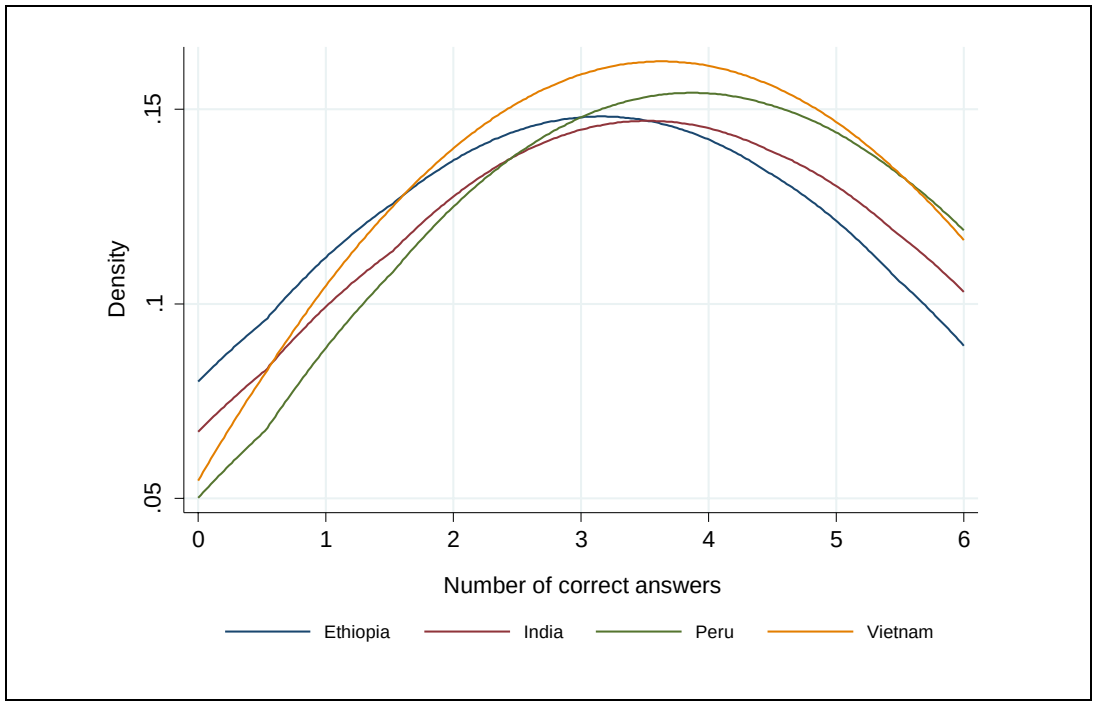
> A yellow little chicken was walking through a bridge. Suddenly, he slipped and fell in the river. 'Help me! I can't swim!' he cried. There was a mouse passing by that saw the little chicken and came to help, but he fell in too. 'What do we do now? I can't swim either' said the mouse. 'I see something that is coming our way!' the chicken replied. They both climbed on the log and rowed to the shore. 'We are saved!' they shouted when they finally arrived to land.

Figure 7. *The distribution of correct answers to the passage reading comprehension and listening comprehension sub-tasks for 8-year-olds (Younger Cohort) in Round 3 (2009)*

Passage reading comprehension



Listening comprehension



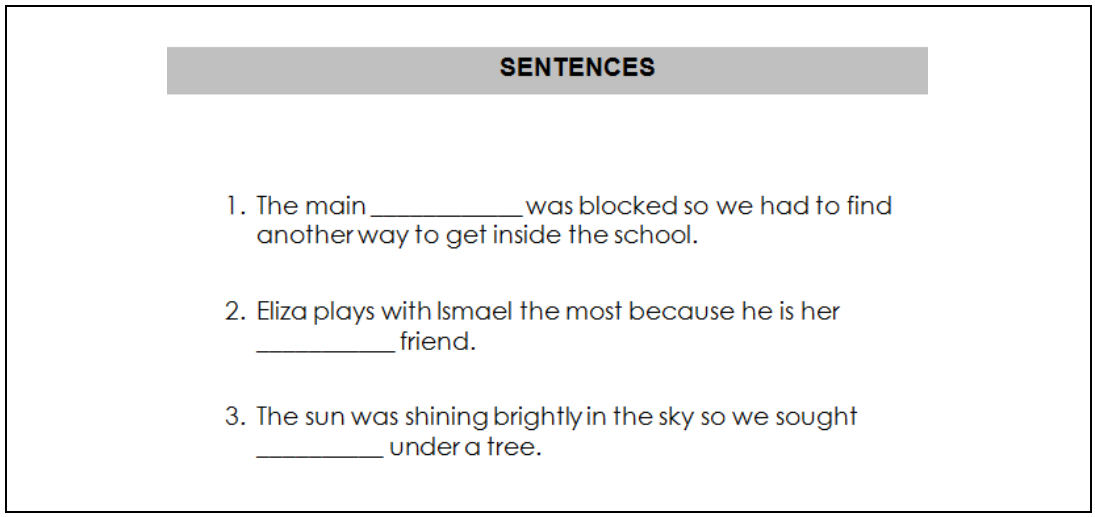
Note: Does not include partially correct answers, allowed for questions 5 and 6.

For each study country, a series of 1-parameter IRT (Rasch) scores were also calculated for those who completed the test in Amharic, Tigrinya, Oromifa in Ethiopia, and the local languages in the other three countries (see Cueto and León 2012). These scores relate to the combined number of correct answers from both the reading and listening comprehension tests.

2.8. Cloze test

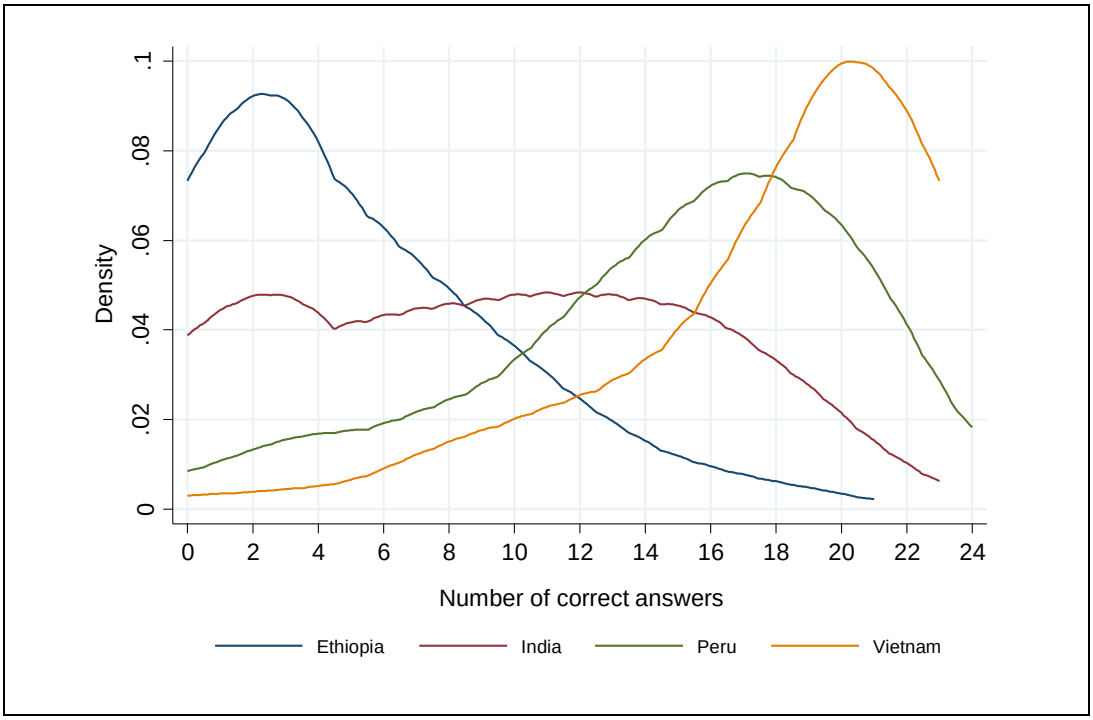
Cloze tests measure a child's level of reading comprehension. The child is asked to read a sentence or a short paragraph and fill in the blanks where entire words have been omitted. The test was developed by GRADE in Peru and consisted of 24 items, which are ordered with increasing difficulty. For each item, a set of acceptable answers was established and items were marked by trained enumerators (after all the surveys were collected) to standardise coding procedures.

Examples of Cloze items:



The Cloze test was administered to 15-year-olds in 2009 (the Older Cohort). The time limit for all items was 10 minutes and the test was taken in the language preferred by the child (which is recorded in the dataset). Figure 8 shows the distribution of correct answers in the Cloze test.

Figure 8. *The distribution of correct answers in Cloze test of 15-year-olds (Older Cohort) in Round 3 (2009)*



2.9. Reading comprehension

Similar to the mathematics achievement tests, the reading comprehension tests were designed to be country-specific and based on extensive piloting of a bank of potential reading items. Three booklets, which varied by difficulty, were piloted in the four countries: (1) basic skills; (2) intermediate skills; and (3) advanced skills in reading. As with the mathematics test, all children in the pilot study started with the intermediate booklet (2) and progressed to the advanced booklet if they completed booklet 2 or moved to the basic booklet if not.

As a result of the pilot study, the final tests were compiled to be administered in Round 4 to both cohorts. The time allotted for the test was 30 minutes in all four countries, which was deemed to be sufficient time to complete the tests. Table 9 shows the number of items in each test and common items across the four study countries.

Table 9. *The number of items in the Round 4 (2013) reading comprehension test*

	Younger Cohort 12-year-olds	Older Cohort 19-year-olds
Ethiopia	24	24
India	24	24
Peru	24	24
Vietnam	31	24
Common items across countries	6	12

Following a similar pilot study in Round 5, reading and comprehension tests were developed for the Younger Cohort (aged 15 in 2016) (Table 10). All cognitive and achievement tests were discontinued for 22-year-olds (the Older Cohort) in Round 5.

Table 10. *The number of items in the Round 5 (2016) reading comprehension test*

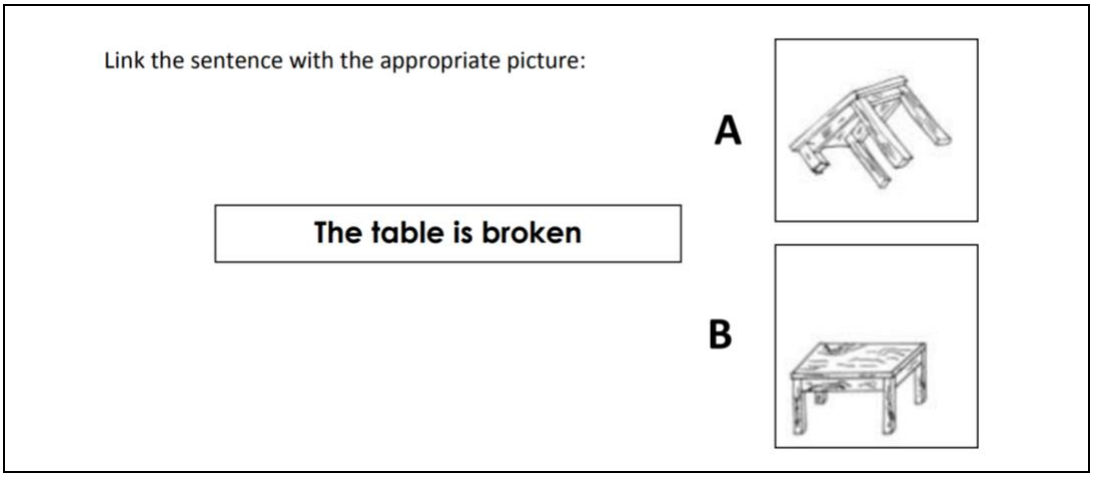
	Younger Cohort 15-year-olds
Ethiopia	27
India	25
Peru	27
Vietnam	26
Common items across countries	8

The full set of items in the reading comprehension tests, in both Round 4 and Round 5, and across the four countries and cohorts, is presented in the Appendices.

2.10. English test (India only)

In Round 4, an additional test of reading and comprehension in English was administered in India. This comprised two parts, the first of which was separated into two sets of questions: Set A, which required matching five single words (written in English) to a matching illustration, and Set B, which asked the child to match three short phrases to one of two possible illustrations. The time taken to complete this initial part of the test was restricted to 5 minutes. For any child who was unable to answer any of the eight questions correctly, the second part of the test was not administered.

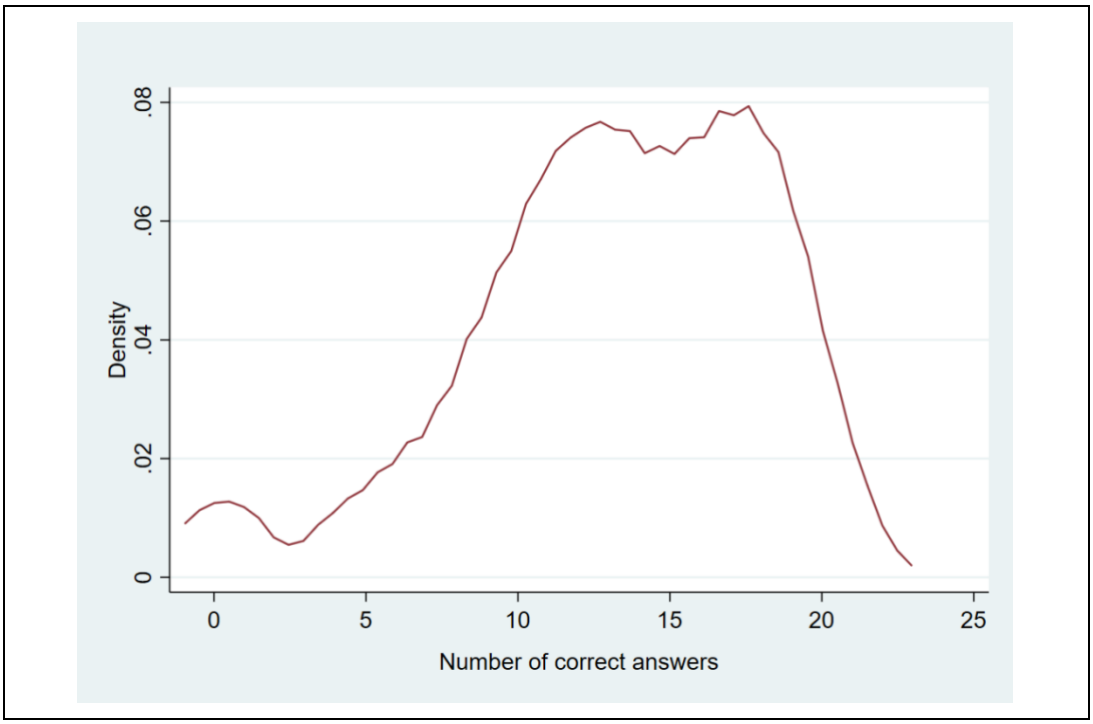
An example of an item from the English test:



The second part of the English test was divided into three sets of questions. Set C included five questions, each requiring the child to circle the appropriate word (from a choice of three) needed to fill in the blank in a short phrase. The second set of questions (Set D) followed a multiple-choice format, whereby the child was asked four questions relating to a short paragraph (110 words) that they had previously been asked to read. Following each question,

the child was given three choices, from which to select their answer. In a similar manner, Set E also required the child to read a paragraph of text, before answering five multiple-choice questions. In this case, however, the paragraph was both longer (250 words) and used substantially more advanced vocabulary. The time allotted to both parts of the test was a maximum of 20 minutes. Figure 9 reports the distribution of correct answers provided by the Younger Cohort in the English test.

Figure 9. *The distribution of correct answers in the English test (India) for 12-year-olds (Younger Cohort) in Round 4 (2013)*



Note: The English test was only administered to the Younger Cohort in India (Round 4).

3. Concluding remarks

This technical note provides an overview of the 10 different instruments used to measure intellectual and cognitive ability in Rounds 1 to 5 of the Young Lives longitudinal study. The information provided is intended as an introduction for researchers interested in the various instruments collected by Young Lives and should be used in conjunction with other guides on the measurement of cognitive skills in the Young Lives technical note series.[5]

The measures obtained from these instruments provide an opportunity to compare ability among the same groups of individuals through childhood and adolescence, while the cohort structure of Young Lives also permits a comparison of two different groups of children, surveyed at the same age but at different points in time. These measures are suitable for use as outcome variables (for researchers interested in studying the determinants of intellectual and cognitive ability) but may also be used as explanatory variables in the analysis of other related outcomes. The information contained in this technical note will be updated with information on the further use of these instruments (and any other measures obtained) in upcoming rounds of Young Lives, as and when these become available.

[5] All the technical notes related to the measurement of cognitive and intellectual ability are available at https://www.younglives.org.uk/publications

References

Cueto, S., J. León, G. Guerrero, and I. Muñoz (2009) *Psychometric Characteristics of Cognitive Development and Achievement Instruments in Round 2 of Young Lives,* Technical Note 15, Oxford: Young Lives.

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León, J., S. Cueto, S. Freire, G. Guerrero, and M. Zapata (2012) 'Young Lives Round 4 Assessment of Abilities Framework', internal discussion paper, Oxford: Young Lives.

León, J., and A. Singh (2017) *Equating Test Scores for Receptive Vocabulary Across Rounds and Cohorts in Ethiopia, India, and Vietnam*, Technical Note 40, Oxford: Young Lives.

León, J., (2020) *Equating Cognitive Scores across Rounds and Cohorts for Young Lives in Ethiopia, India, Peru and Vietnam*, Technical Note 51, Oxford: Young Lives.

OECD (2013) 'PISA 2012 Released Mathematical Items', https://www.oecd.org/pisa/pisaproducts/pisa2012-2006-rel-items-maths-ENG.pdf (accessed 8 April 2022)

Appendices

1. Answer key to Raven's test

Item no.	Series A	Series AB	Series B
1	4	4	2
2	5	5	6
3	1	1	1
4	2	6	2
5	6	2	1
6	3	1	3
7	6	3	5
8	2	4	6
9	1	6	4
10	3	3	3
11	4	5	4
12	5	2	5

2. Cognitive Developmental Assessment (CDA) answer key

Item no.	Answer (letter and code)
1	B/2
2	C/3
3	A/1
4	C/3
5	B/2

Item no.	Answer (letter and code)
6	A/1
7	C/3
8	D/4
9	A/1
10	D/4

Item no.	Answer (letter and code)
11	B/2
12	C/3
13	A/1
14	D/4
15	B/2

Note: Codes are a=01; b=02; c=03; d=04.

3. Peabody Picture Vocabulary Test (PPVT) items and selected items for Receptive Vocabulary Test (modified PPVT), Ethiopia (ET), India (IN) and Vietnam (VN)

Item number	R2 and R3 Younger and Older Cohort (Ethiopia, India, and Vietnam)		R4 and R5 Younger Cohort – selected items per country	
	Answer key	ET	IN	VN
Set 1				
1	4		x	
2	3		x	
3	1			
4	1	x		
5	4			x
6	1		x	
7	2	x		
8	3	x		
9	4	x	x	
10	2			
11	2	x		
12	3	x		x
Set 2				
13	2		x	
14	1			
15	3		x	
16	1	x		x
17	3		x	x
18	2		x	
19	1			
20	4		x	x
21	3			
22	4		x	
23	2	x		
24	4	x		
Set 3				
25	1	x	x	
26	3	x	x	
27	4		x	
28	4	x	x	x
29	1	x		
30	2	x		
31	3	x		x
32	2			
33	2	x	x	x
34	1			
35	4	x		x
36	3		x	

Item number	R2 and R3 Younger and Older Cohort (Ethiopia, India, and Vietnam)		R4 and R5 Younger Cohort – selected items per country	
	Answer key	ET	IN	VN
Set 4				
37	2			
38	4		x	
39	3	x	x	x
40	1			x
41	2		x	
42	1			x
43	3			x
44	4			x
45	4	x		x
46	2	x	x	
47	3	x	x	
48	1			x
Set 5				
49	3			
50	1		x	x
51	1		x	
52	2	x	x	x
53	4			
54	2			
55	1	x	x	
56	4		x	
57	2	x		x
58	3			
59	3	x	x	x
60	4	x	x	x
Set 6				
61	4		x	
62	1			
63	2	x		
64	3	x	x	x
65	4			x
66	3			x
67	2			
68	1		x	
69	4		x	
70	2		x	x
71	3	x	x	
72	1		x	

Item number	R2 and R3 Younger and Older Cohort (Ethiopia, India, and Vietnam)		R4 and R5 Younger Cohort – selected items per country	
	Answer key	ET	IN	VN
Set 7				
73	2			x
74	4	x	x	x
75	3	x	x	x
76	1			x
77	1	x	x	x
78	3	x	x	x
79	2	x		
80	1	x	x	x
81	2		x	x
82	4	x		x
83	3		x	x
84	4	x		x
Set 8				
85	2			
86	4			x
87	1	x		x
88	4	x	x	x
89	3			
90	1	x	x	x
91	4	x		
92	2	x		
93	3		x	
94	2			x
95	3			x
96	1			x
Set 9				
97	2		x	x
98	2			x
99	4			
100	3			x
101	4	x		
102	1			x
103	3	x		
104	4			
105	1			
106	2	x		x
107	1	x		
108	3			x

Item number	R2 and R3 Younger and Older Cohort (Ethiopia, India, and Vietnam)		R4 and R5 Younger Cohort – selected items per country	
	Answer key	ET	IN	VN
Set 10				
109	4			x
110	2	x		
111	3			x
112	3		x	x
113	1			
114	1			
115	4			x
116	2			x
117	1			
118	2			
119	4			
120	3	x		x
Set 11				
121	2			
122	4			x
123	3		x	x
124	2			
125	3			x
126	1			
127	2			
128	1			x
129	4	x		
130	1	x		x
131	4	x		
132	3			
Set 12				
133	3		x	
134	2			
135	1			
136	4			
137	1			
138	1			x
139	4			
140	4		x	
141	2			
142	3			
143	2			
144	3			

Item number	R2 and R3 Younger and Older Cohort (Ethiopia, India, and Vietnam)		R4 and R5 Younger Cohort – selected items per country	
	Answer key	ET	IN	VN
Set 13				
145	4			
146	3			
147	2			
148	3			
149	1			
150	3		x	
151	4	x		
152	1			x
153	2			
154	2		x	
155	1		x	
156	4		x	
Set 14				
157	2			x
158	1			x
159	4			
160	3		x	
161	4			
162	1			
163	2	x		x
164	1			
165	4			x
166	2			
167	3			x
168	3			x
Set 15				
169	4			
170	2			
171	1			x
172	3			
173	4			x
174	2			
175	3			
176	2			
177	1			
178	3		x	x
179	4	x		x
180	1			x

Item number	R2 and R3 Younger and Older Cohort (Ethiopia, India, and Vietnam)		R4 and R5 Younger Cohort – selected items per country	
	Answer key	ET	IN	VN
Set 16				
181	4			
182	1			x
183	3			
184	4			
185	1			
186	3			
187	2			
188	4			
189	2		x	x
190	3			
191	1			
192	2			
Set 17				
193	4			
194	2			
195	3			
196	1			
197	1	x		x
198	4			
199	3			
200	1			
201	4			
202	2			
203	3			
204	2			

Note: x indicates Round 2 and 3 items included in Round 4 and 5.

4. Revised Peabody Picture Vocabulary Test (PPVT-R) Spanish version: Peru

Administered to the Younger and Older Cohort in Round 2 and Round 3, and to the Younger Cohort in Round 4 and Round 5.

Item number	Answer key	Item number	Answer key	Item number	Answer key	Item number	Answer key
1	2	33	4	65	3	97	2
2	4	34	4	66	3	98	2
3	1	35	1	67	1	99	3
4	2	36	4	68	2	100	3
5	1	37	1	69	4	101	1
6	4	38	2	70	2	102	4
7	1	39	3	71	3	103	1
8	1	40	3	72	1	104	1
9	4	41	3	73	4	105	1
10	2	42	2	74	1	106	2
11	3	43	1	75	3	107	2
12	3	44	2	76	2	108	3
13	3	45	1	77	3	109	3
14	3	46	4	78	2	110	3
15	2	47	2	79	3	111	4
16	2	48	2	80	4	112	2
17	1	49	1	81	2	113	1
18	1	50	3	82	3	114	2
19	2	51	4	83	2	115	3
20	2	52	2	84	1	116	3
21	4	53	3	85	3	117	2
22	3	54	3	86	2	118	3
23	2	55	4	87	2	119	1
24	4	56	4	88	2	120	3
25	3	57	1	89	4	121	2
26	3	58	3	90	4	122	3
27	3	59	1	91	4	123	1
28	4	60	1	92	3	124	4
29	2	61	4	93	4	125	4
30	4	62	1	94	4		
31	3	63	4	95	4		
32	2	64	2	96	4		

5. Basic, intermediate and advanced skills measured in mathematics and achievement tests in Round 4 and Round 5

	Reading literacy	Mathematical literacy
Basic literacy skills At this level, children have emergent reading and mathematical skills that are building blocks for developing reading and mathematical literacy. Children have raw numeracy notions (e.g. quantity discrimination) and reading fluency (e.g. word fluency).	**Letter naming fluency:** measures the ability of identifying or recognise letters. In this task, children are presented with a page of upper- and lower-case letters arranged in a random order and are asked to name as many letters as they can in one minute. **Word fluency:** direct measure of word reading. It measures alphabetic understanding and phonological decoding ability. In this task, children are presented with a paper with consonant-vowel and consonant-vowel-consonant words arranged in a random order and are asked to read as many words as they can in one minute. **Reading fluency:** this subtest measures the ability to accurately and rapidly process simple written sentences in a passage or paragraph. In this task, children are presented with a paper with a passage or long paragraph and are asked to read the passage in one minute.	Number identification: this subtest measures the ability to visually identify and orally name numbers. In this task, children are presented with a page of numbers arranged in a random order and are asked to name as many as they can in one minute. **Quantity discrimination:** this subtest measures the ability to orally identify and discriminate figures according to their number of elements. In this task, children are presented with stimulus where they have to indicate what figure has many, few or no elements. **Patterns identification:** this subtest measures the ability to recognise and identify arithmetical and geometrical patterns in a set of numbers or figures.
Intermediate literacy skills At this level, children are able to go beyond decoding and identifying letters and numbers. Children can use mathematical concepts (e.g. addition) or are able to understand the meaning of any simple written expression (e.g. sentence or paragraph).	**Vocabulary knowledge:** this subtest measures the extent to which children have the ability to go from the printed word to its meaning. **Sentence comprehension:** this subtest measures basic abilities of reading comprehension. It measures children's ability to complete the meaning of sentence through the use the correct word (noun, verb or pronoun).	**Calculation:** this subtest measures children's arithmetic abilities like addition, subtraction, multiplication and division of whole numbers, fractions and decimals and computing percentages. **Measurement:** this subtest measures the extent to which children comprehend the measurable characteristics (attributes and dimensions) of objects and apply techniques to measure them. **Spatial abilities:** this subtest measures children's ability to understand and apply space concepts (rotation, transposing, coordinates), in order to transform visual images.
Advanced literacy skills At this level, children are able to retrieve, interpret, and reflect on ideas contained on everyday life texts as well as to use, connect and apply mathematical concepts on them.	**Reading comprehension:** this subtest measures children's ability to retrieve, interpret, and reflect on informational and narrative texts related with daily life situations (e.g. medical prescription).	**Problem solving:** this subtest measures children's ability to use, connect and apply mathematical concepts on informational and narrative texts related with everyday life situations (e.g. news articles).

Source: León et al. (2012)

6. Items in mathematics tests across rounds and cohorts, four countries

Ethiopia						India						Vietnam						Peru						Answers
Younger Cohort			Older Cohort			Younger Cohort			Older Cohort			Younger Cohort			Older Cohort			Younger Cohort			Older Cohort			
Question number			Question number			Question number			Question number			Question number			Question number			Question number			Question number			
Round 3	Round 4	Round 5	Round 2	Round 3	Round 4	Round 3	Round 4	Round 5	Round 2	Round 3	Round 4	Round 3	Round 4	Round 5	Round 2	Round 3	Round 4	Round 3	Round 4	Round 5	Round 2	Round 3	Round 4	
	12		1		8		9		1		6				1				9		1		5	419
21	8	4	2		4	21	5	2	2			21	2		2			21	5	3	2			45
	3		3												3						3			8
									3															14
10	1					10						10						10						5
11	2	1				11						11						11						5
12						12						12						12						79
13						13						13						13						15
14						14						14						14						67
15						15						15						15						165
16						16						16						16						3
17	11				7	17	8					17						17	8					21
18						18						18						18						875
19				5		19				5		19				5		19				5		767
20	14	2			10	20	11				8	20						20	11				7	624
22				9		22				9		22				9		22				9		76
23				10		23				10		23				10		23				10		9
24						24						24						24						56
25	10				6	25	7				5	25						25	7				4	9
26	7	3			3	26	4	1			3	26						26	4	1			2	240
27	4					27	1					27						27	1					2
28	13	5		7	9	28	10	3		7	7	28	4	5		7		28	10	4		7	6	3
29	9				5	29	6				4	29	3					29	6				3	135
				1						1						1						1		1095
				2						2						2						2		150
				3						3						3						3		36
				4						4						4						4		9
				6						6						6						6		51
				8						8						8						8		900
	17	6		11	13		16	4		11	13		11			11	5		16	5		11	12	17.43
				12						12						12						12		9/4 or 2.25
	15	7		13	11		14	5		13	11		9	6		13			14	6		13	10	18.03
	18	8		14	14		17	6		14	14		12	7		14	6		17	7		14	13	18/24 or 3/4
				15						15						15						15		23
	16	9		16	12		15	7		16	12		10	1		16	4		15	2		16	11	60
				17						17						17						17		241
				18						18						18						18		-1.59
				19						19						19						19		7/5
				20						20						20						20		25/63
							12 D				9								12 D				8 D	6536
							13 A				10								13 A				9 A	113283
							19 B				16 B		16 B						19 B				15 B	0.6
																	11 C							2.28
	5 C		4 B		1 C		2 C		4 B		1 C		1 C		4 B				2 C		4 B		1 C	300+40+2
	6 B		5 B		2 B		3 B		5 B		2 B				5 B				3 B		5 B			Nine thousand seven hundred and forty
	20 A		6 A		16 A		20 A		6 A		17 A		5 A		6 A		1 A		20 A		6 A		16 A	Multiply 4x8
			7B						7B						7B						7B			Same answer
	21 D		8 D		17 D		21 D		8 D		18 D		6 D		8 D		2 D		21 D		8 D		17 D	204÷4
			9						9						9						9			7
	22 C	12 C	10	27	18 C		22 C	10 C	10	27	19 C		7 C		10	27	3 C		22 C	10 C	10	27	18 C	400
	19 D				15 D		18 D				15 D		15 D				8 D		18 D				14 D	8.4
													8 A											7 036 205
				21C						21C						21C						21C		Same answer
				22						22						22						22		26
				23D						23D						23D						23D		Same answer
		14D		24D				12D		24D				8D		24D				12D		24D		Same answer
		10 D		25 D				8 D		25 D				2 D		25 D				8 D		25 D		350 000
				26A						26A						26A						26A		Same answer

Ethiopia												India												Vietnam												Peru												Answers
Younger Cohort						Older Cohort						Younger Cohort						Older Cohort						Younger Cohort						Older Cohort						Younger Cohort						Older Cohort						
Question number						Question number						Question number						Question number						Question number						Question number						Question number						Question number						
Round 3		Round 4		Round 5		Round 2		Round 3		Round 4		Round 3		Round 4		Round 5		Round 2		Round 3		Round 4		Round 3		Round 4		Round 5		Round 2		Round 3		Round 4		Round 3		Round 4		Round 5		Round 2		Round 3		Round 4		
								28												28										28												28						7.25
								29												29										29												29						18
				15				30								13				30								9				30								13				30						30
		23	B							19	B			23	B							20	B			13	B							7	B			23	B							19	B	3/8
		24	D	13	D					20	D			25	D	11	D					22	D															24	D	11	D					20	D	30
														24	C							21	C															25	C							21	C	20
																										14	B																					1/3
																										17	D							10	D													0.045
																										18	D							12	D													7
																																		19	A													8
				11	B											9	B									19	B	3	B													9	B							1200
																										20	B							13	B													32
				16	C											14	C									21	C	10	C					14	C							14	C							540
																										22	C																					25:5
																										23	B																					700÷200
				17	A											15	A									28	A	11	A					20	A							15	A							2/15
																										29	A							21	A													15.25 L
																										30	B							22	B													64m2
																										31	B																					5/8
																										32	D																					28 000
																										33	D							23	D													October - November
																										34		4						24														32
																																		25														2/3 or 40 mins
																																		27														20x15
																																		26														3 meters
		25	A	18	A					21	A			26	A	16	A					23	A					12	A									26	A	16	A					22	A	199
		26	B	19	B					22	B			27	B	17	B					24	B					13	B									27	B	17	B					23	B	494
		27	D							13	D			28	D							25	D					14	D									28	D							24	D	1797
		28	D							24	D			29	D							26	D					15	D									29	D							25	D	48
										25	C																																					2.33
										26	D																																					10.75
										27	A																																					6.96
										28	B																																					22.32
				20	C											18	C					27	C			24	C	16	C					15	C							18	C			26	C	3
				21	A											19	A					28	A			25	A	17	A					16	A							19	A			27	A	18
				22	A											20	A					29	A			26	A	18	A					17	A							20	A			28	A	14000
				23	A											21	A					30	A			27	A	19	A					18	A							21	A			29	A	Only multiplication
				24	B											22	B											20	B													22	B					500
				25	C											23	C											21	C													23	C					April
				26	B											24	B											22	B													24	B					370
				27	B											25	B											23	B													25	B					same in first 10 mins and next 5 mins
				28	A											26	A											24	A													26	A					it took 20 mins to get to her aunt's house
				29												27												25														27						28
				30	B											28	B											26	B													28	B					Bolte
																29	D											27	D													29	D					Dezel
																30												28														30						120
																31	C											29	C													31	C					3400
																												30																					11:00 or 11:00am
																												31																					40

7. Items in reading and comprehension tests across rounds and cohorts

Set	Var name	MC	Key	(Peru)	Number in paper questionnaire											
					Ethiopia			India			Peru			Vietnam		
					YC		OC	YC		OC	YC		OC	YC		OC
					R4	R5	R4	R4	R5	R4	R4	R5	R4	R4	R5	R4
A	read01	B	2	C				1		1	1		1			
	read02	B	2					2		2	2		2			
	read03	C	3					3		3	3		3			
	read04	C	3		1		1									
	read05	A	1		2		2									
	read06	A	1		3		3									
B	read07	C	3								4	1	4			
	read08	B	2		4	1	4	4	1	4						
	read09	A	1		5	2	5	5		5						
	read10	C	3						2							
	read11	B	2		6	3	6	6	3	6	5	2	5			
	read12	A	1								6	3	6			
C	read13	C	3		7	4										
	read14	C	3		8	5										
	read15	B	2		9	6										
	read16	A	1		10	7										
	read17	B	2		11	8										
	read18	D	4		12	9										
D	read19	A	1		13	10	7	7	4			4			-	
	read20	C	3		14	11	8	8	5			5			-	
	read21	B	2		15	12	9	9	6			6			-	
	read22	D	4		16	13	10	10	7			7			1	
	read23	C	3		17	14	11	11	8			8			2	
	read24	A	1		18	15	12	12	9			9			3	
F	read25	B	2					13	10	7	7					
	read26	C	3					14	11	8	8					
	read27	A	1					15	12	9	9					
	read28	C	3					16	13	10	10					
	read29	A	1	C				17	14	11	11					
	read30	C	3					18	-	12	12					
G	read31	A	1		19		13	19		13	13	10	7	1		1
	read32	A	1		20		14	20		14	14	11	8	2		2
	read33	B	2		21		15	21		15	15	12	9	3		3
	read34	D	4		22		16	22		16	16	13	10	4		4
	read35	B	2		23		17	23		17	17	14	11	5		5
	read36	C	3		24		18	24		18	18	15	12	6		6

7. Items in reading and comprehension tests across rounds and cohorts (continued)

Set	Var name	MC	Key	(Peru)	Number in paper questionnaire											
					Ethiopia			India			Peru			Vietnam		
					YC		OC	YC		OC	YC		OC	YC		OC
					R4	R5	R4	R4	R5	R4	R4	R5	R4	R4	R5	R4
H	read37	B	2			16	19		15	19	19	22	13	13		7
	read38	B	2			17	20		16	20	20	23	14	14		8
	read39	B	2			18	21		17	21	21	24	15	15		9
	read40	D	4			19	22		18	22	22	25	16	16		10
	read41	B	2			20	23		19	23	23	26	17	17		11
	read42	A	1			21	24		20	24	24	27	18	18		12
J	read43	D	4												4	
	read44	C	3												5	
	read45	B	2												6	
	read46	C	3												7	
	read47	A	1												8	
	read48	C	3												9	
K	read49	B	2			22			21			16	19	19	10	13
	read50	D	4			23			22			17	20	20	11	14
	read51	A	1			24			23			18	21	21	12	15
	read52	C	3			25			24			19	22	22	13	16
	read53	D	4			26			25			20	23	23	14	17
	read54	B	2			27			-			21	24	24	15	18
L	read55	A	1											25	16	19
	read56	C	3											26	17	20
	read57	D	4											27	18	21
	read58	A	1											28	19	22
	read59	B	2											29	20	23
	read60	B	2											30	21	24
N	read61	B	2											7	22	
	read62	C	3											8	23	
	read63	D	4											9	24	
	read64	A	1											10	25	
	read65	D	4											11	26	
	read66	A	1											12	-	

Young Lives

An International Study of Childhood Poverty

About Young Lives

Young Lives is an international study of childhood poverty and transitions to adulthood, following the lives of 12,000 children in four countries (Ethiopia, India, Peru and Vietnam). Young Lives is a collaborative research programme led by a team in the Department of International Development at the University of Oxford in association with research and policy partners in the four study countries.

Through researching different aspects of children's lives across time, we seek to improve policies and programmes for children and young people.

Young Lives Research and Policy Partners

Ethiopia

- *Policy Studies Institute*
- *Pankhurst Development Research and Consulting plc*

India (Andhra Pradesh and Telangana)

- *Centre for Economic and Social Studies, Hyderabad (CESS)*
- *Sri Padmavati Mahila Visvavidyalam (Women's University), Tirupati (SPMVV)*

Peru

- *Grupo de Análisis para el Desarollo (GRADE)*
- *Instituto de Investigación Nutricional (IIN)*

Vietnam

- *Centre for Analysis and Forecast, Viet Nam Academy of Social Sciences (CAF-VASS)*
- *General Statistics Office of Viet Nam (GSO)*

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